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

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159
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 November 7, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 159 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 12, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 159

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

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

| Remove Pages | Insert Pages |
|---|---|
| 3/4 7-17 | 3/4 7-17 |
| - - | 3/4 7-17a |
| 3/4 7-18* | 3/4 7-18* |
| B 3/4 7-4 | B 3/4 7-4 |

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

## 3/4.7.3 COMPONENT COOLING WATER SYSTEM

### 3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM - OPERATING

LIMITING CONDITION FOR OPERATION

3.7.3.1 Three component cooling water subsystems (shared with Unit 2) shall be OPERABLE* with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,
b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

SURVEILLANCE REQUIREMENTS

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.2 COMPONENT COOLING WATER SUBSYSTEM - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.7.3.2 Two component cooling water subsystems (shared with Unit 2) shall be OPERABLE* with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,
b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Both Units in MODES 5 or 6.

ACTION: With one required component cooling water subsystem inoperable, immediately suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.7.3.2 At least two component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

* For the purposes of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

## 3/4.7.4 SERVICE WATER SYSTEM

### 3/4.7.4.1 SERVICE WATER SYSTEM - OPERATING

LIMITING CONDITION FOR OPERATION

3.7.4.1 Two service water loops (shared with Unit 2) shall be OPERABLE with each loop consisting of:

a. Two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, and

b. An OPERABLE flow path capable of providing cooling for OPERABLE plant components and transferring heat to the service water reservoir.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one service water pump inoperable, within 72 hours throttle component cooling water heat exchanger flows, in accordance with approved operating procedures, to ensure the remaining service water pumps are capable of providing adequate flow to the recirculation spray heat exchangers.

b. With two service water pumps inoperable, perform ACTION 3.7.4.1.a within 1 hour and restore at least one service water pump to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours.

c. With one service water loop inoperable, except as provided in ACTION 3.7.4.1.a, restore the inoperable loop to OPERABLE status within 72 hours or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. The allowable time that one of the two service water loops can be inoperable as specified in ACTION 3.7.4.1.c may be extended beyond 72 hours up to 168 hours as part of service water system upgrades* provided 3 out of 4 service water pumps (the third pump does not require auto start capability) and 2 out of 2 auxiliary service water pumps have been OPERABLE since initial entry into the action statement and remain OPERABLE during the extended action statement or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Isolation of one service water loop for up to 168 hours is permitted only as part of service water system upgrades. System upgrades include modification and maintenance activities associated with the installation of new discharge headers and spray arrays, mechanical and chemical cleaning of service water piping and valves, pipe repair and replacement, valve repair and replacement, installation of corrosion mitigation measures and inspections of and repairs to buried piping interior coatings and pump or valve house components.

available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

3/4.7.1.3 EMERGENCY CONDENSATE STORAGE TANK

The OPERABILITY of the emergency condensate storage tank with the minimum water volume ensures that sufficient water is available to maintain the RCS at HOT STANDBY conditions for 8 hours with steam discharge to the atmosphere concurrent with total loss of off-site power. The contained water volume limit includes an allowance for water not usuable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the accident analyses.

3/4.7.1.5 MAIN STEAM TRIP VALVES

The OPERABILITY of the main steam trip valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam trip valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

3/4.7.1.6 and 3/4.7.1.7 STEAM TURBINE and OVERSPEED PROTECTION

The turbine generator at the North Anna facility is arranged in a nonpeninsular orientation. Analysis has shown that this arrangement is such that, if a turbine failure occurs as a result of destructive overspeed, potentially damaging missles could impact the auxiliary building, containment, control room and other structures housing safety related equipment. The requirements of these two specifications provide additional assurance that the facility will not be operated with degraded valve performance and/or flawed turbine material which are the major contributors to turbine failures.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on average steam generator impact values at 10°F and are sufficient to prevent brittle fracture.

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM - OPERATING

The component cooling water system normally operates continuously to remove heat from various plant components and to transfer the heat to the service water system. The system consists of four subsystems shared between units, with each subsystem containing one pump and one heat exchanger.

The current design basis for the component cooling water system is a fast cooldown of one unit while maintaining normal loads on the other unit. Three component cooling water subsystems need to be OPERABLE to accomplish this function. The fourth subsystem is a spare and may be out of service indefinitely. With only two component cooling water subsystems a slow cooldown on one unit while maintaining normal loads on the opposite unit can be accomplished.

The component cooling water system is designed to reduce the temperature of the reactor coolant system from 350°F to 140°F within 16 hours during plant cooldown, based on a service water temperature of 95°F and on having two component cooling water pumps and two heat exchangers in service for the unit being cooled down. Therefore, to ensure cooldown of one unit within 16 hours and maintain the other unit in normal full power operation three of the four subsystems must be OPERABLE.

Because subsystems are placed in standby by shutting down pumps and isolating heat exchangers and this system serves no accident mitigation functions, the subsystem is considered OPERABLE in the standby conditions since it can be easily placed in service quickly by manual operator actions.

3/4.7.3.2 COMPONENT COOLING WATER SUBSYSTEM - SHUTDOWN

The OPERABILITY of the component cooling water system when both units are in COLD SHUTDOWN or REFUELING ensures that an adequate heat sink is maintained for the residual heat removal system.