January 22, 1993

Docket Nos. 50-280
and 50-281

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Mr. W. L. Stewart
Senior Vice President - Nuclear
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: ANCHOR DARLING MECHANICAL SNUBBERS (TAC NOS. M84468 AND M84469)

The Commission has issued the enclosed Amendment No. 173 to Facility Operating License No. DPR-32 and Amendment No. 172 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated September 4, 1992.

These amendments revise the TS to modify the acceptance criteria for functional testing of the Anchor Darling mechanical snubbers. In addition, other administrative changes have been made to provide consistency in terminology and to note that functional testing is in accordance with the approved inservice inspection program.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,
(Original Signed By)
Bart C. Buckley, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 173 to DPR-32
2. Amendment No. 172 to DPR-37
3. Safety Evaluation

cc w/enclosures: See next page

OFC	:LA:PDII-2	:PM:PDII-2	:D:PDII-2	:C:EMEB	:OGC	:
NAME	:E. Tana	:B. Buckley	:H. Berkow	:JNorberg	:	:
DATE	:12/30/92	:12/30/92	:1/15/93	:1/15/92	:1/22/93	:

OFFICIAL RECORD COPY - FILENAME: SU84468.AMD

CP-1

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Virginia Electric and Power Company

Surry Power Station

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DATED: January 22, 1993

AMENDMENT NO. 173 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1
AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File
NRC & Local PDRs
PDII-2 Reading
S. Varga, 14/E/4
G. Lainas, 14/H/3
H. Berkow
E. Tana
B. Buckley
OGC
D. Hagan, 3302 MNBB
G. Hill (8), P-137
Wanda Jones, MNBB-7103
C. Grimes, 11/F/23
ACRS (10)
OPA
OC/LFMB
M. Sinkule, R-II

29:100

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 173
License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated September 4, 1992, 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 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 173 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 22, 1993

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 172
License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated September 4, 1992, 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 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

   (B) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 172 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 22, 1993

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 173 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages	Insert Pages
TS 4.17-1	TS 4.17-1
TS 4.17-3	TS 4.17-3
TS 4.17-4	TS 4.17-4
TS 4.17-5	TS 4.17-5
TS 4.17-8	TS 4.17-8

4.17 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to all hydraulic and mechanical shock suppressors (snubbers) which are required to protect the Reactor Coolant System and other safety-related systems. Snubbers excluded from this inspection are those installed on non-safety-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.

Objective

To specify the minimum frequency and type of surveillance to be applied to the hydraulic and mechanical snubbers required to protect the Reactor Coolant System and other safety-related systems.

Specification

Each snubber shall be demonstrated OPERABLE by performing the following augmented inservice inspection program and the requirements of Specification 4.0.3. As used in this specification, "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity.

A. Visual Inspections

1. Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table 4.17-1. The visual inspection interval of each category of snubber shall be determined based upon the criteria provided in Table 4.17-1.

4. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the action requirements of Specification 3.20 shall be met.

C. Functional Tests

1. At least once per 18 months during shutdown, a representative sample of 10% of the total of each type of snubber used in the plant shall be functionally tested using either an in-place test machine or a bench test.

2. The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. This representative sample shall not, to the extent practicable, include those snubbers tested in a previous representative sample.

3. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

   a. the first snubber away from each reactor vessel nozzle,

   b. snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc), and

   c. snubbers within 10 feet of the discharge from a safety relief valve.

4. Snubbers identified as "Especially Difficult to Remove" or in "High Radiation Zone During Shutdown" shall also be included in the representative sample.*

5. 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 resampling.

6. For each snubber that does not meet the functional acceptance criteria of Specification 4.17.D or 4.17.E, an additional 10% of that type of snubber shall be functionally tested.

7. For snubbers of 50 kips and above that are extremely difficult to remove or in high radiation zones that fail the functional testing, an engineering evaluation is required to determine the failure mode. If the failure is determined to be non-generic, an additional 10% of that type will be tested during the next functional test period.

8. 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.

9. For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by 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 designed service.

D. Hydraulic Snubbers Functional Test Acceptance Criteria

1. The hydraulic snubber functional test shall verify that:

   a. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

   b. Snubber bleed, or release rate, where required, is within the specified range in compression and 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

1. The mechanical snubbers functional test shall verify that:

   a. The drag force of the snubber in both tension and compression is less than the specified maximum drag force.

   b. Activation (restraining action) is achieved within the specified range of velocity in both tension and compression.

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. Functional testing is to be in accordance with the ASME Section XI Inservice Inspection program approved by the NRC. Observed failures of these sample snubbers shall require functional testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.

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.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 173 TO FACILITY OPERATING LICENSE NO. DPR-32

AND AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-280 AND 50-281

1.0 INTRODUCTION

Pursuant to 10 CFR 50.90, by letter dated September 4, 1992, the Virginia Electric and Power Company (the licensee) requested a revision to the Technical Specifications (TS) Section 4.17 of Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Units 1 and 2, respectively. This proposed revision would modify the acceptance criteria for functional testing of the Anchor Darling mechanical snubbers. In addition, other administrative changes are being proposed to provide consistency in terminology and to note that functional testing is in accordance with the approved inservice inspection program.

2.0 BACKGROUND

Both hydraulic and mechanical snubbers are installed at the Surry Power Station (SPS). The TS require periodic testing of the hydraulic and mechanical snubbers to confirm operability by satisfying the appropriate acceptance criteria as currently defined in the TS. During the last several refueling outages, the licensee has replaced the originally installed Pacific Scientific mechanical snubbers with Anchor Darling mechanical snubbers. Since the Anchor Darling mechanical snubbers operate in a different manner than the Pacific Scientific mechanical snubbers, the existing TS acceptance criteria for functional testing of the mechanical snubbers are not applicable to the Anchor Darling mechanical snubbers for operability determinations.

3.0 EVALUATION

The existing acceptance criteria for functional testing (Technical Specification 4.17.E) require that: 1) the force that initiates free movement of the snubber rod in either tension or compression is less than the maximum drag force, and 2) the drag force shall not have increased by more than 50% since the last functional test. The originally installed Pacific Scientific mechanical snubber was an acceleration limiting device that utilized a mass inside the snubber to limit acceleration during sudden movements or seismic

disturbances. The breakaway drag force (the force that initiates free movement) was measured for the Pacific Scientific mechanical snubbers to demonstrate free movement. The Anchor Darling DynaDamp snubber is a velocity limiting device that utilizes an oscillatory type escapement mechanism to restrict pipe movement at a constant velocity. The snubber is always engaged and resists movement proportional to velocity. Thus, there is no "free movement." Consequently, the drag force that is required to maintain the snubber movement at a constant velocity is a more meaningful measure of the snubber's ability to move with the piping without imposing undue restraint. Secondly, due to the difference in the functional mechanisms of their snubbers, a 50% relative increase in drag force is not a meaningful criterion for determining operability of Anchor Darling snubbers. Since the measured drag force can be highly variable from test to test, a 50% relative increase in measured drag force may only be indicative of measurement or test uncertainty. The absolute value of the drag force, as compared to a specified maximum acceptable value, is a much better indicator of snubber performance.

Technical Specification 4.17.C.6 requires that for each snubber which fails to meet the functional test acceptance criteria (less than 50% increase in drag force) of Technical Specification 4.17.E, an additional 10% of that type of snubber be functionally tested. Verbatim compliance with the TS requirements would require additional functional testing of a 10% sample of the Anchor Darling mechanical snubbers based on an inappropriate and non-applicable acceptance criteria.

3.1 Proposed changes to the TS

The following Technical Specification changes are being proposed to Technical Specification 4.17:

- Change the word "type" to "category" in Technical Specification 4.17.A.1 for consistent terminology.

- Change the word "category" to "type" in Technical Specification 4.17.C.7 for consistent terminology.

- Modify the mechanical snubber functional testing acceptance criterion in Technical Specification 4.17.E. to require that "the drag force in both tension and compression is less than the specified maximum drag force."

- Clarify the Basis to identify that functional testing is performed in accordance with the approved Inservice Inspection Program rather than the general reference to the ASME Code.

- Modify the wording of Technical Specification 4.17.C.1 to be more definitive.

- Capitalize defined words and system names.

4.0 SUMMARY

The staff has reviewed the licensee's proposed revision to TS Section 4.17 and finds it to be acceptable.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendments. The State official had no comment.

6.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve 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 (57 FR 47142). 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 these amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: B. Buckley

Date: January 22, 1993