August 26, 1998

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

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING A PROPOSED TECHNICAL SPECIFICATION CHANGE ON EMERGENCY DIESEL GENERATOR ALLOWED OUTAGE TIME (TAC NOS. M93415 AND M93416)

Dear Mr. O'Hanlon:

The Commission has issued the enclosed Amendment Nos. 214 and 195 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station (NAPS), Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your letter dated September 1, 1995, as supplemented April 8, 1996; April 22, 1996; April 23, 1996; November 18, 1997; February 9, 1998; March 25, 1998; May 5, 1998; June 25, 1998, and June 29, 1998.

The amendments change the NAPS TS to allow an extended allowed outage time of 14 days for one emergency diesel generator.

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,
Original signed by:
N. Kalyanam, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosures:
1. Amendment No. 214 to NPF-4
2. Amendment No. 195 to NPF-7
3. Safety Evaluation

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cc w/encls: See next page

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OFFICE	PM:PDII-1	LA:PDII-1	D:PDII-1	DSSA/SPSB	DSSA/EELB	TSB	OGC
NAME	NKalyanam	Dunnington	PTKuo		JCalvo	WBeckner	
DATE	8/17/98	8/17/98	8/26/98	/98	/98	8/26/98	8/11/98
COPY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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DATED: August 26, 1998

AMENDMENT NO. 214- FACILITY OPERATING LICENSE NO. NPF-4-NORTH ANNA UNIT 1
AMENDMENT NO. 195- FACILITY OPERATING LICENSE NO. NPF-7-NORTH ANNA UNIT 2

Docket File
PUBLIC
PDII-1 RF
J. Zwolinski, 14/E/4
G. Hill (4), TWFN 5/C/3
W. Beckner
ACRS
L. Plisco, RII
G. Edison

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SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING A PROPOSED TECHNICAL SPECIFICATION CHANGE ON EMERGENCY DIESEL GENERATOR ALLOWED OUTAGE TIME (TAC NOS. M93415 AND M93416)

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DATE	8/7/98	8/7/98	8/26/98	/98	/98	8/26/98	8/11/98
COPY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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

August 26, 1998

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

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING A PROPOSED TECHNICAL SPECIFICATION CHANGE ON EMERGENCY DIESEL GENERATOR ALLOWED OUTAGE TIME (TAC NOS. M93415 AND M93416)

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Sincerely,

N. Kalyanam, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosures:
1. Amendment No. 214 to NPF-4
2. Amendment No. 195 to NPF-7
3. Safety Evaluation

cc w/enclosures:
See next page

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

North Anna Power Station
Units 1 and 2

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Robert B. Strobe, M.D., M.P.H.
State Health Commissioner
Office of the Commissioner
Virginia Department of Health
P.O. Box 2448
Richmond, Virginia 23218

DATED: August 26, 1998

AMENDMENT NO. 214- FACILITY OPERATING LICENSE NO. NPF-4-NORTH ANNA UNIT 1
AMENDMENT NO. 195- FACILITY OPERATING LICENSE NO. NPF-7-NORTH ANNA UNIT 2

[redacted]
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G. Edison

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. 214
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 September 1, 1995, as supplemented April 8, 1996; April 22, 1996; April 23, 1996; November 18, 1997; February 9, 1998; March 25, 1998; May 5, 1998; June 25, 1998, and June 29, 1998, 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. 214 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, the license is amended to add paragraph 2.D.(3)f. to the Facility Operating License No. NPF-4 as follows:

   f. The Additional Conditions contained in Appendix C, as revised through Amendment No. 214 , are hereby incorporated into this license. Virginia Electric and Power Company shall operate the facility in accordance with the Additional Conditions.

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

FOR THE NUCLEAR REGULATORY COMMISSION

A E Edison for

P. T. Kuo, Acting Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachments:
1. Page 5 of License No. NPF-4
2. Appendix C to License No. NPF-4
3. Changes to the Technical Specifications

Date of Issuance: August 26, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 214

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace the following pages of the Operating License with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Remove Pages	Insert Pages
5	5
---	Appendix C

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 areas of change. Overleaf pages B 3/4 0-1 and B 3/4 1-1 are included for document completeness.

Remove Pages	Insert Pages
1-3	1-3
3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
3/4 8-2a	3/4 8-2a
3/4 8-3	3/4 8-3
3/4 8-3a	3/4 8-3a
3/4 8-3b	3/4 8-3b
3/4 8-3c	3/4 8-3c
3/4 8-4	3/4 8-4
3/4 8-4c	3/4 8-4c
3/4 8-4d	3/4 8-4d
3/4 8-5	3/4 8-5
B 3/4 0-2	B 3/4 0-2
B 3/4 1-2	B 3/4 1-2
B 3/4 8-1	B 3/4 8-1
B 3/4 8-2	B 3/4 8-2
6-13c	6-13c
6-14	6-14

f. The Additional Conditions contained in Appendix C, as revised through Amendment No. 214 , are hereby incorporated into this license. Virginia Electric and Power Company shall operate the facility in accordance with the Additional Conditions.

j. The Virginia Electric and Power Company shall modify or replace the presently installed Barton Models No. 763 and No. 764 Lot 1 Transmitters used in safety-related circuits inside containment with transmitters that have been demonstrated to provide a greater tolerance to harsh environments. The modifications or replacement of these transmitters shall be completed as soon as practicable but not later than June 30, 1982.

o. The provisions of Specification 4.0.4 are not applicable to the performance of surveillance activities associated with diesel generator battery Technical Specification 4.8.1.1.3.d until the completion of the initial surveillance interval associated with that specification.

r. The Virginia Electric and Power Company shall perform a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;

2. Identification of the procedures used to quantify parameters that are critical to control points;

3. Identification of process sampling points;

4. Procedures for the recording and management of data;

5. Procedures defining corrective actions for off control point chemistry conditions; and

APPENDIX C

ADDITIONAL CONDITION

FACILITY OPERATING LICENSE NO. NPF-4

Amendment Number	Additional Condition:	Implementation Date
214	The licensee shall implement a procedure that will prohibit entry into an extended Emergency Diesel Generator Outage Time (14 days), for scheduled maintenance purposes, if severe weather conditions are expected, as described in the licensee's application dated June 25, 1998, and evaluated in the staff's Safety Evaluation dated August 26, 1998.	Prior to implementation of Amendment No. 214

ENGINEERED SAFETY FEATURE RESPONSE TIME

1.12 The ENGINEERED SAFETY FEATURE RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include emergency diesel generator starting and sequence loading delays where applicable.

FREQUENCY NOTATION

1.13 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

FULLY WITHDRAWN

1.13a The control bank FULLY WITHDRAWN position shall be within the interval of 225 to 229 steps withdrawn, inclusive. Definition of the FULLY WITHDRAWN position for each specific cycle shall be documented in the rod insertion limit operator curve.

GASEOUS RADWASTE TREATMENT SYSTEM

1.14 A GASEOUS RADWASTE TREATMENT SYSTEM is the system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment. The system is composed of the waste gas decay tanks, regenerative heat exchanger, waste gas charcoal filters, process vent blowers, waste gas surge tanks and waste gas diaphragm compressor.

IDENTIFIED LEAKAGE

1.15 IDENTIFIED LEAKAGE shall be:

a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or

b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or

c. Reactor coolant system leakage through a steam generator to the secondary system.

MEMBER(S) OF THE PUBLIC

1.16 MEMBER(S) OF THE PUBLIC shall include all individuals who by virtue of their occupational status have no formal association with the plant. This category shall include non-employees of the licensee who are permitted to use portions of the site for recreational, occupational, or other purposes not associated with plant functions. This category shall not include non-employees such as vending machine servicemen or postmen who, as part of their formal job function, occasionally enter an area that is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

3/4.8 ELECTRICAL POWER SYSTEMS

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 emergency diesel generators (EDGs):

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. (**Risk-Informed**) With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. 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 is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive 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 EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition:

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

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

1. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement is(are) inoperable at the start of the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.
2. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement become(s) inoperable during the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.

c. With one offsite circuit and one EDG 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 EDG 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 EDG) 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.

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

LIMITING CONDITION FOR OPERATION

ACTION: (Continued):

e. With two of the above required EDGs 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 EDGs 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 EDG, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable EDG.

f. With one underground fuel oil storage tank of 3.8.1.1.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 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically 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 alignment indicating power availability.

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each emergency diesel generator (EDG) shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8.2 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank.
2. Verifying the fuel level in the fuel storage tank.
3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
4. Verifying the EDG can start** and gradually accelerate to synchronous speed (900 rpm) with generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz. Subsequently, verifying the generator is synchronized, gradually loaded** to an indicated 2500-2600 kw*** and operates for at least 60 minutes.
5. Verifying the EDG is aligned to provide standby power to the associated emergency busses.

b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.

** 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.

4.8.1.1.2 (Continued)

c. At least once per 184 days, the EDG 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 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The EDG 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 EDG 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. Verifying that, on rejection of a load of greater than or equal to 610 kw, the voltage and frequency are maintained with 4160 ± 420 volts and 60 ± 1.2 Hz.

2. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.

** 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.

4.8.1.1.2 (Continued)

3. 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz.
4. Verifying that on an ESF actuation test signal (without loss of offsite power) the EDG starts** on the auto-start signal and operates on standby for greater than or equal to 5 minutes.
5. 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz.
   c. Verifying that all EDG 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.
6. Verifying the EDG operates** for at least 24 hours. During the first 2 hours of this test, the EDG 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 EDG shall be loaded to an indicated 2500-2600 kw***.

** 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.

4.8.1.1.2 (Continued)

7. Verifying that the auto-connected loads to each EDG do not exceed the 2000 hour rating of 3000 kw.

8. Verifying the EDG's capability to:

   a) Synchronize with the offsite power source while the EDG 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.

9. Verifying that the following EDG lockout features prevent EDG starting only when required:

   a) Remote Local Selection Switch

   b) Emergency Stop Switch

10. Verifying the EDG's hot restart capability by:

    a) Operating the EDG** 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal.

e. At least once per 10 years or after any modifications which could affect EDG interdependence by starting** both EDGs simultaneously, during shutdown, and verifying that both EDGs accelerate to at least 900 rpm in less than or equal to 10 seconds.

f. At least once per 24 months during any mode of operation, by subjecting each EDG to a preventive maintenance inspection in accordance with maintenance procedures appropriate for diesels used for this class of standby service.

** 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.3 Each emergency 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 greater than or equal to 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 x 10 to the minus 6 ohms.

c. At least once per 18 months, by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material.
3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohms.
4. The battery charger will supply at least 10 amperes at 125 volts for at least 4 hours.

d. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test.

e. At least once per 18 months, during shutdown, perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.

Table 4.8-2

EMERGENCY DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Number of Failures in Last 100 Valid Tests*	Test Frequency
≤ 1	≤ 4	Once per 31 days
≥ 2**	≥ 5	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 emergency diesel generator basis.

For the purposes of determining 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.4 For each underground EDG fuel oil storage tank perform the following at least once per 10 years:

1. Drain each fuel oil storage tank
2. Remove sediment from each fuel oil storage tank
3. Inspect each fuel oil storage tank for integrity
4. Clean each fuel oil storage tank.

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 emergency 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.

3/4.0 APPLICABILITY

BASES

The specifications of this section provide the general requirements applicable to each of the Limiting Conditions for Operation and Surveillance Requirements within Section 3/4.

3.0.1 This specification defines the applicability of each specification in terms of defined OPERATIONAL MODES or other specified conditions and is provided to delineate specifically when each specification is applicable.

3.0.2 This specification defines those conditions necessary to constitute compliance with the terms of an individual Limiting Condition for Operation and associated ACTION requirement.

3.0.3 This specification delineates the ACTION to be taken for circumstances not directly provided for in the ACTION statements and whose occurrence would violate the intent of the specification. For example, Specification 3.5.1 calls for each Reactor Coolant System accumulator to be OPERABLE and provides explicit ACTION requirements when one accumulator is inoperable. Under the terms of Specification 3.0.3, if more than one accumulator is inoperable, within one hour measures must be initiated to place the unit in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours. As a further example, Specification 3.6.2.1 requires two Containment Quench Spray Systems to be OPERABLE and provides explicit ACTION requirements if one spray system is inoperable. Under the terms of Specification 3.0.3, if both of the required Containment Quench Spray Systems are inoperable, within one hour measures must be initiated to place the unit in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the following 6 hours, and in at least COLD SHUTDOWN in the next 24 hours.

3.0.4 This specification provides that entry into an OPERATIONAL MODE or other specified applicability condition must be made with (a) the full complement of required systems, equipment or components OPERABLE and (b) all other parameters as specified in the Limiting Conditions for Operation being met without regard for allowable deviations and out of service provisions contained in the ACTION statements.

The intent of this provision is to insure that facility operation is not initiated with either required equipment or systems inoperable or other specified limits being exceeded.

Exceptions to this provision have been provided for a limited number of specifications when startup with inoperable equipment would not affect plant safety. These exceptions are stated in the ACTION statements of the appropriate specifications.

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for an out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, shutdown is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system be OPERABLE. The ACTION statement provides a 24-hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power source, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable

3/4.1 REACTIVITY CONTROL SYSTEMS

B A S E S

3/4.1.1 BORATION CONTROL

3/4.1.1.1 and 3/4.1.1.2 SHUTDOWN MARGIN

A sufficient SHUTDOWN MARGIN ensures that 1) the reactor can be made subcritical from all operating conditions, 2) the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and 3) the reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition.

SHUTDOWN MARGIN requirements vary throughout core life as a function of fuel depletion, RCS boron concentration, and RCS T_{avg}. The most restrictive condition occurs at EOL, with T_{avg} at no load operating temperature, and is associated with a postulated steam line break accident and resulting uncontrolled RCS cooldown. In the analysis of this accident, a minimum SHUTDOWN MARGIN of 1.77% $\Delta k/k$ is initially required to control the reactivity transient. Accordingly, the SHUTDOWN MARGIN requirement is based upon this limiting condition and is consistent with FSAR safety analysis assumptions. With T_{avg} < 200°F, the reactivity transients resulting from a postulated steam line break cooldown are minimal. A 1.77% $\Delta k/k$ shutdown margin provides adequate protection for the boron dilution accident.

3/4.1.1.3 BORON DILUTION

A minimum flow rate of at least 3000 GPM provides adequate mixing, prevents stratification and ensures that reactivity changes will be gradual during boron concentration reductions in the Reactor Coolant System. A flow rate of at least 3000 GPM will circulate the Reactor Coolant System volume in approximately 30 minutes. The reactivity change rate associated with boron reductions will therefore be within the capability for operator recognition and control.

3/4.1.1.4 MODERATOR TEMPERATURE COEFFICIENT (MTC)

The limitations on MTC are provided to ensure that the value of this coefficient remains within the limiting conditions assumed for this parameter in the FSAR accident and transient analyses.

The MTC values of this specification are applicable to a specific set of plant operations; accordingly, verification of MTC values at

3/4.1.1.4 MODERATOR TEMPERATURE COEFFICIENT (MTC) (Continued)

conditions other than those explicitly stated will require extrapolation to those conditions in order to permit an accurate comparison.

The most negative MTC value was obtained by incrementally correcting the MTC used in the FSAR analyses to nominal operating conditions. These corrections involved adding the incremental change in the MTC associated with a core condition of Bank D inserted to an all rods withdrawn condition and an incremental change in MTC to account for measurement uncertainty at RATED THERMAL POWER conditions. These corrections result in the End of Cycle (EOC) MTC limit. The 300 ppm surveillance limit MTC value represents a conservative value (with corrections for burnup and soluble boron) at a core condition of 300 ppm equilibrium boron concentration and is obtained by making these corrections to the EOC MTC limit.

Once the equilibrium boron concentration falls below about 60 ppm, dilution operations take an extended amount of time and reliable MTC measurements become more difficult to obtain due to the potential for fluctuating core conditions over the test interval. For this reason, MTC measurements may be suspended provided the measured MTC value at an equilibrium full power boron concentration $\leq$ 60 ppm is less negative than the 60 ppm surveillance limit. The difference between this value and the EOC-MTC limit conservatively bounds the maximum credible change in MTC between the 60 ppm equilibrium boron concentration (all rods withdrawn, RATED THERMAL POWER conditions) and the licensed end-of-cycle, including the effect of boron concentration, burnup, and end-of-cycle coastdown.

The surveillance requirements for measurement of the MTC at the beginning and near the end of each fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.5 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 541°F. This limitation is required to ensure 1) the moderator temperature coefficient is within its analyzed temperature range, 2) the protective instrumentation is within its normal operating range, and 3) the P-12 interlock is above its setpoint, and 4) compliance with Appendix G to 10 CFR Part 50 (see Bases 3/4.4.9).

3/4.1.2 BORATION SYSTEMS

The boron injection system ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, 4) boric acid transfer pumps, 5) associated heat tracing systems, and 6) an emergency power supply from OPERABLE emergency diesel generators.

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.

Entering the 14 day EDG action statement during power operation has been shown to result in a small increase in the core damage frequency, provided the Alternate A.C. diesel generator (AAC DG) is OPERABLE and the opposite unit's EDGs are both OPERABLE. A Configuration Risk Management Program (CRMP) defined in Administrative Control Section 6.8.4.g is implemented to evaluate risk associated with the EDG outage. The EDG and AAC DG annual unavailability is limited by the Maintenance Rule Program.

When one or more of the diesel generators (i.e., AAC DG or opposite unit's EDGs) required to enter the 14 day action statement is inoperable or becomes inoperable during the fourteen day action statement of the affected EDG, a 72 hour action statement is entered. If the three diesel generators (i.e., AAC DG or the opposite unit's EDGs) required to support entry into the fourteen day action statement are restored to OPERABLE status within 72 hours, the remainder of the 14 day action statement can be used. Restoring the affected EDG to service removes the conditional OPERABILITY requirements for the AAC DG and opposite unit's EDGs.

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

The operability requirements for the AAC DG are specified in the Technical Requirements Manual. In addition, to be considered OPERABLE to support the fourteen day action statement the AAC DG must be capable of providing power to the affected bus (i.e., connectable to the bus with the associated breakers and control power available). If the AAC DG becomes inoperable during the 14 day action statement, the OPERABILITY of the remaining EDGs does not need to be demonstrated since the AAC DG was designed and purchased according to specifications which adequately ensure that common cause failure is not likely.

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.

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.

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR 50,

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radio nuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

g. Configuration Risk Management Program

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted. The program shall include the following elements:

1) Provisions for the control and implementation of a Level 1, at power, internal events, PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration.

2) Provisions for performing an assessment prior to entering the LCO Action Statement for planned activities.

Configuration Risk Management Program (continued)

3) Provisions for performing an assessment after entering the LCO Action Statement for unplanned entry into the LCO Action Statement.

4) Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action Statement.

5) Provisions for considering other applicable risk significant contributors such as Level 2 issue and external events, qualitatively or quantitatively.

Current risk-informed action statements include: Action 3.8.1.1.b

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Director of the Regional Office of Inspection and Enforcement unless otherwise noted.

STARTUP REPORTS

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (a) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details requested in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

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. 195
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 September 1, 1995, as supplemented April 8, 1996; April 22, 1996; April 23, 1996; November 18, 1997; February 9, 1998; March 25, 1998; May 5, 1998; June 25, 1998, and June 29, 1998, 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. 195 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, the license is amended to add paragraph 2.I. to the Facility Operating License No. NPF-7 as follows:

   2.I. Additional Conditions

   The Additional Conditions contained in Appendix C, as revised through Amendment No. 195 , are hereby incorporated into this license. Virginia Electric and Power Company shall operate the facility in accordance with the Additional Conditions.

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

FOR THE NUCLEAR REGULATORY COMMISSION

H E Edison for

P. T. Kuo, Acting Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachments:
1. Page 13 of License No. NPF-7
2. Appendix C to License No. NPF-7
3. Changes to the Technical Specifications

Date of Issuance: August 26, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 195

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Operating License with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Remove Pages	Insert Pages
13	13
---	Appendix C

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 areas of change. Overleaf page B 3/4 0-1 is included for document completeness.

Remove Pages	Insert Pages
1-3	1-3
3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
3/4 8-2a	3/4 8-2a
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 8-6a	3/4 8-6a
3/4 8-9	3/4 8-9
3/4 8-10	3/4 8-10
B 3/4 0-2	B 3/4 0-2
B 3/4 1-3	B 3/4 1-3
B 3/4 8-1	B 3/4 8-1
B 3/4 8-2	B 3/4 8-2
---	B 3/4 8-3
6-14c	6-14c
6-14d	6-14d

2.E. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "North Anna Power Station Physical Security Plan," with revisions submitted through February 24, 1988; "North Anna Power Station Guard Training and Qualification Plan," with revisions submitted through May 14, 1987; and "North Anna Power Station Safeguards Contingency Plan," with revisions submitted through January 9, 1987. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

2.F. The design of the reactor coolant pump and steam generator supports may be revised in accordance with the licensee's submittal dated November 6, 1986 (Serial No. 86-477A).

2.G. If VEPCO plans to remove or to make significant changes in the normal operation of equipment that controls the amount of radioactivity in effluents from the North Anna Power Station, the NRC shall be notified in writing regardless of whether the change affects the amount of radioactivity in the effluents.

2.H. VEPCO shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(21), E, F and G of this license within 24 hours by telephone and confirmed by telegram, mailgram, or facsimile transmission to the Director of the Regional Office, or his designate, no later than the first working day following the violation, with a written followup report within 14 days.

2.I. Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 195 , are hereby incorporated into this license. Virginia Electric and Power Company shall operate the facility in accordance with the Additional Conditions.

APPENDIX C

ADDITIONAL CONDITION

FACILITY OPERATING LICENSE NO. NPF-7

Amendment Number	Additional Condition:	Implementation Date
195	The licensee shall implement a procedure that will prohibit entry into an extended Emergency Diesel Generator Outage Time (14 days), for scheduled maintenance purposes, if severe weather conditions are expected, as described in the licensee's application dated June 25, 1998, and evaluated in the staff's Safety Evaluation dated August 26, 1998.	Prior to implementation of Amendment No. 195

3/4.8 ELECTRICAL POWER SYSTEMS

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 emergency diesel generators (EDGs):

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. **(Risk-Informed)** With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. 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 is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive 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 EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition:

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

ENGINEERED SAFETY FEATURE RESPONSE TIME

1.12 The ENGINEERED SAFETY FEATURE RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include emergency diesel generator starting and sequence loading delays where applicable.

FREQUENCY NOTATION

1.13 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

FULLY WITHDRAWN

1.13a The control bank FULLY WITHDRAWN position shall be within the interval of 225 to 229 steps withdrawn, inclusive. Definition of the FULLY WITHDRAWN position for each specific cycle shall be documented in the rod insertion limit operator curve.

GASEOUS RADWASTE TREATMENT SYSTEM

1.14 A GASEOUS RADWASTE TREATMENT SYSTEM is the system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment. The system is composed of the waste gas decay tanks, regenerative heat exchanger, waste gas charcoal filters, process vent blowers, waste gas surge tanks and waste gas diaphragm compressor.

IDENTIFIED LEAKAGE

1.15 IDENTIFIED LEAKAGE shall be:

a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or

b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or

c. Reactor coolant system leakage through a steam generator to the secondary system.

MEMBER(S) OF THE PUBLIC

1.16 MEMBER(S) OF THE PUBLIC shall include all individuals who by virtue of their occupational status have no formal association with the plant. This category shall include non-employees of the licensee who are permitted to use portions of the site for recreational, occupational, or other purposes not associated with plant functions. This category shall not include non-employees such as vending machine servicemen or postman who, as part of their formal job function, occasionally enter an area that is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

3/4.8 ELECTRICAL POWER SYSTEMS

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 emergency diesel generators (EDGs):

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. **(Risk-Informed)** With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. 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 is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive 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 EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition:

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

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

1. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement is(are) inoperable at the start of the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.
2. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement become(s) inoperable during the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.

c. With one offsite circuit and one EDG 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 EDG 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 EDG) 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.

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

LIMITING CONDITION FOR OPERATION

ACTION: (Continued):

e. With two of the above required EDGs 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 EDGs 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 EDG, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable EDG.

f. With one underground fuel oil storage tank of 3.8.1.1.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 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically 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 alignment indicating power availability.

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each emergency diesel generator (EDG) shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8.2 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day tank.
2. Verifying the fuel level in the fuel storage tank.
3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
4. Verifying the EDG can start** and gradually accelerate to synchronous speed (900 rpm) with generator voltage and frequency at 4160 ± 420 volts and 60 ± 1.2 Hz. Subsequently, verifying the generator is synchronized, gradually loaded** to an indicated 2500-2600 kw*** and operates for at least 60 minutes.
5. Verifying the EDG is aligned to provide standby power to the associated emergency busses.

b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank obtained as a DRAIN sample in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.

c. At least once per 184 days, the EDG 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 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal.

** 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

The EDG 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 EDG 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. Verifying that, on rejection of a load of greater than or equal to 610 kw, the voltage and frequency are maintained with 4160 ± 420 volts and 60 ± 1.2 Hz.

2. Verifying that the load sequencing timers are OPERABLE with times within the tolerances shown in Table 4.8-1.

3. 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz.

** 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.

4.8.1.1.2 (Continued)

4. Verifying that on an ESF actuation test signal (without loss of offsite power) the EDG starts** on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

5. 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz.

   c) Verifying that all EDG 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.

6. Verifying the EDG operates** for at least 24 hours. During the first 2 hours of this test, the EDG 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 EDG shall be loaded to an indicated 2500-2600 kw***.

7. Verifying that the auto-connected loads to each EDG do not exceed the 2000 hour rating of 3000 kw.

8. Verifying the EDG's capability to:

   a) Synchronize with the offsite power source while the EDG 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.

** 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.

4.8.1.1.2 (Continued)

9. Verifying that the following EDG lockout features prevent EDG starting only when required:
   a) Remote Local Selection Switch
   b) Emergency Stop Switch
10. Verifying the EDG's hot restart capability by:
   a) Operating the EDG** 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 EDG 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 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal.

e. At least once per 10 years or after any modifications which could affect EDG interdependence by starting** both EDGs simultaneously, during shutdown, and verifying that both EDGs accelerate to at least 900 rpm in less than or equal to 10 seconds.

f. At least once per 24 months during any mode of operation, by subjecting each EDG to a preventive maintenance inspection in accordance with maintenance procedures appropriate for diesels used for this class of standby service.

4.8.1.1.3 Each emergency 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 ≥ 129 volts on a float charge.

** 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.

SURVEILLANCE REQUIREMENTS

4.8.1.1.3 (continued)

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 x 10 to the minus 6 ohms.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material.
3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohms.
4. The battery charger will supply at least ten amperes at 125 volts for at least 4 hours.

d. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test.

e. At least once per 18 months, during shutdown, perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.

4.8.1.1.4 For each underground EDG fuel oil storage tank perform the following at least once per 10 years:

1. Drain each fuel oil storage tank
2. Remove sediment from each fuel oil storage tank
3. Inspect each fuel oil storage tank for integrity
4. Clean each fuel oil storage tank

Table 4.8-2

EMERGENCY DIESEL GENERATOR TEST SCHEDULE

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

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* 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 emergency diesel generator basis.

For the purposes of determining 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 emergency 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,
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.

3/4.0 APPLICABILITY

BASES

The specifications of this section provide the general requirements applicable to each of the Limiting Conditions for Operation and Surveillance Requirements within Section 3/4.

3.0.1 This specification defines the applicability of each specification in terms of defined OPERATIONAL MODES or other specified conditions and is provided to delineate specifically when each specification is applicable.

3.0.2 This specification defines those conditions necessary to constitute compliance with the terms of an individual Limiting Condition for Operation and associated ACTION requirement.

3.0.3 This specification delineates the ACTION to be taken for circumstances not directly provided for in the ACTION statements and whose occurrence would violate the intent of the specification. For example, Specification 3.5.1 requires each Reactor Coolant System accumulator to be OPERABLE and provides explicit ACTION requirements if one accumulator is inoperable. Under the terms of Specification 3.0.3, if more than one accumulator is inoperable, the unit is required to be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours. As a further example, Specification 3.6.2.1 requires two Quench Spray Systems to be OPERABLE and provides explicit ACTION requirements if one spray system is inoperable. Under the terms of Specification 3.0.3, if both of the required Quench Spray Systems are inoperable, within one hour measures must be initiated to place the unit in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the following 6 hours, and in at least COLD SHUTDOWN in the next 24 hours.

3.0.4 This specification provides that entry into an OPERATIONAL MODE or other specified applicability condition must be made with (a) the full complement of required systems, equipment or components OPERABLE and (b) all other parameters as specified in the Limiting Conditions for Operation being met without regard for allowable deviations and out-of-service provisions contained in the ACTION statements.

The intent of this provision is to insure that facility operation is not initiated with either required equipment or systems inoperable or other specified limits being exceeded.

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for an out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, shutdown is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system be OPERABLE. The ACTION statement provides a 24-hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power source, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable LCOs. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be

3/4.1.2 BORATION SYSTEMS

The boron injection system ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, 4) boric acid transfer pumps, 5) associated heat tracing systems, and 6) an emergency power supply from OPERABLE emergency diesel generators.

With the RCS average temperature above 200°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide a SHUTDOWN MARGIN from expected operation conditions of 1.77% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 6000 gallons of 12,950 ppm borated water from the boric acid storage tanks or 54,200 gallons of 2300 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

The limitation for a maximum of one charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 270°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

Having more than one charging pump OPERABLE during pump switching operations is allowed. This is acceptable based on pump switching being a momentary action under the direct administrative control of a licensed operator. Rendering a charging pump inoperable for this requirement may be accomplished by methods such as placing the control switch in the pull-to-lock position, tagging of the power supply breaker, or closing of the pump discharge valve. If the pump discharge valve is used to render a pump inoperable during solid water operation, the valve will be deenergized and tagged in the closed position.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1.77% delta k/k after zenon decay and cooldown from 200°F to 140°F. This condition requires either 1378 gallons of 12,950 ppm borated water from the boric acid storage tanks or 3400 gallons of 2300 ppm borated water from the refueling water storage tank.

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.

Entering the 14 day EDG action statement during power operation has been shown to result in a small increase in the core damage frequency, provided the Alternate A.C. diesel generator (AAC DG) is OPERABLE and the opposite unit's EDGs are both OPERABLE. A Configuration Risk Management Program (CRMP) defined in Administrative Control Section 6.8.4.g is implemented to evaluate risk associated with the EDG outage. The EDG and AAC DG annual unavailability is limited by the Maintenance Rule Program.

When one or more of the diesel generators (i.e., AAC DG or opposite unit's EDGs) required to enter the 14 day actions statement is inoperable or becomes inoperable during the fourteen day action statement of the effected EDG, a 72 hour action statement is entered. If the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required to support entry into the fourteen day action statement are restored to OPERABLE status within 72 hours, the remainder of the 14 day action statement can be used. Restoring the affected EDG to service removes the conditional OPERABILITY requirements for the AAC DG and opposite unit's EDGs.

The operability requirements for the AAC DG are specified in the Technical Requirements Manual. In addition, to be considered OPERABLE to support the fourteen day action statement the AAC DG must be capable of providing power to the affected bus (i.e., connectable to the bus with the associated breakers and control power available.) If the AAC DG becomes inoperable

during the 14 day action statement, the OPERABILITY of the remaining EDGs does not need to be demonstrated since the AAC DG was designed and purchased according to specifications which adequately ensure that common cause failure in not likely.

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 Emergency 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.

Containment electrical penetration 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.

6.8.4.e Radioactive Effluent Controls Program (Cont.)

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR 50,

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

f. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radio nuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

g. Configuration Risk Management Program

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted. The program shall include the following elements:

1) Provisions for the control and implementation of a Level 1, at power, internal events, PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration.

2) Provisions for performing an assessment prior to entering the LCO Action Statement for planned activities.

Configuration Risk Management Program (continued)

3) Provisions for performing an assessment after entering the LCO Action Statement for unplanned entry into the LCO Action Statement.

4) Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action Statement.

5) Provisions for considering other applicable risk significant contributors such as Level 2 issue and external events, qualitatively or quantitatively.

Current risk-informed action statements include: Action 3.8.1.1.b

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Director of the Regional Office of Inspection and Enforcement unless otherwise noted.

STARTUP REPORTS

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (a) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NOS. 214 AND 195 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 September 1, 1995, the licensee requested various changes to the plants' Technical Specifications (TS). Specifically, other than editorial-type changes, a major change was proposed which would allow a single outage of up to 14 days once every 18 months, in lieu of the current 72-hour limiting condition of operation (LCO), for each emergency diesel generator (EDG) in order to perform a preventive maintenance inspection requiring disassembly of the EDG during plant operation.

In response to the staff's April 2 and November 13, 1996, requests, the licensee's letters dated April 8, 1996, and November 18, 1997, provided additional information and proposed revisions to the original requested changes, including a change which would allow the 14-day outage whenever an EDG is inoperable for whatever reason under specified conditions. Also, in a February 9, 1998, response to a January 13, 1998, telephone call with the staff, the licensee provided additional information and editorial-type changes to the proposed technical specification revisions.

Further, in a letter dated March 25, 1998, the licensee proposed to change the EDG preventive maintenance inspection frequency to 24 months instead of every 18 months. Also, a Configuration Risk Management Program was proposed to support risk-informed Technical Specifications. In a June 2, 1998, telephone conference call, the staff requested additional information pertaining to the plant's Probabilistic Safety Assessment (PSA), current EDG reliability, and procedural controls for planned entries into the extended EDG outage. The licensee provided the requested information in a June 25, 1998, letter.

The Electrical Engineering Branch (EELB), with support from the Probabilistic Safety Assessment Branch (SPSB), has reviewed the requested changes and finds them acceptable as discussed in the following evaluation.

2.0 BACKGROUND

Each North Anna unit has two separate and redundant safety-related alternating current (ac) electrical trains. Each train consists of a 4160 v switchgear, two 480 v load centers and various 480 v motor control centers and is normally powered from the offsite power systems via one of three separate reserve station service transformers and associated transfer bus. Upon loss of the normal offsite source, each train is powered from its separate EDG. Two additional sources of offsite power are available to specific individual emergency buses in Unit 1 under limited conditions.

In addition, a fifth diesel generator was recently installed to comply with 10 CFR 50.63, the station blackout rule. This alternate ac diesel generator (AAC DG) has a capacity that exceeds the capacity of an EDG. The AAC DG starts automatically following a loss-of-offsite power and can then be manually connected to any one of the four emergency buses by breaker alignment.

3.0 PROPOSED TECHNICAL SPECIFICATION CHANGES

The licensee has proposed the following specific changes to the plants' Technical Specifications:

Change 1: On Page 1-3 under Definition 1.12, add "emergency" before "diesel generator" in the last sentence.

Change 2: On Page 3/4 8-1 under Specification 3.8.1.1.b, add "emergency" before and "(EDGs)" following "diesel generators".

Change 3: On Page 3/4 8-1 under Action b. delete:

> 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 preventive 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.

and substitute:

(Risk-Informed) With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. 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 is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive 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 EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition:

1. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14-day action statement is (are) inoperable at the start of the 14-day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.

2. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14-day action statement become(s) inoperable during the 14-day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours.

Change 4: In Specification 3.8.1.1 under the action statements substitute "EDG" or "EDGs" for "diesel generator" or "diesel generators", respectively, wherever they occur.

Change 5: On Page 3/4 8-3 under Surveillance Requirement 4.8.1.1.2, add "emergency" before and "(EDG)" following "diesel generator."

Change 6: In Surveillance Requirements 4.8.1.1.2.a through e, substitute "EDG" or "EDGs" for "diesel generator" or "diesel generators", respectively, wherever they occur.

Change 7: In Surveillance Requirement 4.8.1.1.2.c, substitute "EDG" for "generator" in the third sentence.

Change 8: Delete Surveillance Requirement 4.8.1.1.2.d.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."

Change 9: Renumber individual surveillance requirements under Surveillance Requirement 4.8.1.1.2.d as a result of Change 8.

Change 10: Under renumbered Surveillance Requirement 4.8.1.1.2.d.3.b and 4.8.1.1.2.d.5.b, substitute "EDG" for "diesel" in their first sentences.

Change 11: Add the following footnote to Page 3/4 8-3b of Unit 1 Technical Specifications:

*** 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.

Change 12: Under renumbered Surveillance Requirement 4.8.1.1.2.d.8.a, substitute "EDG" for "generator".

Change 13: Add the following as new Surveillance Requirement 4.8.1.1.2.f:

At least once per 24 months during any mode of operation, by subjecting each EDG to a preventive maintenance inspection in accordance with maintenance procedures appropriate for diesels used for this class of standby service.

Change 14: Under Surveillance Requirement 4.8.1.1.3, add "emergency" before "diesel generator".

Change 15: In the title and the first sentence of Footnote * of Table 4.8-2, add "emergency" before "diesel generator".

Change 16: In the first sentence of the second paragraph in Footnote * to Table 4.8-2 in Unit 1 Technical Specifications, substitute "overhaul" for "overhal".

Change 17: Under Surveillance Requirement 4.8.1.1.4, substitute "EDG" for "diesel generator".

Change 18: Under Specification 3.8.1.2.b add "emergency" before "diesel generator".

Change 19: On Page B 3/4 0-2 in the third paragraph under 3.0.5, delete "a 72 hour" and substitute "an".

Change 20: In the second sentence of the first paragraph under Bases 3/4.1.2, add "emergency" before "diesel generators".

Change 21: Under Bases 3/4.8.1 and 3/4.8.2 add the following new paragraphs:

Entering the 14-day EDG action statement during power operation has been shown to result in a small increase in the core damage frequency, providing the Alternate A.C. diesel generator (AAC DG) is OPERABLE and the opposite unit's EDGs are both OPERABLE. A Configuration Risk Management Program (CRMP) defined in Administrative Control Section 6.8.4.g is implemented to evaluate risk associated with the EDG outage. The EDG and AAC DG annual unavailability is limited by the Maintenance Rule Program.

When one or more of the diesel generators (i.e., AAC DG or opposite unit's EDGs) required to enter the 14 day action statement is inoperable or becomes inoperable during the fourteen day action statement of the affected EDG, a 72 hour action statement is entered. If the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required to support entry into the fourteen day action statement are restored to OPERABLE status within 72 hours, the remainder of the 14 day action statement can be used. Restoring the affected EDG to service removes the conditional OPERABILITY requirements for the AAC DG and the opposite unit's EDGs.

The operability requirements for the AAC DG are specified in the Technical Requirements Manual (TRM). The TRM is located in the UFSAR and is subject to 10 CFR 50.59. In addition, to be considered OPERABLE to support the fourteen day action statement the AAC DG must be capable of providing power to the affected bus (i.e., connectable to the bus with the associated breakers and control power available). If the AAC DG becomes inoperable during the 14 day action statement, the OPERABILITY of the remaining EDGs does not need to be demonstrated since the AAC DG was designed and purchased according to specifications which adequately ensure that common cause failure is not likely.

Change 22: In Bases 3/4.8.1 and 3/4.8.2 under the paragraph that discusses Regulatory Guide 1.9, substitute "Emergency Diesel Generators" for "diesel generators" in the first sentence.

Change 23: Add the following as new Section 6.8.4.g:

g. Configuration Risk Management Program

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted. The program shall include the following elements:

1) Provisions for the control and implementation of a Level 1, at power, internal events, PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration.

2) Provisions for performing an assessment prior to entering the LCO Action Statement for planned activities.

3) Provisions for performing an assessment after entering the LCO Action Statement for unplanned entry into the LCO Action Statement.

4) Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action Statement.

5) Provisions for considering other applicable risk significant contributors such as Level 2 issue and external events, qualitatively or quantitatively.

Current risk-informed action statement include: Action 3.8.1.1.b.

4.0 EVALUATION

All the above changes except Changes 3, 8, 13, 21 and 23 are editorial and correct previous typographical errors, change terminology, result from new page spacing or specification renumbering due to added material related to other proposed changes, or are necessary to support the other proposed changes. On that basis they are therefore acceptable.

The staff evaluated the licensee's proposed Changes 3, 8, 13, 21 and 23 using both deterministic analysis and probabilistic risk analysis (PRA) methods as documented below.

CHANGE 3:

Change 3 includes some minor editorial changes and also is the major change which allows an EDG to be inoperable for up to 14 days in any mode of plant operation. Currently, the Technical Specifications allow an outage of 72 hours for one inoperable EDG.

The ac electrical power for essential and nonessential service in a nuclear power plant is supplied primarily by offsite power. Redundant onsite emergency ac power systems are also provided in the event that all offsite power sources are lost. These systems provide power for the various safety functions, including reactor core decay heat removal and containment heat removal, which are essential for preserving the integrity of the reactor core and containment building, respectively. The reactor core decay heat can also be removed for a limited period of time by safety systems that are independent of ac power.

In evaluating the licensee's request to extend the allowed out-of-service time (AOT) for onsite emergency ac power sources, the staff reviewed the request to determine if the decrease in severe accident risk achieved with the issuance of 10 CFR 50.63 (Station Blackout Rule) is not being eroded. The staff also evaluated the request to ensure that the overall availability of the onsite ac power systems will not be reduced significantly as a result of increased online preventive maintenance activities. In order to determine that the decrease in severe accident risk achieved with the issuance of 10 CFR 50.63 is not eroded, the staff used review guidelines identified below to evaluate the proposal to extend the AOTs for onsite emergency power sources. These guidelines are based on engineering judgment and it is the staff's view that conformance with these guidelines will ensure that a licensee is not significantly increasing the likelihood of a station blackout (SBO) event and the risk of a core damage accident by performing increased maintenance on the EDGs during power operations. The reasoning implicit in the review guidelines is that if the licensee has an excess and diverse power source available to cope with a loss of offsite power event (e.g., AAC DG with adequate capacity) and this power source can be temporarily used to compensate for an onsite emergency power source that is out-of-service without significantly increasing the likelihood of an SBO event, then under certain controlled conditions it is acceptable to extend the AOT and to perform increased online maintenance intended to improve the overall reliability of the onsite emergency power systems.

The staff formally communicated to the licensee the review guidelines for the EDG AOT extension in a request for additional information dated April 2, 1996. The licensee's responses were provided in a letter dated April 8, 1996, and are summarized (and updated for subsequent revisions to the requested changes) for each guideline/question as follows:

1. Provide the current calculated total core damage frequency (CDF) resulting from all PSA[1] sequences involving SBO. Also provide the calculated total CDF from all SBO sequences after accounting for the increase in EDG unavailability due to the extended allowed outage time requested. Provide the instantaneous change in the CDF value for the worst-case plant configuration allowed under the proposed Specification 3.8.1.1.b.2.

   The licensee stated that the SBO contribution to the CDF for North Anna Unit 1 was calculated to be 1.2E-5 per year without the AAC DG credited. The calculated CDF for SBO sequences was reduced to 5.9E-6 per year with the addition of the AAC DG. This would be increased slightly to 6.5E-6 per year when accounting for the increased EDG unavailability due to the extended AOT requested.

   The licensee performed sensitivity studies to estimate the configuration risk assuming different EDGs were inoperable for the extended outage time. The instantaneous change in CDF for the worst-case plant configuration allowed during the maintenance was calculated to be 1.5E-5 per year when one EDG is inoperable and 1.4E-4 per year when one EDG and the AAC DG are both inoperable.

   Based on these determinations performed by the licensee, the staff finds that the increase in CDF is small and that the overall SBO risk for the plant will remain small even with the added EDG unavailability due to the extended AOT requested.

2. Provide the values for the EDG reliability and availability used in the PSA analysis to calculate the SBO CDF values requested in Question 1 above. Discuss these values in relationship to any goals associated with the implementation of the maintenance rule and in comparison to actual past performance of the EDGs at the plant. Also compare the values used in the PSA analysis to the target values committed to for SBO.

   The licensee stated that SBO base cases utilized an EDG test and maintenance unavailability of 4.1 days per year. This was increased to 13.4 days per year to account for the EDG extended AOT. These then correspond to EDG availability of 0.989 and 0.963 for the base case and the extended outage case. The licensee also stated that an AAC DG maintenance unavailability of 17.3 days per year was utilized in the calculations. This corresponds to an AAC DG availability of 0.953.

   The licensee's maintenance rule program unavailability performance criterion for the EDGs and AAC DG is set based on a combination of maintenance unavailability used in current PSA analyses and anticipated online maintenance requirements. The

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[1]In this Safety Evaluation, probabilistic safety assessment (PSA) and probabilistic risk assessment (PRA) are understood to have the same meaning.

licensee's current maintenance rule goal is 0.984 for the plant's EDGs and AAC DG. Actual EDG and AAC DG performance during 1995 resulted in an availability of 0.995.

The EDG reliability assumed in the PSA calculations was 0.986 corresponding to a failure-to-start probability of 1.43E-2. The AAC DG reliability utilized was 0.976 corresponding to a failure-to-start probability of 2.41E-2. The current maintenance rule reliability goal for all diesels is 0.990. The plant's SBO commitment for diesel reliability is 0.95. The 1995 diesel reliability was 1.000 since there have been no failures in the past 100 start attempts.

Based on the above, the staff finds that the reliability values used in the PSA analyses are higher than the SBO commitment but slightly lower than the current maintenance rule target. Also the unavailability used for the base case is slightly higher than the maintenance rule goal while the unavailability used for the PSA calculations for the extended outage case is below the maintenance rule goal. The licensee will need to monitor the actual EDG and AAC DG reliability/availability to periodically evaluate the effect of the extended outage upon plant performance in relationship to the maintenance goals and SBO target values.

3. The proposed 14-day AOT requires that the AAC DG be operable. Bases 3/4.8.1 and 3/4.8.2 state that operability of the AAC DG is defined in administratively controlled station documents. Discuss how the AAC DG is verified to be operable including verification that it can be connected to the safety bus associated with the EDG undergoing the extended maintenance.

   The licensee stated that the AAC DG operability requirements will be located in the North Anna Power Station Technical Requirements Manual. Operability testing for the AAC DG will verify that:

   - Its support systems are operable.
   - The AAC DG can start and accelerate to 60±1.2 Hz and 4300±100 volts.
   - The AAC DG can be synchronized and loaded onto the applicable safety bus to an indicated 3250-3350 kW and can be operated for at least 4 hours.

   The licensee further stated that the operability testing associated with the extended EDG allowed outage time would include verification of the ability to connect the AAC DG to the applicable safety bus (via manual breaker alignments) once per shift.

   In a November 13, 1996, request for additional information, the staff discussed a concern about the availability of the AAC source if its battery charger is not connected to an EDG powered bus during a loss-of-offsite power. In a November 18, 1997,

response, the licensee stated that the battery charger is normally powered from an offsite source, is not powered from an EDG when offsite power is lost, but is powered from the AAC source itself when it is running and connected to its bus. This response prompted the staff to express, in a January 13, 1998, telephone call, further concern about the availability of the AAC source and its support equipment and to request the licensee to review the plants' SBO design in relationship to Information Notice 97-21, "Availability of the Alternate AC Power Source Designed for Station Blackout Event," dated April 18, 1997. In a followup telephone call on March 3, 1998, the licensee stated that the AAC DG would be automatically started on a loss-of-offsite power and would energize its own support loads and thus be available for a subsequent SBO event. Based on this information, the staff considered their concern resolved.

4. Additional vulnerability may be created during the extended outage time for an EDG. Discuss how systems, subsystems, trains, components, and devices that depend on the remaining EDG as a source of onsite power are verified to be operable before removing an EDG for extended maintenance. Discuss what positive measures will be taken to preclude subsequent testing or maintenance activities on these systems, subsystems, trains, components, and devices while an EDG is inoperable. This discussion should include consideration of degraded or inoperable balance-of-plant equipment.

   The licensee's response stated that the plant's safety philosophy does not permit maintenance to be planned or performed concurrently on multiple risk-significant equipment unless the risk is shown to be acceptable for the outage duration. The status of all systems, subsystems, trains, components, and devices that may affect equipment operability is tracked on a computer network. Before maintenance is performed, it is verified that the proposed configuration is not prohibited by the Technical Specifications. Currently, the plant has administrative procedures that address control of maintenance and testing of risk-significant equipment while the unit is online utilizing operating judgment and PSA insight.

   The licensee also stated that Technical Specification 3.0.5 limits the configuration risk when an EDG is undergoing the extended maintenance by requiring all equipment powered from the emergency bus associated with the inoperable EDG to be treated as inoperable if the redundant train of safety-related equipment becomes inoperable. Under those conditions Technical Specification 3.0.5 requires that the unit cease power operation within 6 hours which minimizes the time that the plant is in any potentially high risk configuration.

   In addition, the licensee proposed, in a March 25, 1998, letter, a Configuration Risk Management Program to support risk-informed Technical Specifications (see Change 23 evaluation below).

5. The original intent of the extended AOT was for conducting an extended preventive maintenance on the EDGs. The condition of offsite sources of electrical power prior to and during the extended EDG outage time has additional importance. Discuss what considerations should be given to not performing the extended maintenance when the offsite grid condition or configuration is degraded or when adverse/extreme weather conditions (e.g., high winds, lightning, icing conditions) are expected. Discuss how planning of the extended EDG maintenance should consider the time needed to complete the extended EDG maintenance and the ability to accurately forecast weather conditions that are expected to occur during the maintenance. Discuss what, if any, contingency plans should be developed to restore the inoperable EDG in the event of unanticipated adverse weather or degraded grid conditions occurring which can significantly increase the probability of losing offsite electrical power.

   The licensee stated that the plant's philosophy does not allow maintenance to be planned or performed on risk-significant equipment when the offsite grid condition or configuration is degraded or when adverse weather conditions are expected. Currently, maintenance activities on risk-significant equipment are prevented by administrative controls during periods of electrical system instabilities. These controls also address possible complications due to weather or other external events that may affect electrical system or plant operational stability.

   Specifically, the staff notes that Administrative Procedure VPAP-2001, "Station Planning and Scheduling," requires that "If...the risk of loss of off-site power is significantly increased due to ... environmental activity, those systems used to mitigate a loss of off-site power...should be maintained or returned to an available status as soon as practical." This requirement precludes AOT entry during severe weather.

   In addition to the above controls for equipment maintenance and testing, additional procedural controls are being established. A license condition (Appendix C), will require the licensee to implement a procedure, prior to use of the EDG AOT, that will prohibit entry into an extended EDG AOT (14 days) for scheduled maintenance purposes if severe weather conditions are expected. That procedure, as described in the licensee's supplemental application dated June 25, 1998, will require:

   - that the extended weather forecast is reviewed to verify that severe weather is not predicted during the planned allowed outage time, and

   - prohibit entry into the extended (14-day) AOT for the EDG if severe weather conditions are predicted onsite during the duration of the AOT.

   To aid the procedural controls, the plant has computer link access to the licensee's meteorological department for real time display in the control room of local and national weather conditions and forecasts from the National Weather Service and any

severe weather warnings are relayed directly to the plant. Tropical storms or hurricanes are also tracked.

For long-term developing adverse weather conditions that could affect stable operation, actions will be taken to restore the EDG undergoing extended maintenance to operable status as soon as practicable. For rapidly developing adverse weather conditions, such as a severe thunderstorm, tornado watch, or high wind/tornado warnings, abnormal operating procedures are available to direct compensatory actions to minimize the impact of such adverse conditions.

In addition to the above deterministic analysis to evaluate Change 3, the staff also used a three-tiered PRA-based approach; as discussed in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decision making: Technical Specifications;" to evaluate the risk associated with the proposed license amendment. The first tier evaluated the PRA model and the impact of the change on plant operational risk. The second tier addressed the need to preclude potentially high-risk configurations, should additional equipment outages occur during the AOT period. The third tier evaluated the licensee's CRMP to ensure that equipment removed from service prior to entering or during the proposed AOT will be appropriately assessed from a risk perspective.

Tier 1: PRA Evaluation of AOT Extensions

The licensee used traditional PRA methodology to evaluate the requested AOT extension for EDGs. The Tier 1 NRC staff review of the licensee's PRA involved two aspects: (I) evaluation of the PRA model and application to the proposed AOT extension, and (ii) evaluation of PRA results and insights stemming from the application. The review did not warrant an assessment of any unconventional PRA practices or unique features that could significantly impact the PRA findings and conclusions.

(I) Evaluation of PRA Model and Application to the AOT Extension

The licensee's PRA models were initially developed in response to a request for the licensee-performed Individual Plant Examination (IPE) in Generic Letter 88-20. The licensee performed a detailed peer review in support of this work. The peer review used outside contractors and station personnel to review the IPE results. Both the Level I and Level II models were reviewed. Later, the licensee performed an additional PRA quality review as part of the Surry risk-informed In Service Testing (IST) pilot project. For this review, the Surry PRA model attributes were compared against the requirements presented in Appendix C of the PRA Applications Guide prepared by the Electric Power Research Institute (EPRI). The most recent external review was performed by the expert panel during the development of the maintenance rule program.

Routine PRA quality is ensured using the same processes established to comply with 10 CFR 50, Appendix C. The licensee's Nuclear Design Control Program (NDCP) is designed to maintain quality work processes and to ensure that the requirements of Appendix C are met. PRA calculations and evaluations are performed in accordance with the NDCP similar to other engineering work.

A focused staff audit of PRA accident sequences and cut sets did not indicate any irregularities. The staff's audit did not indicate any aspects of the accident initiation and progression analysis that would alter the licensee's CDF or large early release frequency calculation results.

For the AOT extension, the staff's review focused on the capability of the licensee's PRA model to analyze the risk stemming from the proposed AOT changes for EDGs and did not involve an in-depth review of the licensee's PRA. This review was based on the staff's initial screening process where the staff examined the licensee's internal events PRA results; recent operational experience regarding loss-of-offsite power (LOOP) and EDG reliability and availability; and plant-specific features such as EDG configurations, offsite sources, and other systems critical to mitigation of a LOOP power event. The staff concludes that the licensee's PRA results are reasonable, and the scope and depth of the PRA analysis support such a finding. Recent data for EDG and offsite ac power reliability and availability did not indicate any adverse trends. The EDGs and AAC DG are each fully capable of safely shutting down the plant given a LOOP.

The licensee's PRA includes both a Level 1 and modified Level 2 analysis and makes extensive use of the PRA performed for Surry (similar in design to North Anna). North Anna Units 1 and 2 used a Level 1 PRA for front-end analysis. A small event tree/large fault tree technique with fault tree linking was used with quantification performed with the NUPRA computer code. The analysis modeled 17 initiating events and dependencies that exist between initiating events and the associated mitigating systems. These initiators are consistent with those identified in previous PRAs. The licensee used both generic and plant-specific data. Generic data sources and plant-specific data were incorporated into the model by updating generic data using Bayesian techniques. The licensee plans regular updates of the PRA which would include the use of an updated database and changes to fault tree models reflecting modifications made since the original PRA.

Since the common cause failure (CCF) of EDGs is potentially a dominant contributor to the plant SBO risk, the staff examined the licensee's CCF analysis. Essentially, industry experience and plant-specific data are analyzed to create a failure database, with the industry events re-interpreted (mapping down) to the target plant (North Anna). The results of the data analysis are then applied with the Basic Parameter Model of NUREG/CR-4780, "Procedures for Treating Common Cause Failures in Safety and

Reliability Studies." The final North Anna IPE EDG CCF model includes six dual CCF basic events (e.g., EDGs 1H and 1J), four triple CCF events (e.g., EDGs 1H, 1J and 2H) and one quadruple CCF basic event (EDG's 1H, 1J, 2H and 2J).

The North Anna Power Station EDG CCF model has been conservatively simplified to include two dual CCF basic events (EDGs 1H and 1J, and EDGs 2H and 2J) and one CCF basic event subsuming the remaining four dual, four triple and one quadruple CCF basic events. The two dual CCF basic events maintain their original quantification from the IPE NUREG/CR-4780 approach. The final CCF conservatively combines the remaining CCF fault exposures through a simple summation of the fault probabilities. The staff finds this acceptable.

(ii) Evaluation of PRA Results and Insights

The staff estimates that, with the licensee-furnished annual average CDF associated with the proposed 14-day AOT of 3.56E-05/yr., an approximate Δ CDF is 6E-07/yr. which is within the guidelines in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Basis."

The baseline large early release frequency (LERF) calculated by the licensee is 4.66E-06/yr., and that for the proposed 14-day AOT is 4.68E-06/yr. The Δ LERF of 2E-08/yr. is also within the above guidelines in RG 1.177.

The incremental conditional core damage probability (ICCDP) calculated by the staff, from licensee-furnished information, is 5.9E-07, which is very close to the staff guideline value of 5E-07.

The licensee has also demonstrated that, with a slightly higher peak, the probability density function of the CDF for a 14-day AOT is essentially coincident with that for a 3-day AOT. The incremental conditional large early release probability was calculated to be 8.6E-09, also within that published (5E-08) in approved RG 1.177.

Based on the preceding Tier 1 review and the related information presented, the staff concludes that the PRA model used for the proposed AOT extension for a single inoperable EDG is considered to be reasonable, and the risk impact of the change is small and supports the AOT extension.

Tier 2: Avoidance of Risk-Significant Plant Configurations

As required by license condition (Appendix C), the licensee will implement a procedure that will prohibit entry into an extended EDG AOT (14 days) for scheduled maintenance

purposes if severe weather conditions are expected as described in the licensee's supplemental application dated June 25, 1998.

The licensee has also proposed TS Action b. under 3.8.1.1 as a limiting condition for operation should one or more of the other three diesel generators become inoperable at the start of or during the extended EDG AOT.

The staff has concluded that these restrictions are necessary to preclude high-risk situations associated with having one EDG inoperable for greater than 72 hours.

Tier 3: Risk-Informed Plant Configuration Management

The licensee has provided reasonable assurance that risk-significant plant equipment outage configurations will not occur while the plant is subjected to the extended EDG AOT. The licensee utilizes its online maintenance configuration matrix to provide planning and scheduling strategies to maximize equipment performance, reliability, and availability during the proposed EDG extended AOT. This process will be incorporated as part of the proposed CRMP.

The Configuration Matrix may be used as a tool for risk-informed maintenance during operating modes 1 and 2. The risk information is only based on the functional equipment groups (FEGs) included in each configuration plus one additional FEG being unavailable. It is assumed that all other risk-significant FEGs are operable. It is recommended that defense-in-depth be maintained for all low-risk-significant FEGs which can be used to mitigate core damage or offsite release. Defense-in-depth means that no more than one in a redundant series or equipment is removed from service (i.e., one out of four channels, or one out of three trains).

The risk recommended allowed outage time for each configuration is intended only as a means to understand the relative instantaneous risk level during the maintenance configuration. Currently, cumulative maintenance risk is limited to an acceptable level by conformance to the Maintenance Rule unavailability performance criteria.

A configuration is a group of FEGs which are simultaneously out-of-service. When possible, each configuration is generalized to represent multiple possible combinations of similar FEGs. For example, a configuration may be "one CC heat exchanger, ½-CC-E-1A/B, and one charging pump, ½-CH-P-1A/B/C." This means that any one of four CC heat exchangers is unavailable simultaneously with any one of six charging pumps. A conservative bounding risk analysis was actually performed utilizing the combination of any CC heat exchanger with any charging pump which will provide the worst-case risk.

Based on the three-tiered approach, the staff finds the following:

- The proposed EDG AOT modifications have only a minimal quantitative impact on plant risk. The calculated ICCDP for a single EDG AOT is small, primarily because of the redundancy in EDG configuration and the availability of the AAC DG.

- The licensee is required by license condition to implement a procedure that will prohibit entry into an extended EDG AOT for scheduled maintenance purposes if severe weather conditions are expected. The licensee also will have several compensatory measures and normal plant practices that help avoid potentially high-risk configurations during the proposed extended EDG AOT.

- The licensee has proposed a risk-informed plant CRMP (see Change 23 evaluation) to assess the risk associated with the removal of equipment from service during the extended EDG AOT. The program provides the necessary assurances that appropriate assessments of plant risk configurations using the maintenance configuration matrix, augmented by appropriate engineering judgment, are sufficient to support the proposed AOT extension request for EDGs.

On the basis of the information presented above, the staff finds Change 3 acceptable.

CHANGES 8 AND 13:

Change 8 is necessary because that surveillance requirement is being replaced by new Surveillance Requirement 4.8.1.1.2.f which is encompassed by Change 13 that allows the EDG extensive preventive maintenance to be performed at least once every 24 months in any mode of plant operation. This is in lieu of the current requirement that this maintenance be performed once every 18 months during shutdown. Change 8 and Change 13 are also related to Change 3 in that the new 14-day AOT in any mode of plant operation is long enough for performance of the extensive EDG maintenance such that performance during shutdown is no longer required. The added risk was evaluated in the PRA assessment for Change 3 and is acceptable on the same basis presented under Change 3. Additionally, allowing the EDG extensive preventive maintenance to be performed at least once in 24 months in lieu of once every 18 months has been endorsed by the EDG manufacturer, reduces EDG unavailability, and is acceptable on that basis.

CHANGE 21:

The new paragraphs for the Bases under Change 21 provide a discussion of the conditions associated with the new 14-day outage for preventive maintenance of an EDG which supports the proposed changes to the Technical Specifications. The discussion provides a level of detail that is similar to other existing Bases discussions and is therefore considered acceptable.

CHANGE 23:

Change 23 encompasses a new Configuration Risk Management Program which is intended to proceduralize risk-informed assessment to manage the risk associated with equipment inoperability. The program includes five elements and applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted.

The CRMP is acceptable in that the program provides the necessary assurances that appropriate assessments of plant risk configurations using the equipment-out-of-service (EOOS) software (augmented by appropriate engineering judgment) are sufficient to support the proposed AOT extension request for EDGs.

In addition, the CRMP is used to assess changes in core damage frequency resulting from applicable plant configurations. The CRMP uses the maintenance configuration matrix, a tool that may be used to aid in the risk assessment of online maintenance and to evaluate the change in risk from a component failure. The equipment out-of-service risk monitor uses the plant probabilistic risk assessment model to evaluate the risk of removing equipment from service based on current plant configuration and equipment condition. The CRMP is used when an EDG is intentionally taken out of service for a planned activity, excluding short duration activities (e.g., performing an air roll on the EDG prior to a routine surveillance). In addition, the CRMP is used for unplanned maintenance or repairs of an EDG.

The licensee has committed to implementation of the CRMP which includes the following key elements:

Key Element 1. Implementation of CRMP

The intent of the CRMP is to implement (a)(3) of the Maintenance Rule (10 CFR 50.65) with respect to online maintenance for risk-informed technical specifications, with the following additions and clarifications:

a. The scope of the structures, systems and components (SSCs) to be included in the CRMP will be those SSCs modeled in the licensee's plant PRA in addition to those SSCs considered risk-significant in accordance with the North Anna Maintenance Rule Program that are not modeled in the PRA.

b. The CRMP is PRA-informed and may be in the form of either a risk matrix, an online assessment, or a direct PRA assessment.

c. CRMP will be invoked as follows for:

- Risk-Informed Inoperability: A risk assessment will be performed prior to entering the LCO for preplanned activities. For unplanned entry into the LCO, a risk assessment will be performed in accordance with plant procedures utilizing the maintenance configuration matrix augmented by appropriate engineering judgment.

- Additional SSC Inoperability and/or Loss of Functionality: When in the risk-informed Completion Time, if an additional SSC within the scope of the CRMP becomes inoperable/non-functional, a risk assessment shall be performed in accordance with plant procedures.

d. Tier 2 commitments apply for planned maintenance only, but will be evaluated as part of the Tier 3 assessment for unplanned occurrences.

Key Element 2. Control and Use of the CRMP

a. Plant modifications and procedure changes will be monitored, assessed, and dispositioned as part of the normal PRA update process:

- Evaluation of changes in plant configuration or PRA model features can be dispositioned by implementing PRA model changes or by the qualitative assessment of the impact of the changes on the CRMP. This qualitative assessment recognizes that changes to the PRA take time to implement and that changes can be effectively compensated for without compromising the ability to make sound engineering judgments.

- Limitations of the CRMP are identified and understood for each specific Completion Time extension.

b. Procedures exist for the control and application of CRMP, including description of the process when outside the scope of the CRMP.

Key Element 3. Level 1 Risk-Informed Assessment

The CRMP is based on a Level 1, at power, internal events PRA model. The CRMP assessment may use any combination of quantitative and qualitative input. Quantitative assessments can include reference to a risk matrix, pre-existing calculations, or new PRA analyses.

a. Quantitative assessments should be performed whenever necessary for sound decision making.

b. When quantitative assessments are not necessary for sound decision making or are beyond the scope of the PRA model, qualitative assessments will be performed. Qualitative assessments will consider applicable, existing insights from quantitative assessments previously performed.

Key Element 4. Level 2 Issues/External Events

External events and Level 2 issues are treated qualitatively and/or quantitatively.

On the basis of the information presented above, the staff finds Change 23 acceptable.

COMMITMENT NECESSARY TO SUPPORT ACCEPTABLE FINDING

As noted above, the licensee stated that the AAC DG operability requirements will be located in the North Anna Power Station Technical Requirements Manual. Those requirements will encompass operability testing for the AAC DG associated with the extended EDG allowed outage time including the verification of the ability to connect the AAC DG to the applicable safety bus (via manual breaker alignments) once per shift. The staff finds the licensee's commitment for operabilty testing (including connectability) of the AAC DG prior to entry into the proposed 14-day AOT necessary to support an acceptable finding for the extended AOT in that it ensures the availability of the AAC DG. Future change to this commitment contained in the plants' Technical Requirements Manual is covered by 10 CFR 50.59, "Changes, Tests and Experiments." Also, the staff's acceptance of the 14-day AOT requires a condition to be added to the license prohibiting entry into the extended AOT if severe weather is expected.

5.0 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.

6.0 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 change 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 effluent 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding (63 FR 33110, which superseded an earlier finding, 60 FR 49949). 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 the amendments.

7.0 CONCLUSION

Based on the preceding discussions, the staff finds that the proposed changes to the TS to increase the EDG AOT during power operation from 72 hours to 14 days for any reason, once every 24 months, are acceptable to the staff assuming adequate compensatory measures are in place. The compensatory measures include requirements that the other EDGs, off-site power supply, and the AAC DG be operable and the licensee implements a procedure that will prohibit entry into an extended EDG Outage Time of 14 days, for scheduled maintenance purposes, if severe weather conditions are expected, The average CDF associated with the proposed change has been estimated to be 3.56E-05 per year or an increase of approximately 6E-07 per year and is within the guidelines in RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Basis."

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.

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