



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. 194  
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 March 30, 1995 as supplemented by letter dated August 24, 1995, 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. 194, 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

*Barclay C. Buckley for*

David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 11, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 194

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.

Remove Pages

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Insert Pages

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## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

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

#### LIMITING CONDITION FOR OPERATION

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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.

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\* 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.

\*\* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs), the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 49 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 49-day period, this footnote will no longer be applicable.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

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

### SURVEILLANCE REQUIREMENTS

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- 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.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

#### 3/4.7.3.2 COMPONENT COOLING WATER SUBSYSTEM - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

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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

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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.

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\* 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.



## PLANT SYSTEMS

### 3/4.7.4 SERVICE WATER SYSTEM

#### 3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

##### LIMITING CONDITION FOR OPERATION

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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. The provisions of Specification 3.0.4 are not applicable once component cooling heat exchanger flows are throttled.
- 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 6 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.

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\* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs), one of the two service water (SW) loops is permitted to temporarily bypass the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 49 days each. During each period of operation with only one SW loop available to/from the CCHXs, four out of four SW pumps (excluding the auxiliary SW pumps) shall remain OPERABLE. With one SW pump inoperable, work may continue provided actions are taken to either restore the pump to OPERABLE status within 72 hours or restore both SW headers to/from the CCHXs 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. During each period of operation with only one SW loop available to/from the CCHXs, the automatic closure feature of the SW valves servicing the CCHXs shall be defeated to ensure SW flow to the CCHXs is not interrupted. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable, provided two SW loops are capable of providing cooling for the other OPERABLE plant components. Upon completion of the work associated with the second 49-day period, this footnote will no longer be applicable.

## PLANT SYSTEMS

### 3/4.7.4 SERVICE WATER SYSTEM

#### 3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

##### LIMITING CONDITION FOR OPERATION

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- 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 pumps 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.
- e. With two service water loops inoperable for reasons other than described in ACTION 3.7.4.1.b, place both units in HOT SHUTDOWN within 12 hours and within the following hour, initiate actions to place both units in COLD SHUTDOWN and continue actions until both units are in COLD SHUTDOWN.

##### SURVEILLANCE REQUIREMENTS

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- 4.7.4.1 At least two service water loops shall be demonstrated OPERABLE:
- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
  - b. At least once per 6 months by measurement of the movement of the pumphouse and wing walls.
  - c. At least once per 18 months during shutdown, by:
    - 1. Verifying that each automatic valve servicing safety related equipment actuates to its correct position on an actual or simulated safety injection signal.
    - 2. Verifying that each automatic service water valve actuates to its correct position on an actual or simulated containment high-high signal.
  - d. Each service water pump will be tested in accordance with Specification 4.0.5.

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\* 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 inspection of and repairs to buried piping interior coatings and pump or valve house components.





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. 175  
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 March 30, 1995, as supplemented by letter dated August 24, 1995, 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. 175, 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

*Barth C. Buckley for*

David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 11, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 175

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

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

Remove Pages

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3/4 7-14a

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3/4 7-15

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Insert Pages

3/4 7-14

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3/4 7-14b

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3/4 7-15a

## PLANT SYSTEMS

### 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

#### LIMITING CONDITION FOR OPERATION

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3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be greater than 70°F when the pressure of either coolant in the steam generator is greater than 200 psig.

APPLICABILITY: At all times.

#### ACTION:

With the requirements of the above specification not satisfied:

- a. Reduce the steam generator pressure of the applicable side to less than or equal to 200 psig within 30 minutes, and
- b. Perform an engineering evaluation to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

#### SURVEILLANCE REQUIREMENTS

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4.7.2.1 The pressure in each side of the steam generator shall be determined to be less than 200 psig at least once per hour when the temperature of either the primary or secondary coolant is less than 70°F.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

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

#### LIMITING CONDITION FOR OPERATION

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3.7.3.1 Three component cooling water subsystems (shared with Unit 1) 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.

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\* 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.

\*\* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs), the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 49 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 49-day period, this footnote will no longer be applicable.



PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

SURVEILLANCE REQUIREMENTS

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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.

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

#### 3/4.7.3.2 COMPONENT COOLING WATER SUBSYSTEM – SHUTDOWN

##### LIMITING CONDITION FOR OPERATION

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3.7.3.2 Two component cooling water subsystems (shared with Unit 1) 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

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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) servicing 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.

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\* 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.

## PLANT SYSTEMS

### 3/4.7.4 SERVICE WATER SYSTEM

#### 3/4.7.4.1 SERVICE WATER SYSTEM - OPERATING

##### LIMITING CONDITION FOR OPERATION

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3.7.4.1 Two service water loops (shared with Unit 1) 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. The provisions of Specification 3.0.4 are not applicable once component cooling heat exchangers flows are throttled.
- 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 6 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.

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\* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs), one of the two service water (SW) loops is permitted to temporarily bypass the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 49 days each. During each period of operation with only one SW loop available to/from the CCHXs, four out of four SW pumps (excluding the auxiliary SW pumps) shall remain OPERABLE. With one SW pump inoperable, work may continue provided actions are taken to either restore the pump to OPERABLE status within 72 hours or restore both SW headers to/from the CCHXs 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. During each period of operation with only one SW loop available to/from the CCHXs, the automatic closure feature of the SW valves servicing the CCHXs shall be defeated to ensure SW flow to the CCHXs is not interrupted. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable, provided two SW loops are capable of providing cooling for the other OPERABLE plant components. Upon completion of the work associated with the second 49-day period, this footnote will no longer be applicable.

## PLANT SYSTEMS

### 3/4.7.4 SERVICE WATER SYSTEM

#### 3/4.7.4.1 SERVICE WATER SYSTEM - OPERATING

##### LIMITING CONDITION FOR OPERATION

- 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.
- e. With two service water loops inoperable for reasons other than described in ACTION 3.7.4.1.b, place both units in HOT SHUTDOWN within 12 hours and within the following hour, initiate actions to place both units in COLD SHUTDOWN and continue actions until both units are in COLD SHUTDOWN.

##### SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two service water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 6 months by measurement of the movement of the pumphouse and wing walls.
- c. At least once per 18 months during shutdown, by:
  - 1. Verifying that each automatic valve servicing safety related equipment actuates to its correct position on an actual or simulated safety injection signal.
  - 2. Verifying that each automatic service water valve actuates to its correct position on an actual or simulated containment high-high signal.
- d. Each service water pump will be tested in accordance with Specification 4.0.5.

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\* 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 inspection of and repairs to buried piping interior coatings and pump or valve house components.