

November 20, 1985

Docket Nos. 50-338  
and 50-339

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Mr. W. L. Stewart  
Vice President - Nuclear Operations  
Virginia Electric and Power Company  
Post Office Box 26666  
Richmond, Virginia 23261

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment Nos. 71 and 57 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The amendments revise the Technical Specifications (TS) in response to your letter dated September 19, 1985. The amendments are effective as of the date of issuance.

The amendments revise the NA-1&2 TS in accordance with the NRC Generic Letter 84-13, "Technical Specifications For Snubbers," dated May 3, 1985. The revisions include adding a statement to TS 3.7.10 which specifies which snubbers shall be operable and deleting TS Tables 3.7.4a and 3.7-4b. Deleting these tables removes the present requirement for updating the TS whenever a snubber is added or deleted from NA-1&2. In addition, the revisions include a statement in the TS specifying which snubbers are required to be operable and maintaining a list of snubbers as part of the NA-1-2 plant records required by TS 4.9.7.f which requires a record of service life of each snubber. The changes also include administrative changes to the TS as well as removing exemptions for testing of large bore snubbers applying to past refueling outages and which are no longer applicable.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

/s/  
Leon B. Engle, Project Manager  
Operating Reactors Branch #3  
Division of Licensing

Enclosure:

1. Amendment No. 71 to NPF-4
2. Amendment No. 57 to NPF-7
3. Safety Evaluation

cc w/enclosures:  
See next page

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

North Anna Power Station  
Units 1 and 2

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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. 71  
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 19, 1985, 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.

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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. 71, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Edward J. Butcher, Acting Chief  
Operating Reactors Branch #3  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 20, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 71

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.

<u>Remove Pages</u>	<u>Insert Pages</u>
3/4 7-28	3/4 7-28
3/4 7-29	3/4 7-29
3/4 7-29a	3/4 7-30
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## PLANT SYSTEMS

### RHR - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

3.7.9.2 As a minimum, one residual heat removal subsystem shall be OPERABLE.

APPLICABILITY: MODES 4 and 5.

#### ACTION:

With no Residual Heat Removal subsystem OPERABLE, immediately restore at least one RHR subsystem to OPERABLE status or maintain the Reactor Coolant System  $T_{avg}$  less than 350°F by use of alternate heat removal methods. The provisions of Specifications 3.0.3, 3.0.4 and 4.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.7.9.2 Each Residual Heat Removal subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirement of Specification 4.7.9.1, and

- a. At least once per 31 days by;
  1. Cycling each testable, remote or automatically operated valve through at least one complete cycle, and
  2. Verifying the correct position of each manual valve not locked sealed or otherwise secured in position, and
  3. Verifying the correct position of each remote or automatically operated valve.

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All snubbers utilized on safety related systems shall be OPERABLE. For those snubbers utilized on non-safety related systems, each snubber shall be OPERABLE if a failure of that snubber or the failure of the non-safety related system would have an adverse effect on any safety related system.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.10.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.10 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspections

The first inservice visual inspection of snubbers shall be performed after four months but within 10 months of commencing POWER OPERATION and shall include the snubbers defined in 3.7.10. If less than two (2) snubbers are found inoperable during the first inservice visual inspection, the second inservice visual inspection shall be performed 12 months + 25% from the date of the first inspection. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>Subsequent Visual Inspection Period*#</u>
0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
8 or more	31 days + 25%

Early inspections (i.e., those performed before 75% of the current inspection period has elapsed) may be used to set new reference surveillance dates for the current inspection period. However, the results of such early inspections cannot be used to increase the current inspection period (period may only stay the same or decrease as determined by the table in 4.7.10.a).

\*The inspection interval shall not be lengthened more than one step at a time.  
#The provisions of Specification 4.0.2 are not applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visual indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, and (3) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.10.d and 4.7.10.e. However, when the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable and cannot be determined OPERABLE via functional testing for the purpose of establishing the next visual inspection interval. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Functional Tests

At least once per 18 months during shutdown, a representative sample of that number of snubbers which follows the expression  $35 \left[ 1 + \frac{c}{2} \right]$ , where  $c=2$  is the allowable number of snubbers not meeting the acceptance criteria selected by the operator, shall be functionally tested either in-place or in a bench test. For each number of snubbers above  $c$  which does not meet the functional test acceptance criteria of Specification 4.7.10.d or 4.7.10.e, an additional sample selected according to the expression

$$35 \left( 1 + \frac{c}{2} \right) \left( \frac{2}{c+1} \right)^2 (a - c)$$

shall be functionally tested, where  $a$  is the total number of snubbers found inoperable during the functional testing of the representative sample.

Functional testing shall continue according to the expression

$$b \left[ 35 \left( 1 + \frac{c}{2} \right) \left( \frac{2}{c+1} \right)^2 \right]$$
 where  $b$  is the number of snubbers found

inoperable in the previous re-sample, until no additional inoperable snubbers are found within a sample or until all snubbers have been functionally tested.



PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle
2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.).
3. Snubbers within 10 feet of the discharge from a safety relief valve.

Snubbers that are "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative samples.\* Accessible and inaccessible snubbers may be used jointly or separately as the basis for the sampling plan.

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling.

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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\*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the design service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force. Drag force shall not have increased more than 50% since the last functional test.
2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
3. Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

f. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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At least once per 18 months, the installation and maintenance records for each snubber defined in 3.7.10 shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be re-evaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This re-evaluation, replacement or reconditioning shall be indicated in the records.

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PLANT SYSTEMS

3/4.7.11 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

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3.7.11.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material, shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

- a. Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and:
  - 1. Either decontaminated and repaired, or
  - 2. Disposed of in accordance with Commission Regulations.
- b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

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4.7.11.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.11.1.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive materials.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30 day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants", March 1974.

#### 3/4.7.6 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken (and operation will be terminated) in the event of flood conditions. The limit of elevation 256 feet Mean Sea Level USGS datum is based on the maximum elevation at which facility flood control measures provide protection to safety related equipment.

#### 3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

The OPERABILITY of the control room ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50.

#### 3/4.7.8 SAFEGUARDS AREA VENTILATION SYSTEM

The OPERABILITY of the safeguards area ventilation system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the accident analyses.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.9.1 AND 3/4.7.9.2 RESIDUAL HEAT REMOVAL SYSTEM (RHR)

The OPERABILITY of the RHR system ensures that residual heat removal capability is available below 350°F following plant shutdown. The RHR system is not part of the ECCS system.

#### 3/4.7.10 SNUBBERS

The snubbers defined in Technical Specification 3.7.10 are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

## ADMINISTRATIVE CONTROLS

- a. Records and drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.
- c. Records of facility radiation and contamination surveys.
- d. Records of radiation exposure for all individuals entering radiation control areas.
- e. Records of gaseous and liquid radioactive material released to the environs.
- f. Records of transient operational cycles for those facility components identified in Table 5.9-1.
- g. Records of reactor tests and experiments.
- h. Records of training and qualification for current members of the plant staff.
- i. Records of in-service inspections performed pursuant to these Technical Specifications.
- j. Records of Quality Assurance activities required by the QA Manual.
- k. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- l. Records of meetings of the SNSOC.
- m. Records of meetings of the System Nuclear Safety and Operating Committee to issuance of Amendment No. 30.
- n. Records of the service lives of all hydraulic and mechanical snubbers required to be OPERABLE by Technical Specification 3.7.10 including the date at which the service life commences and associated installation and maintenance records.
- o. Records of secondary water sampling and water quality.
- p. Records of Environmental Qualification which are covered under the provisions of Paragraph 6.13.
- q. Records of analyses required by the radiological environmental monitoring program that would permit evaluation of the accuracy of the analysis at a later date. This would include procedures effective at specified times and QA records showing that these procedures were followed.



## ADMINISTRATIVE CONTROLS

### 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

### 6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit.\* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiation Work Permit.

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the Plant Health Physicist.

\*Health Physics personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.



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

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57  
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 19, 1985, 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 J;
  - 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. 57, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Edward J. Butcher, Acting Chief  
Operating Reactors Branch #3  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 20, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 57

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.

<u>Remove Pages</u>	<u>Insert Pages</u>
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3/4 7-26c	3/4 7-28
3/4 7-26d	3/4 7-29
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B 3/4 7-6	B 3/4 7-6
6-23	6-23

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All snubbers utilized on safety related systems shall be OPERABLE. For those snubbers utilized on non-safety related systems, each snubber shall be OPERABLE if a failure of that snubber or the failure of the non-safety related system would have an adverse effect on any safety related system.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.10.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.10 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspections

The first inservice visual inspection of snubbers shall be performed after four months but within 10 months of commencing POWER OPERATION and shall include the snubbers defined in 3.7.10. If less than two (2) snubbers are found inoperable during the first inservice visual inspection, the second inservice visual inspection shall be performed 12 months + 25% from the date of the first inspection. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>Subsequent Visual Inspection Period*#</u>
0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
8 or more	31 days + 25%

Early inspections (i.e. those performed before 75% of the current inspection period has elapsed) may be used to set new reference surveillance dates for the current inspection period. However, the results of such early inspections cannot be used to increase the current inspection period (period may only stay the same or decrease as determined by the table in 4.7.10.a).

\*The inspection interval shall not be lengthened more than one step at a time.  
#The provisions of Specification 4.0.2 are not applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visual indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, and (3) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.10.d and 4.7.10.e. However, when the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable and cannot be determined OPERABLE via functional testing for the purpose of establishing the next visual inspection interval. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Functional Tests

At least once per 18 months during shutdown, a representative sample of that number of snubbers which follows the expression  $35 \left[ 1 + \frac{c}{2} \right]$ , where  $c=2$  is the allowable number of snubbers not meeting the acceptance criteria selected by the operator, shall be functionally tested either in-place or in a bench test. For each number of snubbers above  $c$  which does not meet the functional test acceptance criteria for Specification 4.7.10.d or 4.7.10.e, an additional sample selected according to the expression

$$35 \left( 1 + \frac{c}{2} \right) \left( \frac{2}{c+1} \right)^2 (a - c)$$

shall be functionally tested, where  $a$  is the total number of snubbers found inoperable during the functional testing of the representative sample.

Functional testing shall continue according to the expression

$b \left[ 35 \left( 1 + \frac{c}{2} \right) \left( \frac{2}{c+1} \right)^2 \right]$  where  $b$  is the number of snubbers found inoperable in the previous re-sample, until no additional inoperable snubbers are found within a sample or until all snubbers have been functionally tested.

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle
2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.).
3. Snubbers within 10 feet of the discharge from a safety relief valve.

Snubbers that are "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative samples.\* Accessible and inaccessible snubbers may be used jointly or separately as the basis for the sampling plan.

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included in the re-sampling.

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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\*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the design service.

#### d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

#### e. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force. Drag force shall not have increased more than 50% since the last functional test.
2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
3. Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

#### f. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.



PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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At least once per 18 months thereafter, the installation and maintenance records for each snubber defined in 3.7.10 shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be re-evaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30 day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants", March 1974.

#### 3/4.7.6 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken (and operation will be terminated) in the event of flood conditions. The limit of elevation 256 feet Mean Sea Level USGS datum is based on the maximum elevation at which facility flood control measures provide protection to safety related equipment.

#### 3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

The OPERABILITY of the control room ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. Cumulative operation of the system with the heaters on for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. This limitation is consistent with the requirements of General Design Criteria 19 to Appendix "A", 10 CFR 50.

#### 3/4.7.8 SAFEGUARDS AREA VENTILATION SYSTEM

The OPERABILITY of the safeguards area ventilation system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. Cumulative operation of the system with the heaters on for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the accident analyses.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.9.1 AND 3/4.7.9.2 RESIDUAL HEAT REMOVAL SYSTEM (RHR)

The OPERABILITY of the RHR system ensures that residual heat removal capability is available below 350°F following plant shutdown. The RHR system is not part of the ECCS system.

#### 3/4.7.10 SNUBBERS

The snubbers defined in Technical Specification 3.7.10 are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

ADMINISTRATIVE CONTROLS (Continued)

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- g. Records of reactor tests and experiments.
- h. Records of training and qualification for current members of the plant staff.
- i. Records of in-service inspections performed pursuant to these Technical Specifications.
- j. Records of Quality Assurance activities required by the QA Manual.
- k. Records of the service life of all hydraulic and mechanical snubbers required to be operable by Technical Specification 3.7.10 including the date at which the service life commences and associated installation and maintenance records.
- l. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- m. Records of meetings of the SNSOC.
- n. Records of meetings of the System Nuclear Safety and Operating Committee to issuance of Amendment No. 11.
- o. Records of secondary water sampling and water quality.
- p. Records for Environmental Qualification which are covered under the provisions of Paragraph 2.C(4)(e) of License No. NPF-7.
- q. Records of analyses required by the radiological environmental monitoring program that would permit evaluation of the accuracy of the analysis at a later date. This would include procedures effective at specified times and QA records showing that these procedures were followed.

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance

ADMINISTRATIVE CONTROLS (Continued)

thereto shall be controlled by requiring issuance of a Radiation Work Permit\*. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in the protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiation Work Permit.

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the Plant Health Physicist.

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\*Health Physics personnel or personnel escorted by Health Physics personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry in high radiation areas.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 71 AND 57 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

INTRODUCTION:

By letter dated September 19, 1985 (Serial No. 85-645), the Virginia Electric and Power Company (the licensee) requested an amendment to the Technical Specifications (TS) for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). Specifically, the amendments would revise TS Sections 3/4.7.10 and 6.10.2 in accordance with the guidance provided in NRC Generic Letter 84-13, "Technical Specifications For Snubbers," dated May 3, 1984.

DISCUSSION:

The proposed changes would add a statement to TS 3.7.10 specifying which snubbers shall be operable and delete Tables 3.7-4a and 3.7-4b. This change would remove the requirement to update the TS when a snubber is added or deleted from NA-1&2. This is in accordance with NRC Generic Letter 84-13 dated May 3, 1984 entitled "Technical Specifications For Snubbers." Generic Letter 84-13 recommends that Tables 3.7-4a and 3.7-4b be eliminated from the TS. Generic Letter 84-13 also recommends that the TS be modified to specify which snubbers are required to be operable. This revision includes a statement specifying "All snubbers utilized on safety related systems shall be OPERABLE. For those snubbers utilized on non-safety related systems, each snubber shall be OPERABLE if a failure of that snubber or the failure of the non-safety related system would have an adverse effect on any safety related system." A list of snubbers will still be maintained as part of the plant records as required by TS 4.9.7.f. TS 4.9.7.f requires "a record of the service life of each snubber, the date at which the designated service life commenced and the installation and maintenance records on which the designated service life is based shall be maintained." The addition or deletion of a snubber will be documented in the plant records. These two changes are in accordance with the recommendations of Generic Letter 84-13. Also references to Tables 3.7-4a and 3.7-4b have been deleted from the TS.

The proposed change would also add a statement to surveillance requirement 4.7.10.a regarding the early inspection of snubbers. Early inspections can be used to set a new reference inspection date. However, the results of such

early inspections cannot be used to increase the inspection interval. This statement is present in the bases section of the TS and is being added to the surveillance requirements for clarification purposes. This statement is also consistent with the recommendation of Generic Letter 84-13.

In section 4.7.10.c, the expression that is used to determine the sample size for additional functional testing of snubbers (should it be required) has been modified to be in accordance with Generic Letter 84-13.

The exemptions from functional testing for large snubbers greater than 50 kips for NA-1&2 during the Cycle 3 and Cycle 1 refueling outages, respectively, have been deleted since these outages have been completed.

#### EVALUATION:

The proposed changes are in conformance with the NRC Generic Letter 84-13, and are, therefore acceptable. In addition, removing the exemptions for functional testing of snubbers greater than 50 kips for specified refueling outages already completed is an administrative change which provides consistency to the NA-1&2 TS with respect to timeliness, and is therefore acceptable.

#### ENVIRONMENTAL CONSIDERATIONS

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. 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.

#### CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Engle

Dated: November 20, 1985