VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 16, 1999

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 99-032
SPS-LIC/CGL R0'
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
PROPOSED TECHNICAL SPECIFICATIONS AND BASES CHANGE - CONSOLIDATION OF AUXILIARY FEEDWATER CROSS-CONNECT REQUIREMENTS BY RELOCATION OF ELECTRICAL POWER REQUIREMENTS

Pursuant to 10CFR50.90, Virginia Electric and Power Company requests amendments, in the form of revisions to the Technical Specifications to Facility Operating License Numbers DPR-32 and DPR-37 for Surry Power Station Units 1 and 2. The proposed administrative change will consolidate the auxiliary feedwater cross-connect requirements by relocation of the electrical power requirements from Technical Specification (TS) 3.16 to TS 3.6. Also incorporated in this submittal are other minor administrative revisions. A discussion of the proposed Technical Specifications and Bases change is provided in Attachment 1.

The proposed administrative Technical Specifications and Bases change has been reviewed and approved by the Station Nuclear Safety and Operating Committee and the Management Safety Review Committee. It has been determined that the proposed Technical Specifications and Bases change does not involve an unreviewed safety question, as defined in 10CFR50.59. Marked-up Technical Specifications that reflect the proposed change are provided in Attachment 2. Revised Technical Specifications and Bases that incorporate the proposed change are provided in Attachment 3. The basis for our determination that the Technical Specifications change does not involve a significant hazards, as defined in 10CFR50.92, is provided in Attachment 4.

Should you have any questions or require additional information, please contact us.

Very truly yours,

D. A. Christian
Vice President – Nuclear Operations

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Attachments:
1. Discussion of Change
2. Mark-up of Technical Specifications and Bases
3. Proposed Technical Specifications and Bases Change
4. Significant Hazards Consideration Determination

Commitments made in this letter: None.

cc: U.S. Nuclear Regulatory Commission
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Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

Commissioner
Department of Radiological Health
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COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by D. A. Christian, who is Vice President - Nuclear Operations, for J. P. O'Hanlon, who is Senior Vice President - Nuclear, of Virginia Electric and Power Company. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 16th day of February, 1999.

My Commission Expires: March 31, 2000.

Maggie McCluse
Notary Public

(SEAL)

ATTACHMENT 1

DISCUSSION OF CHANGE

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2

DISCUSSION OF CHANGE

INTRODUCTION

Virginia Electric and Power Company (Virginia Power) is proposing an administrative change to the Surry Technical Specifications which clarifies the requirements (limiting conditions for operation (LCO) and action statements) relating to the Auxiliary Feedwater (AFW) cross-connect. Specifically, the AFW cross-connect electrical requirements are being relocated from Technical Specification (TS) 3.16, Emergency Power System, to TS 3.6, Turbine Cycle, to consolidate the AFW cross-connect requirements. Consolidation of the AFW cross-connect requirements will facilitate Operations' entry into the TS LCO and action statements, while preserving the design and licensing basis for the specification. This proposed change does not alter the current action statement requirements, it merely relocates them.

BACKGROUND

Surry TS Amendment 77/78, issued on April 27, 1982, revised the AFW system requirements, including one operable AFW pump for the opposite unit; this requirement was added to address a fire in the main steam valve house. Surry TS Amendment 143/140, issued on August 2, 1990, increased the number of AFW pumps from one to two required to be available for cross-connect from the opposite unit to an operating unit; TS Amendment 143/140 revised TSs 3.6, 3.9, and 3.16. This increase in the number of required AFW pumps provided additional margin of safety for common mode failure events, such as a loss of all AFW pumps for a unit due to a high energy line break in that unit's main steam valve house. TS Amendment 143/140 included emergency power supply requirements to support the AFW cross-connect feature. When the LCO and action statements for the AFW cross-connect were incorporated into TSs 3.16.A.8 and 3.16.B.4, respectively, it was not recognized that TS 3.16.B.4 was inappropriately included in the listing following the words "one of the following" in TS 3.16.B. The "one of the following" statement should have been limited to the requirements of TSs 3.16.B.1 through 3.16.B.3 and should not have been applied to Specification 3.16.B.4. As currently written, TS 3.16.B allows entry into only one of the allowed conditions at a time, even though the allowed conditions for an operating unit (TS 3.16.B.1 or 3.16.B.2 or 3.16.B.3) and the opposite unit (TS 3.16.B.4) were developed for simultaneous entry. It has been acknowledged that clarification of the TS requirements is necessary to facilitate Operations' entry into the TS LCO and action statements, as well as to ensure that planned maintenance activities primarily conducted during an outage can be conducted in compliance with the TS requirements without clarification. Therefore, this administrative change to Surry Technical Specifications is being proposed to clarify the requirements relating to the AFW cross-connect by relocating the emergency power source requirements of TSs 3.16.A.8 and 3.16.B.4 to TS 3.6. This relocation results in consolidation of the AFW cross-connect requirements in TS 3.6.

The relocated emergency power source requirements relating to the AFW cross-connect remain consistent with the requirements for AFW cross-connect operability currently contained in TS 3.6. The existing TS 3.6 requirements address AFW cross-connect operability relative to pumps, valves, piping, control board indications, and the protected condensate storage tank.

Licensing Basis

Surry TS Amendment 143/140 revised TSs 3.6.B, 3.6.G, 3.9.A.6 & 7, 3.9.B, 3.9.D, 3.16.A.8, and 3.16.B.4 requirements to maintain two operable AFW Pumps on the opposite unit. The addition of these requirements ensures that in the event of a common mode failure of an operating unit's AFW Pumps and a single failure affecting the opposite unit's AFW Pumps, an operating unit's secondary heat sink can be maintained by the opposite unit's AFW Pumps via the AFW cross-connect.

The AFW cross-connect requirements support operability of the AFW cross-connect in the event of a high energy line break (HELB) on an operating unit, a single failure on the opposite unit, and a loss of offsite power (LOOP); the allowed outage times (AOTs) were justified using a Probabilistic Safety Assessment (PSA) which evaluated the event frequency for loss of the AFW cross-connect and LOOP coincident with the HELB event as a function of AOT. An inherent assumption in the PSA was that the HELB event on an operating unit rendered AFW on that unit unavailable. Consequently, the calculated event frequencies are governed entirely by the limiting conditions for the AFW cross-connect capability from the opposite unit. Therefore, the allowed conditions for an operating unit and the opposite unit were developed for simultaneous entry.

This proposed change does not alter the current TS requirements, it merely relocates them. The proposed TS change is consistent with the licensing basis for TS Amendment 143/140.

Design Basis

Each unit has three AFW Pumps. Two of the pumps are each driven by an electric motor, and the third pump is driven by a steam turbine. The pumps are aligned in a two header configuration such that all three pumps can feed all three Steam Generators for a given unit. Each unit's AFW System is cross-connected to the opposite unit to provide a secondary heat sink in the event of a common mode failure of all three AFW Pumps on an operating unit.

Each unit has two independent emergency buses to supply emergency loads. These buses are normally supplied by two primary offsite AC power sources (System Reserve Transformers 1 and 2). In addition to the primary offsite AC power sources, a third primary offsite AC power source (System Reserve Transformer 4) is available to each independent emergency bus. A dependable alternate offsite AC power source (i.e., backfeed) also remains available to each independent emergency bus; the source

can be made available in 8 hours by removing a unit from service, disconnecting its main generator from the isolated phase bus, and feeding offsite electrical power through the main step-up transformer and normal station service transformers.

The onsite Emergency Power System is shared between Units 1 and 2, with two emergency buses provided for each unit and served by three diesel generators. The emergency diesel generators are arranged in a split-bus configuration, with one emergency bus in each unit served by its own dedicated diesel and the two remaining buses served by a shared (or swing) diesel. The diesel starting systems are independent of each other. Each diesel generator has 100 percent capacity.

Operability of the onsite Electrical Power Distribution Systems ensures the availability of sufficient AC, DC, and AC Vital Bus power to achieve and maintain safe shutdown following a design basis accident with a loss of offsite power and a single failure.

The operability requirement for portions of the opposite unit's Emergency Power System ensures that AFW from the opposite unit can be supplied by the cross-connect feature to an operating unit affected by a common mode failure of the AFW Pumps due to a HELB in the Main Steam Valve House (MSVH). Evaluation of the Emergency Power Supply alignment considering a HELB in the MSVH with a LOOP, while the opposite unit's dedicated EDG is inoperable, has shown that operator actions to manually align the No. 3 (shared) EDG to the non-accident unit are required to ensure the capability to establish AFW flow via the cross-connect. Operations personnel are trained and knowledgeable in performing this activity, and procedures are in place if such a need occurs.

The proposed TS change is consistent with the Surry design basis.

SPECIFIC CHANGES

As noted above, the proposed TS change relocates the electrical power requirements supporting the AFW cross-connect capability from TS 3.16. This relocation consolidates the AFW cross-connect requirements in TS 3.6. The specific changes are as follows:

- The words "The following shall apply:" are added to Specification 3.6.B since the TSs 3.6.B.1, 3.6.B.2, 3.6.B.3, and 3.6.B.4 each have their respective requirements (i.e., shall be operable, capable, or available).

- The words ". . . shall be operable" are relocated from the previous TS 3.6.B.1 to the current TS 3.6.B.1 addressing the two motor driven auxiliary feedwater pumps.

- Specification 3.6.B.4 is added to address the AFW cross-connect capability requirements including:

  a) TS 3.6.B.4.a - the requirement for two of three AFW pumps on the opposite unit is relocated from TS 3.6.B.1.b as written,

  b) TS 3.6.B.4.b - the requirement for a minimum of 60,000 gallons of water in the protected condensate storage tank of the opposite unit is relocated from TS 3.6.B.2 as written, and

  c) TS 3.6.B.4.c - the emergency power requirements are relocated from TS 3.16.A.8 and are specifically written out (versus referenced as in the existing TS 3.16.A.8) as follows:

     "c. Emergency power supplied to the opposite unit's auxiliary feedwater pumps and to the AFW cross-connect valves, as follows:

     1. Two diesel generators (the opposite unit's diesel generator and the shared backup diesel generator) OPERABLE with each generator's day tank having at least 290 gallons of fuel and with a minimum on-site supply of 35,000 gallons of fuel available.

     2. Two 4160V emergency buses energized.

     3. Two OPERABLE flow paths for providing fuel to the opposite unit's diesel generator and the shared backup diesel generator.

     4. Two station batteries, two chargers and the DC distribution systems OPERABLE.

     5. Emergency diesel generator battery, charger and the DC control circuitry OPERABLE for the opposite unit's diesel generator and for the shared back-up diesel generator.

     6. The 480V emergency buses energized which supply power to the auxiliary feedwater cross-connect valves:

        a: For AFW from Unit 1 to Unit 2: Buses 1H1 and 1J1.
        b: For AFW from Unit 2 to Unit 1: Buses 2H1 and 2J1.

     7. One of the two physically independent circuits from the offsite transmission network energizing the opposite unit's emergency buses."

- The references in TS 3.6.D are changed from " Specifications 3.6.B.1, 3.6.B.2, 3.6.B.3, and 3.6.C" to " Specifications 3.6.B and 3.6.C."

- The references in TS 3.6.G are changed from " Specifications 3.6.B.1, 3.6.B.2, 3.6.B.3, and 3.6.D" to "Specifications 3.6.B and 3.6.D."

- The AFW cross-connect electrical power action statements are relocated to TS 3.6.G.3 from TS 3.16.B.4 as written except to change the reference contained therein from "Section 3.16.A.8" to "Section 3.6.B.4.c." In addition, TS 3.6.G.3 is expanded to include diesel fuel oil flow path inoperability and the added requirement is identical to the existing requirement in TS 3.16.B.1.b.

- In the TS 3.6 Basis, reference to the decay heat release line as a means of releasing steam to the atmosphere is deleted because the decay heat release valves have been abandoned in place. This equipment condition is reflected in Section 10.3.1.2 of the Surry UFSAR (page 10.3-9). This change, along with others, was addressed in an Engineering Work Request (EWR). A summary of the safety evaluation associated with the EWR was included in our 10CFR50.59 reporting to the NRC in letter Serial No. 97-151, dated March 12, 1997. This TS Basis revision, which is unrelated to the requested TS revision, is included for the NRC's information and is not addressed elsewhere in this discussion.

- The TS 3.6 Basis discussion of the AFW cross-connect is made a separate paragraph. This paragraph is expanded by relocation of the TS 3.16 Basis discussion of the AFW cross-connect as written. This relocation consolidates the AFW cross-connect Basis discussion in the TS 3.6 Basis.

- TS 3.9.B is deleted since the AFW cross-connect requirements, including the electrical power requirements, are consolidated in TS 3.6.

- TS 3.9.C and the associated Basis discussion are deleted since two loop operation is no longer permitted at Surry. TS 3.1.A.4.b, included in Amendment 199/199, states "POWER OPERATION with less than three loops in service is prohibited..." Amendment 199/199 relocated the Reactor Coolant System loop isolation valve requirements from TS 3.3.A.11 to TS 3.1.A.4.b; our proposed TS change and associated Significant Hazards Consideration determination (via letter S/N 94-346, dated June 9, 1994) concluded that the relocation of specification(s) has not reduced any limiting condition for operation. The NRC's Safety Evaluation found the proposed relocation acceptable. Therefore, this particular change is not addressed elsewhere in this discussion.

- The existing TS 3.9.D is renumbered as TS 3.9.B.

- The existing TS 3.9 Basis discussion of the AFW cross-connect is deleted since the TS 3.6 Basis is being revised to consolidate the AFW cross-connect Basis discussion. A statement is added to the TS 3.9 Basis saying "The electrical power requirements and the emergency power testing requirements for the auxiliary feedwater cross-connect are contained in TS 3.6.B.4.c and TS 4.6, respectively."

- TS 3.16.A.8 is deleted since the electrical power requirements are being relocated to TS 3.6.B.4.c.

- The TS 3.16.B.4 requirements are being relocated to TS 3.6.G.3, except the shutdown requirements portion of TS 3.16.B.4 which is deleted since it already exists in TS 3.6.G.

- The TS 3.16 Basis discussion of the AFW cross-connect is relocated to the TS 3.6 Basis to consolidate the AFW cross-connect Basis discussion. A statement is added to the TS 3.16 Basis saying "The electrical power requirements and the emergency power testing requirements for the auxiliary feedwater cross-connect are contained in TS 3.6.B.4.c and TS 4.6, respectively."

- In addition, administrative changes are included, such as the capitalization of defined terms (i.e., OPERABLE, HOT SHUTDOWN, COLD SHUTDOWN) and two minor corrections (i.e., added "V" after 4160 in TS 3.16.A.4 and added the word "path" in the first sentence in TS 3.16.B.1.b).

SAFETY SIGNIFICANCE

The proposed administrative change to Surry Technical Specifications clarifies the requirements (limiting conditions for operation (LCO) and action statements) relating to the Auxiliary Feedwater (AFW) cross-connect by relocating TSs 3.16.A.8 and 3.16.B.4 to TS 3.6. There is no safety significance associated with this proposed TS change since it does not alter the current TS requirements, while maintaining the Surry licensing and design basis.