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Docket Nos. 50-338
and 50-339

Mr. R. H. Leasburg
Vice President - Nuclear Operations
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Leasburg:

The Commission has issued the enclosed Amendment Nos. 33 and 13 to Facility Operating License Nos. NPF-4 and NPF-7 for North Anna Power Station, Unit Nos. 1 and 2 (NA-1&2). The amendments are to become effective on November 20, 1981.

The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated July 1, 1981 (Serial No. 293) and as supplemented by letter dated September 10, 1981 (Serial No. 520), and in our discussions with you regarding your application.

These changes to the NA-1&2 Technical Specifications revise the inservice surveillance requirements for safety related snubbers in response to our letter dated November 20, 1980.

Copies of the related Safety Evalutation and the Notice of Issuance are also enclosed.

CP
1

Sincerely,

Original signed by:

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

RECEIVED
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U.S. NUCLEAR REGULATORY COMMISSION

Enclosures:
1. Amendment No. 33 to NPF-4
2. Amendment No. 13 to NPF-7
3. Safety Evaluation
4. Notice of Issuance

cc w/enclosures:
See next page

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OFFICE	ORB#3:DL	ORB#3:DL	ORAB	ORB#3:DL	AD/OR:DL	OELD	
SURNAME	PKreutzer	LEngle/pn	HShaw	RAClark	TMNovak	DSwanson	
DATE	10/29/81	10/29/81	10/30/81	11/2/81	11/2/81	11/3/81	

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Virginia Electric and Power Company

cc:
Richard M. Foster, Esquire
Musick, Williamson, Schwartz,
Leavenworth & Cope, P.C.
P. O. Box 4579
Boulder, Colorado 80306

Michael W. Maupin, Esquire
Hunton, Williams, Gay and Gibson
P. O. Box 1535
Richmond, Virginia 23212

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Mr. Edward Kube
Board of Supervisors
Louisa County Courthouse
P. O. Box 27
Louisa, Virginia 23093

Ellyn R. Weiss, Esquire
Sheldon, Harman, Roisman and Weiss
1725 I Street, N.W. Suite 506
Washington, D. C. 20006

Mr. W. R. Cartwright, Station Manager
P. O. Box 402
Mineral, Virginia 23117

Mr. Anthony Gambardella
Office of the Attorney General
11 South 12th Street - Room 308
Richmond, Virginia 23219

Mr. Edward Webster
Resident Inspector/North Anna
c/o U.S.N.R.C.
Route 2, Box 78A
Mineral, Virginia 23117

Mr. J. H. Ferguson
Executive Vice President - Power
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Mr. James Torson
501 Leroy
Socorro, New Mexico 87891

Mrs. Margaret Dietrich
Route 2, Box 568
Gordonsville, Virginia 22042

Mr. James C. Dunstance
State Corporation Commission
Commonwealth of Virginia
Blandon Building
Richmond, Virginia 23209

Mrs. June Allen
North Anna Environmental Coalition
8720 Lockmoor Circle
Wichita, Kansas 67207

U.S. Environmental Protection Agency
Region III Office
ATTN: Regional Radiation Representative
Curtis Building
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Mr. Paul W. Purdom
Environmental Studies Institute
Drexel University
32nd and Chestnut Streets
Philadelphia, Pennsylvania 19104

Atomic Safety and Licensing
Appeal Board Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 33
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 (the licensee) dated July 1, 1981 as supplemented by letter dated September 10, 1981, 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. 33 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective on November 20, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 5, 1981

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 33 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.

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3/4 3-33
3/4 7-28
3/4 7-29
3/4 7-29a
3/4 7-29b-add
3/4 7-29c-add
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ADMINISTRATIVE CONTROLS

TABLE 3.3-3 (Continued)

TABLE NOTATION

#Trip function may be blocked in this MODE below P-11.

##Trip function may be blocked in this MODE below P-12.

###The channel(s) associated with the protective functions derived from the out of service Reactor Coolant Loop shall be placed in the tripped mode.

*The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

ACTION 13 - With the number of OPERABLE Channels one less than the Total Number of Channels, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 14 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST, provided the inoperable channel is placed in the tripped condition within 1 hour.

ACTION 15 - With a channel associated with an operating loop inoperable, restore the inoperable channel to OPERABLE status within 2 hours or be in HOT SHUTDOWN within the following 12 hours; however, one channel associated with an operating loop may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 16 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the blocked condition and the Minimum Channels OPERABLE requirement is demonstrated within 1 hour; one additional channel may be blocked for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

TABLE 3.3-3 (Continued)

ACTION 17 - With the number of OPERABLE Channels one less than the Total Number of Channels operation may proceed provided the inoperable channel is placed in the tripped condition within 1 hour and the Minimum Channels OPERABLE requirement is met, one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 18 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 - With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 1 hour.

b. The Minimum Channels OPERABLE requirements is met; however, one additional channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 20 - With the number of OPERABLE Channels one less than the Total Number of Channels, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 1 hour for surveillance testing per Specification 4.3.2.1.1 provided the other Channel is OPERABLE.

ACTION 21 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable Channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. AUXILIARY FEEDWATER PUMP START		
a. Manual	N. A.	N. A.
b. Automatic Actuation Logic	N. A.	N. A.
c. Steam Generator Water Level Low-Low	≥ 18% of narrow range instrument span each steam generator	≥ 17% of narrow range instrument span each steam generator
d. S.I.	See 1 above (All S.I. Setpoints)	
e. Station Blackout	≥ 57.5% Transfer Bus Voltage	≥ 52.5% Transfer Bus Voltage
f. Trip of Main Feed Pump	N. A.	N. A.
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	2999 ± 60 volts with a 2.2 ± 0.03 second time delay	2912 ± 60 volts with a 3 ± 0.03 second time delay
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	3744 ± 1.4 volts with a 60 ± 3 second time delay	3619 ± 1.4 volts with a 75 ± 3 second time delay

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
5. TURBINE TRIP AND FEEDWATER ISOLATION				
a. Steam Generator Water Level--High-High	S	R	M	1, 2, 3
6. AUXILIARY FEEDWATER PUMPS				
a. Manual	N. A.	N. A.	M(1)	1, 2, 3
b. Automatic Actuation Logic	N. A.	N. A.	M(2)	1, 2, 3
c. Steam Generator Water Level--Low-Low	S	R	M	1, 2, 3, 4
d. S.I.	See 1 above (all S.I. Surveillance Requirements)			
e. Station Blackout	N. A.	R	N. A.	1, 2, 3, 4
f. Main Feedwater Pump Trip	N. A.	N. A.	R	1, 2
7. LOSS OF POWER 4.16 KV Emergency Bus				
a. Loss of Voltage	N. A.	R	M(2)	1, 2, 3
b. Degraded Voltage	N. A.	R	M(2)	1, 2, 3

TABLE 4.3-2 (Continued)

TABLE NOTATION

(1) Manual actuation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual safeguards actuation shall receive a CHANNEL FUNCTIONAL TEST at least once every other 31 days.

(2) Each train or logic channel shall be tested at least every other 31 days.

(3) The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter.

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.

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All snubbers listed in Tables 3.7-4a and 3.7-4b shall be OPERABLE.

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 all snubbers listed in Tables 3.7-4a and 3.7-4b. 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:

No. Inoperable Snubbers per Inspection Period	Subsequent Visual Inspection Period*#
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%

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.

---

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

SURVEILLANCE REQUIREMENTS (Continued)

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 reservior 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 $35\ [1 + \frac{c}{2}]$, 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 $35\ (1 + \frac{c}{2})\ (\frac{2}{c + 1})^2\ (a - c)$ 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 $b\ [35(1 + \frac{c}{2})^2]$ 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 in Table 3.7-4a and 3.7-4b have been functionally tested.

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 identified in Tables 3.7-4a and 3.7-4b as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.* Tables 3.7-4a and 3.7-4b 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.

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.

---

*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.

SURVEILLANCE REQUIREMENTS (Continued)

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.

At least once per 18 months, the installation and maintenance records for each snubber listed in Tables 3.7-4a and 3.7-4b 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

SURVEILLANCE REQUIREMENTS (Continued)

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 reevaluated 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.

TABLE 3.7-4a

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
804	CH - 255-A	I	Yes	No
805	CH - 255-A	I	Yes	No
807	CH - 238-1	I	Yes	Yes
808	CH - 238-1	I	Yes	Yes
803	CH - 232-6	I	No	Yes
811	CH - 251-12	I	Yes	No
800	CH - 262-A	I	Yes	No
801	CH - 262-A	I	Yes	No
810	CH - 263-12	I	Yes	Yes
809	CH - 236-12	I	Yes	Yes
812	CH - 236-8	I	Yes	Yes
813	CH - 236-8	I	Yes	Yes

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
814	CH-251-C	I	Yes	No
802	CH-262-C	I	Yes	Yes
815	CH-235-C	I	Yes	Yes
859	CH-226-10	A	No	No
860	CH-222-11	A	No	No
187	CH-244-12	I	Yes	No
186	CH-244-12	I	Yes	No
185	CH-251-12	I	Yes	Yes
842	CH-251-6	A	No	No
189	CH-244-Pent	A	No	No
190	CH-244-Pent	A	No	Yes
191	CH-244-Pent	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
188	CH-244-Pent	A	No	No
806	CH-251-A	I	Yes	No
203A	QS-338-11½	I	No	Yes
203B	QS-338-11½	I	No	Yes
207	QS-267-11½	A	No	No
209A	QS-338-2	I	No	Yes
209B	QS-338-2	I	No	Yes
600	QS-256-11½	I	Yes	Yes
800	QS-274-QSH	A	No	No
801	QS-274-QSH	A	No	No
802	QS-272-QSH	A	No	No
803	QS-270-QSH	A	No	No
804	QS-270-QSH	A	No	No

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
100	RC-247-A	I	Yes	No
101	RC-246-A	I	Yes	No
102	RC-234-18	I	No	Yes
104	RC-278-P	I	Yes	Yes
105	RC-278-P	I	Yes	Yes
106	RC-308-P	I	Yes	No
107	RC-308-P	I	Yes	No
108	RC-232-9 3/4	I	No	Yes
109	RC-235-6	I	Yes	Yes
110	RC-234-6	I	Yes	Yes
111	RC-247-C	I	Yes	No

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
112	RC-247-C	I	Yes	No
113	RC-259-P	I	Yes	Yes
114A	RC-260-B	I	Yes	Yes
114B	RC-258-P	I	Yes	Yes
115A	RC-308-P	I	Yes	Yes
115B	RC-308-P	I	Yes	Yes
116A	RC-308-P	I	Yes	Yes
116B	RC-308-P	I	Yes	Yes
117	RC-308-P	I	Yes	No
118	RC-308-P	I	Yes	No
119A	RC-306-P	I	Yes	No
119B	RC-306-P	I	Yes	No

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
120	RC-310-P	I	Yes	No
121	RC-302-P	I	Yes	Yes
122	RC-303-P	I	Yes	Yes
123	RC-303-P	I	Yes	Yes
124A	RC-306-P	I	Yes	No
124B	RC-306-P	I	Yes	No
125	RC-306-P	I	Yes	Yes
126	RC-307-P	I	Yes	No
127	RC-307-P	I	Yes	No
128	RC-302-P	I	Yes	Yes
129	RC-301-P	I	Yes	No
130	RC-302-P	I	Yes	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
131A	RC-306-P	I	Yes	No
131B	RC-306-P	I	Yes	No
132	RC-307-P	I	Yes	No
133	RC-302-P	I	Yes	Yes
134	RC-304-P	I	Yes	Yes
135	RC-304-P	I	Yes	Yes
136A	RC-306-P	I	Yes	Yes
136B	RC-306-P	I	Yes	No
136C	RC-306-P	I	Yes	Yes
137	RC-306-P	I	Yes	No
450	CC-229-RCB	I	Yes	Yes
853	RC-256-A	I	Yes	Yes
856	RC-256-A	I	Yes	Yes

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
847	RC-256-A	I	Yes	Yes
848	RC-256-B	I	Yes	Yes
849	RC-256-C	I	Yes	Yes
852	RC-256-C	I	Yes	Yes
855	RC-256-C	I	Yes	Yes
854	RC-256-B	I	Yes	Yes
851	RC-256-B	I	Yes	Yes
858	RC-256-C	I	Yes	Yes
857	RC-256-B	I	Yes	Yes
850	RC-235-A	I	Yes	Yes
817	RC-235-6	I	Yes	Yes
818	RC-236-6	I	Yes	Yes

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
821	RC-238-18½	I	Yes	Yes
822	RC-236-1	I	Yes	Yes
833	RC-243-B	I	Yes	Yes
826	RC-243-C	I	Yes	No
827	RC-243-C	I	Yes	No
834	RC-243-B	I	Yes	No
837	RC-244-A	I	Yes	No
838	RC-244-A	I	Yes	No
842	RC-246-A	I	Yes	Yes
843	RC-247-A	I	Yes	No
835	RC-243-B	I	Yes	No
839	RC-243-B	I	Yes	No

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
840	RC-243-A	I	Yes	No
841	RC-243-A	I	Yes	Yes
819	RC-236-A	I	Yes	Yes
832	RC-243-B	I	Yes	No
820	RC-236-17	I	Yes	Yes
831	RC-243-B	I	Yes	No
823	RC-243-C	I	Yes	No
824	RC-243-C	I	Yes	No
860	RC-261-B	I	Yes	Yes
862	RC-261-B	I	Yes	Yes
864	RC-258-B	I	Yes	Yes
865	RC-258-B	I	Yes	Yes

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
863	RC-260-B	I	Yes	Yes
868	RC-258-B	I	Yes	Yes
828	RC-244-A	I	Yes	Yes
829	RC-244-A	I	Yes	Yes
830	RC-244-A	I	Yes	No
861	RC-261-B	I	Yes	No
869	RC-258-C	I	Yes	Yes
880	RC-261-C	I	Yes	Yes
871	RC-261-C	I	Yes	Yes
879	RC-258-C	I	Yes	Yes
859	RC-256-B	I	Yes	Yes
866	RC-257-B	I	Yes	Yes

TABLE 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
870	RC-258-C	I	Yes	Yes
877	RC-263-C	I	Yes	Yes
876	RC-258-C	I	Yes	Yes
890	RC-258-A	I	Yes	Yes
878	RC-258-C	I	Yes	Yes
882	RC-260-A	I	Yes	Yes
884	RC-261-A	I	Yes	Yes
889	RC-258-A	I	Yes	Yes
872	RC-261-C	I	Yes	Yes
887	RC-258-A	I	Yes	Yes
886	RC-258-A	I	Yes	Yes
888	RC-258-A	I	Yes	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
883	RC-260-A	I	Yes	Yes
885	RC-260-A	I	Yes	Yes
873	RC-262-C	I	Yes	Yes
875	RC-256-C	I	Yes	Yes
893	RC-268-9½	I	Yes	No
889A	RC-268-9½	I	Yes	No
891	RC-260-C	I	Yes	Yes
890A	RC-298-9½	I	Yes	Yes
111A	RC-298-9½	I	Yes	No
892	RC-261-C	I	Yes	Yes
867	RC-258-B	I	Yes	Yes
881	RC-258-A	I	Yes	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
100A	RC-265-P	I	Yes	No
101A	RC-265-P	I	Yes	No
102A	RC-265-P	I	Yes	No
103A	RC-265-P	I	Yes	No
104A	RC-264-A	I	Yes	Yes
105A	RC-264-A	I	Yes	Yes
106A	RC-264-B	I	Yes	Yes
107A	RC-264-B	I	Yes	Yes
108A	RC-264-C	I	Yes	Yes
109A	RC-264-C	I	Yes	Yes
138	RC-238-9 3/4	I	No	Yes
139	RC-252-11	I	Yes	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
140	RC-245-11	I	Yes	No
53-46	RC-249-A	I	Yes	No
53-46A	RC-249-A	I	Yes	No
217-4	RC-243-B	I	Yes	Yes
223-4	RC-303-P	I	Yes	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
100A	RH-228-8	A	No	No
100B	RH-228-8	A	No	No
100C	RH-228-8	A	No	No
100D	RH-228-8	A	No	No
100E	RH-228-8	A	No	No
101A	RH-228-5	A	No	No
102A	RH-228-5	A	No	Yes
102B	RH-228-5	A	No	Yes
103A	RH-228-3	A	No	Yes
103B	RH-228-3	A	No	Yes
103C	RH-228-3	A	No	Yes
104A	RH-233-4	I	Yes	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
105A	RH-225-A	I	No	Yes
106A	RH-244-4	I	Yes	Yes
107A	RH-229-3	A	No	Yes
107B	RH-229-3	A	No	Yes
107C	RH-229-3	A	No	Yes
108A	RH-237-2	A	No	Yes
108B	RH-237-2	I	Yes	Yes
109A	RH-245-3	I	Yes	Yes
109B	RH-245-3	I	Yes	Yes
109C	RH-245-3	I	Yes	Yes
109D	RH-245-3	I	Yes	Yes
110A	RH-240-5½	I	Yes	No
110B	RH-240-5½	I	Yes	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
110C	RH-240-5½	I	Yes	No
110D	RH-240-5½	I	Yes	No
111A	RH-227-4	I	Yes	Yes
111B	RH-227-4	I	Yes	Yes
112A	RH-224-4	I	Yes	Yes
113A	RH-224-4	I	Yes	Yes
113B	RH-224-4	I	Yes	Yes
114A	RH-224-4	I	Yes	No
115A	RH-234-4	I	Yes	Yes
116A	RH-229-4	I	Yes	Yes
117A	RH-224-4	I	Yes	No
118	RH-224-6	I	Yes	Yes
119	RH-240-5	I	Yes	Yes
452	RH-234-7	I	Yes	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
202	RS-267-16	I	No	Yes
204A	RS-338-9	I	No	Yes
204B	RS-338-9	I	No	Yes
205A	RS-338-10	I	No	Yes
205B	RS-338-10	I	No	Yes
206A	RS-338-2	I	No	Yes
206B	RS-338-2	I	No	Yes
208-A	RS-338-2	I	No	Yes
208-B	RS-338-2	I	No	Yes
136A	RS-305-P	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
200	SHP-291-RCA	I	No	Yes
201A	SHP-291-RCA	I	No	Yes
201B	SHP-291-RCA	I	No	Yes
202A	SHP-291-RCA	I	No	Yes
202B	SHP-291-RCA	I	No	Yes
210	SHP-291-RCA	I	No	Yes
211A	SHP-297-MSVH	A	No	Yes
211B	SHP-297-MSVH	A	No	Yes
212A	SHP-297-MSVH	A	No	Yes
212B	SHP-297-MSVH	A	No	Yes
213A	SHP-297-MSVH	A	No	Yes
213B	SHP-297-MSVH	A	No	Yes
230	SHP-297-MSVH	A	No	No
231	SHP-297-MSVH	A	No	No
232	SHP-297-MSVH	A	No	No
261	SHP-277-MSVH	A	No	Yes
262	SHP-282-MSVH	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
263	SHP-307-MSVH	A	No	No
264	SHP-307-MSVH	A	No	No
265	SHP-307-MSVH	A	No	No
266	SHP-282-MSVH	A	No	No
267	SHP-307-MSVH	A	No	No
268	SHP-307-MSVH	A	No	No
269	SHP-282-MSVH	A	No	No
233	SHP-282-MSVH	A	No	No
234	SHP-282-MSVH	A	No	No
236	SHP-282-MSVH	A	No	No
235	SHP-297-MSVH	A	No	No
237	SHP-297-MSVH	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
238	SHP-282-MSVH	A	No	No
462	SHP-297-MSVH	A	No	No
452	SHP-297-MSVH	A	No	No
472	SHP-297-MSVH	A	No	No
270	SHP-307-MSVH	A	No	No
246	SHP-291-TBM	A	No	Yes
247	SHP-288-TBM	A	No	Yes
248	SHP-288-TBM	A	No	Yes
249	SHP-273-TBM	A	No	No
250	SHP-268-TBB	A	No	Yes
251	SHP-287-TBM	A	No	Yes
252	SHP-267-TBB	A	No	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
253	SHP-267-TBB	I	No	Yes
254	SHP-267-TBB	I	No	Yes
255	SHP-277-TBM	A	No	Yes
256	SHP-274-TBB	A	No	Yes
257	SHP-294-TBM	A	No	Yes
258	SHP-294-TBM	A	No	Yes
259	SHP-294-TBM	A	No	Yes
260A	SHP-277-MSH	A	No	No
260B	SHP-277-MSH	A	No	No
220A	SHP-300-SB	A	No	Yes
220B	SHP-300-SB	A	No	No
221A	SHP-300-SB	A	No	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
221B	SHP-300-SB	A	No	No
222A	SHP-300-SB	A	No	Yes
222B	SHP-300-SB	A	No	No
224A	SHP-300-SB	A	No	Yes
224B	SHP-300-SB	A	No	Yes
225A	SHP-300-SB	A	No	No
225B	SHP-300-SB	A	No	No
226	SHP-300-SB	A	No	No
227A	SHP-300-SB	A	No	No
227B	SHP-300-SB	A	No	Yes
228A	SHP-300-SB	A	No	No
228B	SHP-300-SB	A	No	No
229	SHP-300-SB	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
217A	SHP-297-MSVH	A	No	Yes
217B	SHP-297-MSVH	A	No	Yes
218A	SHP-297-MSVH	A	No	Yes
218B	SHP-297-MSVH	A	No	Yes
219A	SHP-297-MSVH	A	No	Yes
219B	SHP-297-MSVH	A	No	Yes
209A	SHP-291-RCA	I	Yes	Yes
209B	SHP-291-RCA	I	Yes	Yes
223A	SHP-291-RCA	I	Yes	Yes
223B	SHP-291-RCA	I	Yes	Yes
23A	SHP-290-MSVH	A	No	No
23B	SHP-290-MSVH	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
30A	SHP-290-MSVH	A	No	No
30B	SHP-290-MSVH	A	No	No
38A	SHP-290-MSVH	A	No	No
38B	SHP-290-MSVH	A	No	No
203	SHP-291-RCA	I	Yes	Yes
204	SHP-291-RCA	I	Yes	Yes
205	SHP-291-RCA	I	Yes	Yes
206	SHP-291-RCA	I	Yes	Yes
207	SHP-291-RCA	I	Yes	Yes
208	SHP-291-RCA	I	Yes	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
400A	SI-258-13	I	No	Yes
400B	SI-258-13	I	No	Yes
400C	SI-258-13	I	No	Yes
400D	SI-258-13	I	No	Yes
101A	SI-256-SG	A	No	No
101B	SI-256-SG	A	No	No
102A	SI-256-SG	A	No	No
102B	SI-256-SG	A	No	No
104A	SI-256-SG	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
104B	SI-256-SG	A	No	No
105	SI-256-SG	A	No	No
106	SI-256-SG	A	No	No
100	SI-257-B	A	No	Yes
101	SI-257-B	I	No	Yes
101D	SI-257-B	I	No	Yes
101C	SI-257-B	I	No	Yes
102C	SI-221-B	A	No	No
103A	SI-238-C	I	Yes	Yes
103B	SI-238-C	I	Yes	Yes
103C	SI-238-C	I	Yes	Yes
104	SI-221-C	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
105A	SI-238-A	I	No	Yes
105B	SI-238-A	I	No	Yes
105C	SI-238-A	I	No	Yes
106A	SI-221-A	A	No	No
107	SI-256-SG	A	No	No
108	SI-256-SG	A	No	No
109	SI-250-A	I	Yes	No
110	SI-219-A	A	No	No
111	SI-241-1	A	No	No
112	SI-256-SG	A	No	No
113	SI-256-SG	A	No	No
451	SI-238-9	I	Yes	Yes
700	SI-256-SG	A	No	No
701	SI-256-SG	A	No	No
702	SI-256-SG	A	No	No
703	SI-256-SG	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
200	WFPD-291-RCA	A	No	No
201	WFPD-291-RCA	A	No	No
202	WFPD-291-RCA	A	No	No
203	WFPD-291-RCA	A	No	No
204	WFPD-291-RCA	A	No	No
205	WFPD-291-RCA	A	No	Yes
206	WFPD-291-RCA	A	No	No
207	WFPD-291-RCA	A	No	No
208	WFPD-291-RCA	A	No	No
209	WFPD-291-RCA	A	No	No
210	WFPD-291-RCA	A	No	No
211	WFPD-291-RCA	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
212	WFPD-291-RCA	A	No	No
216	WFPD-282-MSVH	A	No	No
217	WFPD-282-MSVH	A	No	No
218	WFPD-282-MSVH	A	No	No
222	WFPD-272-MSVH	A	No	No
223	WFPD-272-MSVH	A	No	No
224	WFPD-272-MSVH	A	No	No
231A	WFPD-291-RCA	A	No	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
231B	WFPD-291-RCA	A	No	Yes
231C	WFPD-291-RCA	A	No	Yes
231D	WFPD-291-RCA	A	No	Yes
235	WFPD-291-RCA	A	No	No
600	WFPD-291-3	I	Yes	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
213	FW-300-SB	A	No	No
214	FW-300-SB	A	No	No
215	FW-300-SB	A	No	No
226A	FW-300-SB	A	No	No
226B	FW-300-SB	A	No	No
227A	FW-300-SB	A	No	No
227B	FW-300-SB	A	No	No
228	FW-300-SB	A	No	No
229	FW-300-SB	A	No	No
230	FW-300-SB	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
245A	FW-295-FWH	A	No	Yes
245B	FW-295-FWH	A	No	Yes
246	FW-295-FWH	A	No	Yes
233	SDHV-307-MSVH	A	No	No
233A	SDHV-307-MSVH	A	No	No
234	SDHV-307-MSVH	A	No	No
235	SDHV-307-MSVH	A	No	Yes
236	SDHV-297-MSVH	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
200	WS-256-SG	A	No	No
201	WS-256-SG	A	No	No
202	WS-244-ABB	A	No	No
203	WS-244-ABB	A	No	No
204A	WS-244-ABB	A	No	No
204B	WS-244-ABB	A	No	Yes
206	WS-244-ABB	A	No	No
207	WS-244-ABB	A	No	No
208	WS-244-ABB	A	No	No
205A	WS-244-ABB	A	No	No
205B	WS-244-ABB	A	No	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
405	CC-224-Pent	A	No	Yes
407	CC-224-Pent	A	No	No
411	CC-255-Pent	A	No	No
412	CC-252-Pent	A	No	No
413	CC-256-Pent	A	No	No
202	FC-249-FBB	I	No	No
204	FC-249-FBB	I	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
1	WGCB-246-A	I	Yes	Yes
2	WGCB-246-C	I	Yes	Yes
1A	WGCB-244-Pent	I	Yes	No
2A	WGCB-244-Pent	I	Yes	No
103	WGCB-279-TBM	I	No	Yes
104	WGCB-279-TBM	I	No	Yes

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
237	SAE-307-MSVH	A	No	No
238	SAE-307-MSVH	A	No	No
239	SAE-307-MSVH	A	No	No
240	SAE-307-MSVH	A	No	No
241	SAE-307-MSVH	A	No	No
242	SAE-307-MSVH	A	No	No
243	SAE-297-MSVH	A	No	No
244	SAE-297-MSVH	A	No	No
245	SAE-297-MSVH	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
246	SAE-279-AFW	A	No	No
247	SAE-297-AFW	A	No	No
248	SAE-297-AFW	A	No	No
249	SAE-297-AFW	A	No	No
250	SAE-297-AFW	A	No	No
251	SAE-297-AFW	A	No	No
252	SAE-297-AFW	A	No	No
253	SAE-297-AFW	A	No	No
254	SAE-297-AFN	A	No	No
255	SAE-297-AFW	A	No	No
256	SAE-297-AFW	A	No	No
257	SAE-297-AFW	A	No	No

Table 3.7-4a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

SNUBBER No.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA)#	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
280	SAE-305-MSVH	A	No	Yes
281	SAE-305-MSVH	A	No	Yes
282	SAE-305-MSVH	A	No	Yes

Table 3.7-4b

SAFETY RELATED MECHANICAL SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION (ELEVATION-AREA) #	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)
118	CFPD-304-3	I	Yes	No
119	CFPD-304-3	I	Yes	No
221	CFPD-304-13	I	Yes	No
224	CFPD-304-13	I	Yes	No

TABLES 3.7-4a AND 3.7-4b (Continued)

TABLE NOTATIONS

#LOCATION ABBREVIATIONS

Abbreviations	Area
A	Cubicle A
B	Cubicle B
C	Cubicle C
Pent.	Penetration Area Aux. Bldg.
P	Pressurizer Cubicle
RCA	Reactor Containment Annulus
MSVH	Main Steam Valve House
MSH	Main Steam Header - Turb. Bldg.
TBM	Turbine Bldg. Mezzanine
TBB	Turbine Bldg. Basement
SB	Service Bldg.
SG	Safeguards Bldg.
FWH	Feedwater Header - Turb. Bldg.
ABB	Auxiliary Bldg. Basement
FBB	Fuel Bldg. Basement
AFW	Auxiliary Feedwater Pump House

NOTE: Numbers indicate radial locations in reactor containment.

*Snubbers may be added to and deleted from safety related systems without prior License Amendment to Tables 3.7-4a and 3.7-4b provided that a revision to Tables 3.7-4a and 3.7-4b is included with the next License Amendment request.

**Modifications to this table due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Tables 3.7-4a 3.7-4b is included with the next License Amendment request.

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.

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

All snubbers 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 months intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

3/4.7.11 SEALED SOURCE CONTAMINATION

The limitations on sealed source removable contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. Leakage of sources excluded from the requirements of this specification represent less than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.12 SETTLEMENT OF CLASS 1 STRUCTURES

In order to assure that settlement does not exceed predicted and allowable settlement values, a program has been established to conduct a survey of a specified number of points at the site on a semi-annual basis. The first survey was conducted in May 1976 to establish base-line elevations for most of the points. Where applicable, the base-line elevations of points established subsequent to the May 1976 survey have been adjusted to the May 1976 survey by an evaluation of the settlement records of settlement points on the same structure or on nearby structures. Baseline elevations for some points were established on dates other than May 1976 as indicated in Table 3.7-5. Additional surveys will be performed semiannually.[2] The determination of the elevation of the points shall be by precise leveling with second order Class II accuracy as defined by the U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1974. When any settlement point listed in Table 3.7-5 is inaccessible during a survey, comparison to allowable settlement shall be based on settlement of other points on the same structure or on nearby structures having similar foundation conditions. When any settlement point listed in Table 3.7-5 is dislocated or replaced, a documented review of the settlement records of points on the same structure and additionally points on nearby structures having similar foundation conditions shall provide a new reference elevation for the point that reflects the estimated settlement since the base-line survey. If the total settlement or differential settlement exceeds 75 percent of the allowable value, the frequency of surveillance shall be increased as dictated by the engineering review.

Allowable differential movement is controlled by pipe deflections permitted by fixation points in buildings. The items limiting differential settlement are as follows:

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS AND REPORTABLE OCCURRENCES

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

STARTUP REPORTS

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

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

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

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 listed on Tables 3.7-4a and 3.7-4b 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.

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

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 13
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 (the licensee) dated July 1, 1981 as supplemented by letter dated September 10, 1981, 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. 13 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective on November 20, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 5, 1981

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 13 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.

Pages

3/4 7-25
3/4 7-26a
3/4 7-26b
3/4 7-26c
3/4 7-26d
3/4 7-48a
3/4 7-49
B 3/4 7-6
B 3/4 7-6a
6-19

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.10 All snubbers listed in Tables 3.7-4a and 3.7-4b shall be OPERABLE.

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 all snubbers listed in Tables 3.7-4a and 3.7-4b. 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:

No. Inoperable Snubbers per Inspection Period	Subsequent Visual Inspection Period*#
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%

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.

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

SURVEILLANCE REQUIREMENTS (Continued)

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 reservior 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 $35\ [1 + \frac{c}{2}]$, 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 $35\ (1 + \frac{c}{2})\ (\frac{2}{c + 1})^2\ (a - c)$ 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 $b\ [35(1 + \frac{c}{2})^2]$ 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 in Table 3.7-4a and 3.7-4b have been functionally tested.

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 identified in Tables 3.7-4a and 3.7-4b as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.* Tables 3.7-4a and 3.7-4b 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.

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.

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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.

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.

At least once per 18 months, the installation and maintenance records for each snubber listed in Tables 3.7-4a and 3.7-4b 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

SURVEILLANCE REQUIREMENTS (Continued)

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 reevaluated 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.

TABLE 3.7-4b
SAFETY RELATED MECHANICAL SNUBBERS*

SNUBBER NO.	SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE DURING SHUTDOWN** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)

TABLES 3.7-4a AND 3.7-4b (Continued)

TABLE NOTATIONS

#LOCATION ABBREVIATIONS

Abbreviations	Area
A	Cubicle A
B	Cubicle B
C	Cubicle C
Pent.	Penetration Area Aux. Bldg.
P	Pressurizer Cubicle
RCA	Reactor Containment Annulus
RCB	Reactor Containment Basement
RCP	Reactor Containment Penetration Area
MSVH	Main Steam Valve House
AFPH	Aux. Feedwater Pump House
MSH	Main Steam Header - Turb. Bldg.
TBM	Turbine Bldg. Mezzanine
TBB	Turbine Bldg. Basement
SB	Service Bldg.
SG	Safeguards Bldg.
QS	Quench Spray Area
FWH	Feedwater Header - Turb. Bldg.
ABB	Auxiliary Bldg. Basement
FBB	Fuel Bldg. Basement
RHR	Residual Heat Removal Mezzanine

NOTE: Numbers indicate radial location in reactor containment.

*Snubbers may be added to and deleted from safety related systems without prior License Amendment to Tables 3.7-4a and 3.7-4b provided that a revision to Tables 3.7-4a and 3.7-4b is included with the next License Amendment request.

**Modifications to this table due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Tables 3.7-4a and 3.7-4b is included with the next License Amendment request.

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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.

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

All snubbers 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 months intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

BASES

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

c. Each REPORTABLE OCCURRENCE submitted to the Commission.

d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.

e. Records of changes made to Operating Procedures.

f. Records of radioactive shipments.

g. Records of sealed source leak tests and results.

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the Facility Operating License:

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 release to the environs.

f. Records of transient or operational cycles for those facility components identified in Table 5.7-1.

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 the service life of all hydraulic and mechanical snubbers listed on Tables 3.7-4a and 3.7-4b 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. _____.

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.

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 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.

*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 NO. 33 TO FACILITY OPERATING LICENSE NO. NPF-4

AND AMENDMENT NO. 13 TO FACILITY OPERATING LICENSE NO. NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

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

DOCKET NOS. 50-338 AND 50-339

Introduction:

To reflect the accumulated experience obtained from operating power plants, the NRC issued Revision 1 to the Standard Technical Specifications for surveillance requirements of safety-related snubbers. Revision 1 was transmitted to licensees of operating power plants on November 20, 1981 (excluding those plants under the Systematic Evaluation Program (SEP)). The November 20, 1981 NRC document also requested that licensees submit license amendment applications for incorporating the requirements of Revision 1 in plant-specific Technical Specifications. This same request was extended to the SEP plants on March 23, 1981.

By letter dated July 1, 1981 (Serial No. 293) and as supplemented by letter dated September 10, 1981 (Serial No. 520), the Virginia Electric and Power Company (the licensee) made applications to amend Operating Licenses No. NPF-4 and No. NPF-7 for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2) by incorporating the requirements of Revision 1 in the NA-1&2 Technical Specifications.

Discussion:

Numerous discoveries of inoperative snubbers during the period from 1973 to 1975 led to the inclusion of snubber surveillance requirements in the Technical Specifications of operating nuclear power plants. However, deficiencies were identified in the surveillance requirements after the original requirements had been in force for several years. These deficiencies are:

1. Mechanical snubbers were not included in the original requirements.

2. The rated capacity of snubbers was used as a limit to the inservice test requirement.

3. NRC approval was necessary for the acceptance of seal materials.

4. Inservice test requirements were not clearly defined.

5. In-place inservice testing was not permitted.

Since mechanical snubbers were not subject to any of the original surveillance requirements, some licensees thought that mechanical snubbers were preferred by the NRC. Many plants used mechanical snubbers as original equipment and others requested that hydraulic snubbers be replaced with mechanical snubbers in order to simplify or avoid an inservice surveillance program. This was not the intent of NRC, where for an unsurveyed mechanical snubber, the most likely failure will be permanent lock-up, and this failure mode can be harmful to safety-related systems during plant operations.

During the period from 1973 to 1975, when the first hydraulic snubber surveillance requirements were drafted, a limit was placed on the testing of snubbers to not more than 50,000 pounds of rated capacity. This limit was specified because of the available test equipment and the requirement to test certain parameters at snubber rated loads. Since then, a greater equipment test capacity and understanding of test parameters has been developed. Therefore, to maintain the 50,000 pound limit could cause an unnecessary compromise on plant safety.

The hydraulic snubber problem originated from leaking seals. Most seal materials of the 1973 vintage could not withstand the temperature and irradiation environments. Ethylene propylene was the first material that could offer a reasonable service life for those seals. In order to discourage the use of unproven material for those seals, the words "NRC approved material" were used in the Technical Specifications. Staff members were asked to approve different seal materials on many occasions. Consequently, since the basis for the approval was not defined, the development of better seal materials by the industry was actually discouraged.

The not-well-defined acceptance criteria in the earlier version of the testing requirements resulted in non-uniform interpretations and implementation. Acceptance Criteria were set individually at widely different ranges. Since the rationale of adopting a specific acceptance criterion was not clear, I&E inspectors found it difficult to make appropriate corrections.

The testing of snubbers in the past has been usually accomplished by removing snubbers from installed positions, mounting the snubbers on a test rig, conducting the test, removing the snubbers from the test rig and reinstalling in the working position. Many snubbers were damaged in this process which defeated the purpose for conducting the snubber tests. Methods and equipment have not been developed to conduct in-place tests on snubbers. These developments can provide cost savings by reducing the time required for testing and minimizing damage to snubbers.

For the reasons stated above it was concluded that the original snubber surveillance requirement should be revised.

Evaluation:

Revision 1 to the Standard Technical Specifications for snubber surveillance requirements address the above noted deficiencies in the following manner:

1. Mechanical snubbers are now included in the surveillance program.

2. No arbitrary snubber capacity is used as a limit to the inservice test requirements.

3. Seal material no longer requires NRC approval. A monitoring program shall be implemented to assure that snubbers are functioning within their service life.

4. Clearly defined inservice test requirements for snubbers shall be implemented.

5. In-place inservice testing shall be permitted.

Based on our review of the licensee's application, we find the licensee's submittal to be in conformance with the snubber surveillance requirements as stated in Revision 1. Therefore, we find the proposed changes to the NA-1&2 Technical Specifications to be acceptable.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Date: November 5, 1981

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-338 AND 50-339

VIRGINIA ELECTRIC AND POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments No. 33 and No. 13 to Facility Operating License Nos. NPF-4 and NPF-7 issued to the Virginia Electric and Power Company (the licensee) which revised Technical Specifications for operation of the North Anna Power Station, Units No. 1 and No. 2 (the facility) located in Louisa County, Virginia. The amendments are effective on November 20, 1981.

The amendments consist of changes to the Technical Specifications which revise the surveillance requirements for safety related snubbers. The changes are in conformance with the Commission's Revision 1 to the Standard Technical Specifications regarding inservice surveillance requirements for snubbers dated November 20, 1980.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since these amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of the amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated July 1, 1981 as supplemented September 10, 1981; (2) Amendment Nos. 33 and No. 13 to Facility Operating Licenses No. NPF-4 and NPF-7 and (3) the Commission's related Safety Evaluation. These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. 20555 and at the Board of Supervisor's Office, Louisa County Courthouse, Louisa, Virginia 23093 and at the Alderman Library, Manuscripts Department, University of Virginia, Charlottesville, Virginia 22901. A copy of items (2) and (3) may be obtained upon request to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland this 5th day of November, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing