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V. Stello, OR
B. Grimes, OR
J. McGough, OR
D. Eisenhut, OR
T. Wambach, OR
A. Schwencer, OR
R. Diggs (w/o tech. specs)

JUN 23 1978

D. Swanson, ELD
R. S. Boyd
R. C. DeYoung
D. B. Massallo
O. Parr
A. Dromerick
M. Rushbrook
F. Williams
D. Crutchfield
Lana Cobb
I&E (5)
N. Dube, MPA (w/o tech. specs)
M. Jinks, OA (w/4 enc.)
R. Diggs (w/o tech. specs)

Docket No. 50-338

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
P. O. Box 26666
Richmond, Virginia 23261

Gentlemen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 6 TO FACILITY OPERATING LICENSE NPF-4
NORTH ANNA POWER STATION UNIT NO. 1

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 6 to Facility Operating License NPF-4.

This amendment approves your request to revise Technical Specification 4.5.2.f.2 to specify a minimum acceptance pressure at recirculation flow for the low-head safety injection pumps of greater than or equal to 156 pounds per square inch gauge. This amendment also specifies in Technical Specification 4.6.2.2.1.b the value for the casing cooling pump discharge acceptance pressure. This pressure was determined in the final testing of the casing cooling subsystem.

A copy of the Federal Register Notice concerning issuance of Amendment No. 6 and the related Safety Evaluation supporting Amendment No. 6 to Facility Operating License No. NPF-4 are enclosed.

Sincerely,

Original Signed by
O. D. Parr
Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

Enclosures:

1. Amendment No. 1 to License No. NPF-4
2. Safety Evaluation
3. Federal Register Notice

bcc: J. Buchanan, NSIC
T. Abernathy, TIC
A. Rosenthal, ASLAB
J. Yore, ASLBP
ACRS (16)

ccs w/enclosures:

OFFICE	see page 2 LWR #3:LA	LWR #3:PM	LWR #3:BC	DOR	J. G. ADERG
SURNAME	MRushbrook:ch	Dromerick	OParr	JMcGough	OELD
DATE	6/19/78	6/20/78	6/23/78	6/20/78	6/23/78

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
P. O. Box 26666
Richmond, Virginia 23261

-2-

June 23, 1970

cc: Mrs. James C. Arnold
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Charlottesville, Virginia 22903

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Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. R. B. Briggs
Associate Director
110 Evans Lane
Oak Ridge, Tennessee 37830

June 23, 1978

cc: Mr. A. D. Johnson, Chairman
Board of Supervisors of
Louisa County
Trevillians, Virginia 23170

Ms. Susan T. Wilburn
Commonwealth of Virginia
Council on the Environment
903 9th Street Office Building
Richmond, Virginia 23219

Mr. George Pence
U. S. Environmental Protection Agency
Region III Office
Curtis Building
6th & Walnut Streets
Philadelphia, Pennsylvania 19106

Director, Technical Assessment Division
Office of Radiation Programs (AW-459)
US EPA
Crystal Mall #2
Arlington, Virginia 20460

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

FACILITY OPERATING LICENSE

License No. NPP-4
Amendment No. 6

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The applications for amendment by Virginia Electric and Power Company (the licensee), dated April 24, 1978, and May 18, 1978, comply 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 license, as amended, 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.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

2. Accordingly, the license is amended to read as specified below:

a. Add the following after 2.D(2).f:

2.D.(2)g. Revised pages 3/45-5, 3/45-6, and 3/4 6-12 a to Appendix A of the Technical Specifications issued with Amendment 6 of Facility Operating license NPF-4 and attached thereto becomes a part of the license.

H. This amended license is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by
O. D. Parr

Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

Enclosure:
Appendix A Technical
Specification page changes

Date of Issuance: JUN 23 1978

OFFICE	LWR #3:LA	LWR #3:PM	OELD <i>SY</i>	LWR #3:BC	DOR
SURNAME	MRushbrook:ch	Mr. Merick	S. GLOBERG	OParr	JMcGough
DATE	6/19/78	6/20/78	6/23/78	6/23/78	6/20/78



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

FACILITY OPERATING LICENSE

License No. NPF-4
Amendment No. 6

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The applications for amendment by Virginia Electric and Power Company (the licensee), dated April 24, 1978, and May 18, 1978, comply 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 license, as amended, 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.

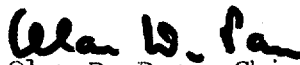
2. Accordingly, the license is amended to read as specified below:

a. Add the following after 2.D(2).f:

2.D.(2)g. Revised pages 3/45-5, 3/45-6, and 3/4 6-12 a
to Appendix A of the Technical Specifications issued
with Amendment 6 of Facility Operating license NPF-4
and attached thereto becomes a part of the license.

H. This amended license is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

Enclosure:

Appendix A Technical
Specification page changes

Date of Issuance: JUN 23 1978

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 6 TO LICENSE NO. NPF-4

(VIRGINIA ELECTRIC AND POWER COMPANY)

A. Evaluation of Request to Change Technical Specification 4.5.2.f.2
Concerning the Minimum Acceptance Pressure for the Low Head Safety
Injection Pumps during Periodic Surveillance Testing

In a letter dated April 24, 1978, the Virginia Electric Power Company requested a change in the Technical Specifications for North Anna Power Station, Unit No. 1 dealing with the minimum acceptance pressure for the low head safety injection pumps during periodic surveillance testing at recirculation flow conditions. They proposed a reduction in the minimum acceptance pressure to 156 pounds per square inch gauge because of a change in the pump performance curve due to recent modifications to the low head safety injection pumps.

In a letter dated May 18, 1978, the licensee presented a new performance curve for the low head safety injection pumps based on tests performed on similar pumps in Unit 2. These "as installed" performance curves are above the design curve used for emergency core cooling system performance analysis and thus provide assurance that the pumps will deliver the minimum required emergency core cooling system flow (approximately 3000 gallons per minute). The new performance curve is below the original only at low flow rates (which are not of interest).

At the surveillance test recirculation flow rate of 250 gallon per minute, the proposed acceptance pressure (156 pounds per square inch gauge) is higher than the design curve used for emergency core cooling system performance analysis and therefore acceptable.

We conclude that the proposed revision to Technical Specification 4.5.2.f.2 is acceptable because it provides a satisfactory basis for demonstrating pump performance provided the corresponding recirculation flow rate is above the design curve used for the emergency core cooling system performance analysis presented in the Virginia Electric and Power Company's letter of May 18, 1978.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

B. Environmental Consideration

We have determined that the amendment does 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 amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR Section 51.5(d)(4), that an environmental statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

C. Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered or a significant decrease in any safety margin, it does 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public. Also, we reaffirm our conclusions as otherwise stated in our Safety Evaluation Report and its Supplements.

Original Signed By:

A. Dromerick

Alexander W. Dromerick, Project Manager
Light Water Reactors Branch No. 3
Division of Project Management

Original Signed by:

O. D. Parr

Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

Date of Issuance: JUN 23 1978

OFFICE ➤	LWR #3:PM	OELD	LWR #3:BC			
SURNAME ➤	ADromerick:ch	S. GUARDING	OParr			
DATE ➤	6/20/78	6/23/78	6/23/78			

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-338

VIRGINIA ELECTRIC AND POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 6 to the Facility Operating License No. NPF-4, issued to Virginia Electric and Power Company, which revises Technical Specification 4.5.2.f.2 contained in Appendix A to the Technical Specification. The amendment is effective as of its date of issuance.

The Amendment revises Appendix A Technical Specification 4.5.2.f.2 to specify a minimum acceptance pressure at recirculation flow by the low-head safety injection pumps of greater than or equal to 156 pounds per square inch gauge, specifies the value for the casing cooling pump discharge acceptance pressure and makes appropriate page changes to maintain document completeness.

The application for the amendment 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 amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

The Commission has determined that the amendment does 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, it has further been concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 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 this amendment.

For further details with respect to this action, see (1) Virginia Electric and Power Company letters, dated April 24, 1978 and May 18, 1978; (2) Amendment No. 6 to License No. NPF-4 with Appendix A Technical Specification page changes, and (3) the Commission's related Safety Evaluation. All of 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 addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management, Office of Nuclear Reactor Regulation.

Dated at Bethesda, Maryland this 23rd day of June, 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by
JUN 23 1978

Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

OFFICE ➤	LWR #3: LA	LWR #3: PA	LWR #3: BC	DOR	OELO	
SURNAME ➤	MRushnok:ch	ADhomercik	OParr	JMcGough	SGOLDBERG	
DATE ➤	6/19/78	6/20/78	6/23/78	6/20/78	6/23/78	

ATTACHMENT TO LICENSE AMENDMENT NO. 6

FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace pages 3/4 5-5 and 3/4 6-12a of the Appendix "A" Technical Specifications with the attached pages. Page 3/4 5-6 is provided to maintain document completeness. Page 3/4 7-75 and its corresponding overleaf page 3/4 7-76 are also provided to correct a typographical error.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:
 - a) Centrifugal charging pump, and
 - b) Low head safety injection pump.
- f. By verifying that each of the following pumps develop the indicated discharge pressure (after subtracting suction pressure) on recirculation flow when tested pursuant to Specification 4.0.5.
 1. Centrifugal charging pump \geq 2410 psig.
 2. Low head safety injection pump \geq 156 psig
- g. At least once per 18 months, during reactor shutdown, verify that the following manual valves requiring adjustment to prevent pump "runout" and subsequent component damage are locked and tagged in the proper position for injection:
 1. 1-SI-188 Loop A Cold Leg
 2. 1-SI-191 Loop B Cold Leg
 3. 1-SI-193 Loop C Cold Leg
 4. 1-SI-203 Loop A Hot Leg
 5. 1-SI-204 Loop B Hot Leg
 6. 1-SI-205 Loop C Hot Leg

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - $T_{avg} < 350^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:

- a. One OPERABLE centrifugal charging pump,
- b. One OPERABLE low head safety injection pump, and
- c. An OPERABLE flow path capable of transferring fluid to the reactor coolant system when taking suction from the refueling water storage tank upon being manually realigned or from the containment sump when the suction is transferred during the recirculation phase of operation or from the discharge of the outside recirculation spray pump.

APPLICABILITY: MODE 4.

ACTION:

- a. With no ECCS subsystem OPERABLE because of the inoperability of either the centrifugal charging pump or the flow path from the refueling water storage tank, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours.
- b. With no ECCS subsystem OPERABLE because of the inoperability of the low head safety injection pump, restore at least one ECCS subsystem to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods.
- c. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

SURVEILLANCE REQUIREMENTS

4.5.3 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.

CONTAINMENT SYSTEMS

CONTAINMENT RECIRCULATION SPRAY SYSTEM

SURVEILLANCE REQUIREMENTS

4.6.2.2.1 Each containment recirculation spray subsystem and casing cooling subsystem shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.
- b. Verifying, that on recirculation flow, each outside recirculation spray pump develops a discharge pressure of ≥ 115 psig and each casing cooling pump develops a discharge pressure of 58 psig when tested pursuant to Specification 4.0.5.
- c. At least once per 18 months by:
 1. Verifying that on a Containment Pressure--High-High signal, each casing cooling pump starts automatically without time delay, and each recirculation spray pump starts automatically with the following time delays: inside 195 ± 9.75 seconds, outside 210 ± 21 seconds.
 2. Verifying that each automatic valve in the flow path actuates to its correct position on a containment pressure high-high test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

4.6.2.2.2 The casing cooling tank shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Verifying the contained borated water volume in the tank, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the casing cooling tank temperature.

PLANT SYSTEMS

3/4.7.14 FIRE SUPPRESSION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.14.1 The fire suppression water system shall be OPERABLE with;

- a. Two high pressure pumps, each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header,
- b. Separate water supplies from the North Anna Reservoir and the Service Water Reservoir, and
- c. An OPERABLE flow path capable of taking suction from the North Anna Reservoir and the Service Water Reservoir and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves and the valve at each hose standpipe as required to be OPERABLE per Specification 3.7.14.5.

APPLICABILITY: At all times.

ACTION:

- a. With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the plans and procedures to be used to provide the loss of redundancy in this system. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- b. With the fire suppression water system otherwise inoperable:
 1. Establish a backup fire suppression water system within 24 hours, and
 2. Submit a Special Report in accordance with Specification 6.9.2;
 - a) By telephone within 24 hours,
 - b) Confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event, and

PLANT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

- c. In writing within 14 days following the event, outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.14.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. By verifying the contained water supply volumes pursuant to Specification 4.7.5.1.
- b. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow.
- c. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path is in its correct position.
- d. By performance of a system flush as necessary to maintain the system water chemistry within acceptable limits.
- e. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- f. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
 - 1. Verifying that each automatic valve in the flow path actuates to its correct position,
 - 2. Verifying that each pump develops at least 2500 gpm at a system head of \geq 250 feet for 1-FP-P-1 and 187 feet for 1-FP-P-2.
 - 3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 - 4. Verifying that each high pressure pump starts (sequentially) to maintain the fire suppression water system pressure \geq 80 psig in the main fire loop.