

Docket Nos. 50-280
and 50-281

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

Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: OPPOSITE TRAIN
SURVEILLANCE TESTING REQUIREMENTS (TAC NOS. M81746 AND M81747)

The Commission has issued the enclosed Amendment No. 167 to Facility Operating License No. DPR-32 and Amendment No. 166 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 20, 1991.

These amendments delete requirements for testing components prior to initiating maintenance on inoperable components in the safety injection, containment spray, recirculation spray, and auxiliary ventilation exhaust systems. With regard to the emergency diesel generators (EDGs), the redundant train testing requirement is not deleted. Instead, a limit is specified for the amount of time an EDG may be rendered inoperable for such testing. Typographical errors are also corrected on pages TS 3.3-6, TS 3.4-2 and TS 3.16-4. Finally, one clarifying change has been made to page TS 3.16-4.

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

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Enclosures:

1. Amendment No. 167 to DPR-32
2. Amendment No. 166 to DPR-37
3. Safety Evaluation

cc w/enclosures:
See next page

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OFC	: LA: PDII-2	: PM: PDII-2	: C: OTSB	: C: EMBB	: C: SELB	: D: PDII-2	: OGC
NAME	: <i>DM</i>	: BBuckley.kdj	: CGrimes	: JNorberg	: FRosa	: HBerkow	: JHull
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Virginia Electric and Power Company

Surry Power Station

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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. 167
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 20, 1991, 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. 167, 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: March 2, 1992



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. 166
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 20, 1991, 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.

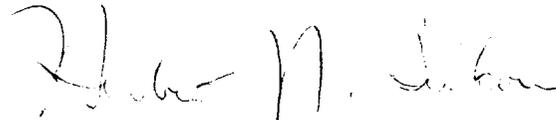
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 166, 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: March 2, 1992

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 167 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 166 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

TS 3.3-4
TS 3.3-5
TS 3.3-6
TS 3.3-7
TS 3.4-2
TS 3.4-3
TS 3.16-2
TS 3.16-4
TS 3.22-1

Insert Pages

TS 3.3-4
TS 3.3-5
TS 3.3-6
TS 3.3-7
TS 3.4-2
TS 3.4-3
TS 3.16-2
TS 3.16-4
TS 3.22-1

B. The requirements of Specification 3.3-A may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored to meet the requirements of Specification 3.3-A within the time period specified, the reactor shall initially be placed in the shutdown condition. If the requirements of Specification 3.3-A are not satisfied within an additional 48 hours the reactor shall be placed in cold shutdown condition.

1. One accumulator may be isolated for a period not to exceed 4 hours.
2. Two charging pumps per unit may be out of service, provided immediate attention is directed to making repairs and one pump is restored to operable status within 24 hours.
3. One low head safety injection subsystem per unit may be out of service, provided immediate attention is directed to making repairs and the subsystem is restored to operable status within 24 hours.
4. One channel of heat tracing may be inoperable for a period not to exceed 24 hours, provided immediate attention is directed to making repairs.

5. One charging pump component cooling water pump or one charging pump service water pump may be out of service provided the pump is restored to operable status within 24 hours.
6. One charging pump intermediate seal cooler or other passive component may be out of service provided the system may still operate at 100 percent capacity and repairs are completed within 48 hours.
7. Power may be restored to any valve referenced in Specifications 3.3.A.8 and 3.3.A.9 for the purpose of valve testing or maintenance provided that no more than one valve has power restored and provided that testing and maintenance is completed and power removed within 24 hours.
8. Power may be restored to any valve referenced in Specification 3.3.A.10 for the purpose of valve testing or maintenance provided that no more than one valve has power restored and provided that testing and maintenance is completed and power removed within 4 hours.
9. The total uncollected system leakage for valves, flanges, and pumps located outside containment can exceed the limit stated in Technical Specification 4.11.A.4.d provided immediate attention is directed to making repairs and system leakage is returned to within limits within 7 days.

Basis

The normal procedure for starting the reactor is, first, to heat the reactor coolant to near operating temperature by running the reactor coolant pumps. The reactor is then made critical by withdrawing control rods and/or diluting boron in the coolant. With this mode of startup the Safety Injection System is required to be operable as specified. During low power physics tests there is a negligible amount of energy stored in the system; therefore an accident comparable in severity to the Design Basis Accident is not possible, and the full capacity of the Safety Injection System is not required.

The operable status of the various systems and components is to be demonstrated by periodic tests, detailed in TS Section 4.1. A large fraction of these tests are performed while the reactor is operating in the power range. If a component is found to be inoperable, it will be possible in most cases to effect repairs and restore the system to full operability within a relatively short time. A single component being inoperable does not negate the ability of the system to perform its function, but it reduces the redundancy provided in the reactor design and thereby limits the ability to tolerate additional equipment failures. In some cases, i.e. charging pumps, additional components are installed to allow a component to be inoperable without affecting system redundancy.

If the inoperable component is not repaired within the specified allowable time period, or a second component in the same or related system is found to be inoperable, the reactor will initially be put in the hot shutdown condition to provide for reduction of the decay heat from the fuel, and consequent reduction of cooling requirements after a postulated loss-of-coolant accident. After 48 hours in the hot shutdown condition, if the malfunction(s) are not corrected the reactor will be placed in cold shutdown condition, following normal shutdown and cooldown procedures.

The Specification requires prompt action to effect repairs of an inoperable component or subsystem, and therefore in most cases repairs will be completed in less than the specified allowable repair times. Furthermore, the specified repair times do not apply to regularly scheduled maintenance of the Safety Injection System, which is normally to be performed during refueling shutdowns. The limiting times for repair are based on: estimates of the time required to diagnose and correct various postulated malfunctions using safe and proper procedures, the availability of tools, materials and equipment; health physics requirements and the extent to which other systems provide functional redundancy to the system under repair.

Assuming the reactor has been operating at full rated power for at least 100 days, the magnitude of the decay heat production decreases as follows after initiating hot shutdown.

<u>Time After Shutdown</u>	<u>Decay Heat, % of Rated Power</u>
1 min.	3.7
30 min.	1.6

2300* ppm and not greater than 2500* ppm which will assure that the reactor is in the refueling shutdown condition when all control rod assemblies are inserted.

4. The refueling water chemical addition tank shall contain not less than 4,200 gal of solution with a sodium hydroxide concentration of not less than 17 percent by weight and not greater than 18 percent by weight.
5. All valves, piping, and interlocks associated with the above components which are required to operate under accident conditions shall be operable.
6. The total uncollected system leakage from valves, flanges, and pumps located outside containment shall not exceed the limit specified by Technical Specification 4.5.B.4.

B. During power operation the requirements of Specification 3.4-A may be modified to allow a subsystem or the following components to be inoperable. If the components are not restored to meet the requirements of Specification 3.4-A within the time period specified below, the reactor shall be placed in the hot shutdown condition within the next 6 hours. If the requirements of Specification 3.4-A are not satisfied within an additional 48 hours the reactor shall be placed in the cold shutdown condition using normal operating procedures.

* These limits apply to Cycle 12 and subsequent cycles for Unit 1, and to Cycle 11 and subsequent cycles for Unit 2. For prior operating cycles, boron concentration shall be at least 2000 ppm and not greater than 2500 ppm.

1. One Containment Spray Subsystem may be out of service, provided immediate attention is directed to making repairs and the subsystem can be restored to operable status within 24 hours.
2. One outside Recirculation Spray Subsystem may be out of service provided immediate attention is directed to making repairs and the subsystem can be restored to operable status within 24 hours.
3. One inside Recirculation Spray Subsystem may be out of service provided immediate attention is directed to making repairs and the subsystem can be restored to operable status within 72 hours.
4. The total uncollected system leakage from valves, flanges, and pumps located outside containment can exceed the limit stated in Technical Specification 4.5.B.4 provided immediate attention is directed to making repairs and system leakage is returned to within limits within 7 days.

4. Two physically independent circuits from the offsite transmission network to energize the 4,160 and 480V emergency buses. One of these sources must be immediately available, i.e. primary source; and the other must be capable of being made available within 8 hours; i.e. dependable alternate source.
 5. Two operable flow paths for providing fuel to each diesel generator.
 6. Two station batteries, two chargers, and the DC distribution systems operable.
 7. Emergency diesel generator battery, charger and the DC control circuitry operable for the unit diesel generator and for the shared back-up diesel generator.
 8. The requirements of Specifications A.1, A.2, A.5, A.6, A.7, and A.3 (for the 480V power supply for the auxiliary feedwater cross-connect valves) met for the opposite unit. In addition, one of the two physically independent circuits from the offsite transmission network must energize the opposite unit's emergency buses.
- B. During power operation or the return to power from hot shutdown conditions, the requirements of specification 3.16-A may be modified by one of the following:
- 1.a. With either unit's dedicated diesel generator or shared backup diesel generator unavailable or inoperable:
 1. Verify the operability of two physically independent offsite AC circuits within one hour and at least once per eight hours thereafter.
 2. If the diesel generator became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the operability of the remaining operable diesel generator daily. For the purpose of operability testing, the second diesel generator may be inoperable for a total of two hours per test provided the two offsite AC circuits have been verified operable prior to testing.
 3. If this diesel generator is not returned to an operable status within 7 days, the reactor shall be brought to hot shutdown within the next 6 hours and cold shutdown within the following 30 hours.
 - 1.b. One diesel fuel oil flow path may be "inoperable" for 24 hours provided the other flow is proven operable. If after 24 hours, the inoperable flow path cannot be returned to service, the diesel shall be considered "inoperable." When the emergency diesel generator battery, charger or DC control circuitry is inoperable, the diesel shall be considered "inoperable."

ratings for accident conditions, require approximately 2,320 kw. Each unit has two emergency buses, one bus in each unit is connected to its exclusive diesel generator. The second bus in each unit will be connected to the backup diesel generator as required. Each diesel generator has 100 percent capacity and is connected to independent 4,160 v emergency buses. These emergency buses are normally fed from the reserve station service transformers. The normal station service transformers are fed from the unit isolated phase bus at a point between the generator terminals and the low voltage terminal of the main step-up transformer. The reserve station service transformers are fed from the system reserve transformer in the high voltage switchyard. The circuits which supply power through either system reserve transformer are called "primary source." In the event a system reserve transformer is inoperable, the remaining one may be cross-tied by a 34.5 bus to all three reserve station service transformers. Thus, a primary source is available to both units even if one of the two system reserve transformers is out of service. Verification of primary source operability is performed by confirming that the reserve station service transformers are energized.

In addition to the "primary sources," each unit has an additional off-site power source which is called the "dependable alternate source." This source can be made available in eight (8) hours by removing a unit from service, disconnecting its generator from the isolated phase bus, and feeding offsite power through the main step-up transformer and normal station service transformers to the emergency buses.

The generator can be disconnected from the isolated phase bus within eight (8) hours. A unit can be maintained in a safe condition for eight (8) hours with no off-site power without damaging reactor fuel or the reactor coolant pressure boundary.

Verification of the dependable alternate source operability is accomplished by verifying that the required circuits, transformers, and circuit breakers are available.

3.22 AUXILIARY VENTILATION EXHAUST FILTER TRAINS

Applicability

Applies to the ability of the safety-related system to remove particulate matter and gaseous iodine following a LOCA or a refueling accident.

Objective

To specify requirements to ensure the proper function of the system.

Specification

- A. Whenever either unit's Reactor Coolant System temperature and pressure is greater than 350°F and 450 psig, respectively, two auxiliary ventilation exhaust filter trains shall be operable with:
 - 1. Two filter exhaust fans;
 - 2. Two HEPA filter and charcoal adsorber assemblies.
- B. With one train of the exhaust filter system inoperable for any reason, return the inoperable train to an operable status within 7 days or be in at least Hot Shutdown within the next 6 hours and in Cold Shutdown within the following 48 hours.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE NO. DPR-32
AND AMENDMENT NO. 166 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

By letter dated September 20, 1991, pursuant to 10 CFR 50.90, Virginia Electric and Power Company (VEPCO, the licensee), proposed to amend Facility Operating Licenses Nos. DPR-32 and DPR-37 for the Surry Power Station, Units 1 and 2. The proposed changes to the Surry, Units 1 and 2 Technical Specifications (TS) would delete requirements for testing components prior to initiating maintenance on inoperable components in the safety injection, containment spray, recirculation spray, and auxiliary ventilation exhaust systems described in the Surry TS. With regard to the emergency diesel generators (EDGs), the redundant train testing requirement would not be deleted. However, a limit would be specified for the amount of time an EDG may be rendered inoperable for such testing. Typographical errors would also be corrected on pages TS 3.3-6, TS 3.4-2, and TS 3.16-4. Also, the correct nomenclature, "system reserve transformer," would replace the obsolete term, "autotransformer," on page TS 3.16-4.

2.0 DISCUSSION

The following changes would be made to the Surry TS:

A. Limiting Conditions for Operation (LCO) - 3.3 - Safety Injection System

TS Section 3.3.B is modified to eliminate the opposite train testing requirement for the low head safety injection system. Through use of the term "subsystem," TS Sections 3.3.B.3 and 3.3.B.4 are combined and the subsequent section renumbered. The TS Bases is upgraded to reflect the above changes.

B. LCO - 3.4 - Spray Systems

TS Section 3.4.B is modified to clearly define the LCO by using time requirements for the containment and recirculation spray subsystems which align with Standard Technical Specifications (STS) phraseology. The opposite train testing requirements for these subsystems are also deleted.

C. LCO - 3.22 - Auxiliary Ventilation Exhaust Filter Trains

TS Section 3.22.B is modified to eliminate the opposite train testing requirement for the auxiliary ventilation exhaust filter trains.

D. LCO - 3.16 - Emergency Power System

TS Section 3.16.B is modified to clearly define the LCO by using time requirements for the EDGs which align with the STS phraseology. This change includes a provision for allowing an EDG to be inoperable less than or equal to 2 hours per operability test. However, in order to utilize this provision, two offsite AC circuits must be verified operable prior to testing. The TS Bases is also upgraded to reflect the above change.

3.0 SUMMARY

For the components cited in paragraph 2.0 above, the current Surry TS require opposite train testing prior to conducting a surveillance test or repair of the redundant component. Under these circumstances, both components must be declared inoperable and the licensee must enter a 6-hour action statement as required by TS 3.0.1. The NRC finds that the current opposite train testing requirements have the potential for increasing accident consequences due to the inability to perform a mitigating function since both trains have been rendered inoperable, i.e., one due to failure and the other due to surveillance testing. Elimination of these requirements provides added assurance that one train of safety equipment is available to mitigate the consequences of a design basis accident. The NRC staff, therefore, concludes that elimination of the requirement for opposite train testing of the components described in items A, B and C of paragraph 2.0 is acceptable.

In the case of the EDGs, where opposite train testing is required, allowing two EDGs to be inoperable for 2 hours, provided the licensee verifies that two off-site AC circuits are operable prior to opposite train testing, is acceptable. This short period of inoperability is used to determine whether or not a common mode failure is involved.

The other proposed TS changes cited in paragraph 1.0 are administrative and are, therefore, acceptable.

4.0 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.

5.0 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 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no