VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

March 8, 2005

10CFR50.92

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

Serial No. 05-107
SPS-LIC/CGL R0
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
PROPOSED TECHNICAL SPECIFICATION CHANGE
REVISION OF AUXILIARY FEEDWATER REQUIREMENTS AND SURVEILLANCES

In a letter dated May 13, 2004 (Serial No. 04-280), Virginia Electric and Power Company (Dominion) submitted a Technical Specification (TS) change request for NRC review and approval. The proposed change revised the TSs to: 1) achieve consistency between existing operability requirements and required actions for an inoperable auxiliary feedwater (AFW) pump and 2) to address the lack of an allowed outage time and required actions for an inoperable AFW flowpath. In an October 28, 2004 letter (Serial No. 04-280A), we indicated that it was our intention to supersede the earlier submittal with a revised TS change that would address the NRC request that the AFW pump operability requirement be rewritten consistent with NUREG-1431, "Standard (Improved) Technical Specifications (ITS) – Westinghouse Plants." The purpose of this letter is to provide the superseding TS change request.

Therefore, pursuant to 10CFR50.90, Dominion requests an amendment to Facility Operating License Numbers DPR-32 and DPR-37 in the form of changes to the TSs for Surry Power Station Units 1 and 2. The proposed change will revise TS 3.6 to eliminate the inconsistency between the current AFW pump operability requirements and required actions and to add an AFW flowpath allowed outage time and required actions. The proposed change will also revise the TS 3.6 requirements and the TS 4.8 surveillances for consistency with ITS. A discussion of the proposed TS change is provided in Attachment 1. The marked-up and proposed TS pages are provided in Attachments 2 and 3, respectively.

The proposed change has been reviewed and approved by the Station Nuclear Safety and Operating Committee, as well as the Management Safety Review Committee.

We have evaluated the proposed TS change and have determined that it does not involve a significant hazards consideration as defined in 10CFR50.92. The basis for our determination is provided in Attachment 1. We have also determined that operation

with the proposed change will not result in any significant increase in the amount of effluents that may be released offsite and no significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10CFR51.22(c)(9). Pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed change.

As discussed in Attachment 1, the existing AFW System TS operability requirements and required actions for AFW pump inoperability are inconsistent, and an allowed outage time and required actions for AFW flowpath inoperability do not currently exist. To address these issues, Dominion would like to have this proposed TS change in place prior to the Spring 2006 Unit 1 refueling outage. Thus, approval of the proposed change is requested by the end of November 2005 with a 60-day implementation period.

Please note that a separate proposed TS change that relocates inservice inspection and testing requirements was submitted by a letter dated November 4, 2004 (Serial No. 04-666). That proposed TS change affects some of the same pages that are impacted by this TS change request. Specifically, the TS pages affected by both requests are pages TS 4.8-1, TS 4.8-2, and TS 4.8-3. We will work with the Surry NRC Project Manager to ensure coordinated revision of these pages for the two proposed TS change requests.

If you have any questions or require additional information regarding this TS change request, please contact Mr. Gary Miller at (804) 273-2771.

Very truly yours,

Leslie N. Hartz
Vice President – Nuclear Engineering

Attachments:
1. Discussion of Change
2. Marked-up Technical Specifications Pages
3. Proposed Technical Specifications Pages

Commitments made in this letter: None

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SN: 05-107
Docket Nos.: 50-280/281
Subject: Proposed TS Change-Revision of Auxiliary Feedwater Requirements and Surveillances

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Leslie N. Hartz, who is Vice President - Nuclear Engineering, of Virginia Electric and Power Company. She has affirmed before me that she 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 her knowledge and belief.

Acknowledged before me this 8TH day of March, 2005.

My Commission Expires: May 31, 2006.

Vicki L. Hull
Notary Public

(SEAL)

Attachment 1

Discussion of Change

AFW Requirements and Surveillances Revisions

Surry Power Station Units 1 and 2
Virginia Electric and Power Company
(Dominion)

DISCUSSION OF CHANGE

Introduction

Pursuant to 10CFR50.90, Virginia Electric and Power Company (Dominion) requests a change to the Technical Specifications (TSs) for Surry Power Station Units 1 and 2. The proposed change revises TS 3.6 primarily to eliminate the inconsistency between the auxiliary feedwater (AFW) pump requirements and to add an AFW flowpath allowed outage time (AOT) and required actions. In addition, the TS 3.6 requirements and the TS 4.8 surveillances are being revised for consistency with Improved Technical Specifications (ITS). Basis changes for TS 3.6 and 4.8 are also being made consistent with the TS revisions and are provided to the NRC for information only. Editorial changes are made in the TSs and the Bases for consistent terminology.

The proposed change has been reviewed with respect to 10CFR50.92, and it has been determined that no significant hazards consideration exists. In addition, it has been determined that the change qualifies for categorical exclusion from an environmental assessment as set forth in 10CFR51.22(c)(9); therefore, no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed change.

Background

The current TS requirements for the AFW pumps are not consistent between Reactor Coolant System (RCS) conditions exceeding 350°F and 450 psig and reactor power exceeding 10%. Specifically, TS 3.6.B.1 requires the two motor driven AFW pumps to be operable prior to RCS conditions of 350°F and 450 psig, and TS 3.6.C requires the steam driven AFW pump to be operable prior to exceeding 10% reactor power. However, with one AFW pump inoperable, TS 3.6.F requires that at least three AFW pumps be operable within 72 hours, or the unit shall be in hot shutdown within the following 12 hours. TS 3.6.F as currently written implies all three AFW pumps are required to be operable between RCS conditions exceeding 350°F and 450 psig and reactor power exceeding 10%. Thus, the AFW pump operability requirements and the associated required action statement are inconsistent.

In addition, the current TS 3.6.D requires AFW piping, valves, and control board indication operability. However, there is no associated allowed outage time or required action statement for inoperability of these components or instrumentation.

While correcting these situations, the proposed change revises the AFW operability requirements, required actions, and surveillances for consistency with ITS.

Design Basis

The AFW System provides a source of feedwater to the secondary side of the steam generators at times when the Feedwater System is not available, thereby maintaining the heat sink capabilities of the steam generators. The system is relied upon to prevent core damage and RCS overpressurization in the event of transients, such as a loss of normal feedwater or a secondary system pipe rupture, and to provide a means for plant cooldown following any plant transient.

The AFW System for each unit consists of two motor driven AFW pumps each rated for 350 gallons per minute (gpm) at 2730 feet of head, one steam (or turbine) driven AFW pump rated for 700 gpm at 2730 feet of head, a 110,000 gallon emergency condensate storage tank, and associated piping, headers, valves, controls, and instrumentation. A flow diagram is included to illustrate the AFW System configuration. Use of two motor driven AFW pumps and a turbine driven AFW pump provides for diversity of power sources for the automatic actuation of the AFW supply. The AFW pumps, powered by either power source (i.e., motor driven or turbine driven), provide adequate capacity to cool the RCS when required. The amount of AFW flow that is required is dependent upon the amount of decay heat being generated, the rate of cooldown desired for the RCS, and the heat being added to the RCS by operating reactor coolant pumps. Although the flowpaths from the pumps to the steam generators include common piping, the configuration of the system provides two redundant flowpaths. The components in one flowpath are supplied by the H emergency bus, while the other is supplied by the J emergency bus. The AFW Systems for Units 1 and 2 are cross-connected to provide additional redundancy in case a single event, such as a fire or a high energy line break in the main steam valve house, would disable the AFW System on one unit.

Following a reactor trip (with the Feedwater System not available), heat removal from the RCS is accomplished by maintaining the heat sink on the secondary side of the steam generators with the AFW System and releasing steam either to the condensers through the steam dump valves or to the atmosphere through a combination of the steam generator safety valves and available atmospheric steam dump valves. The AFW System delivers water to the steam generators at a rate that both maintains adequate heat transfer and restores the steam generator levels to the narrow range level where it can be maintained and controlled. The AFW System must be capable of functioning for extended periods to either allow for restoration of normal feedwater flow or to proceed with an orderly cooldown of the unit to RCS conditions where the Residual Heat Removal System can be used for decay heat removal.

The AFW flow and stored water capacity must be sufficient to provide for removal of core decay heat, reactor coolant pump heat, and sensible heat during the plant cooldown. The core decay heat and the RCS sensible heat loads increase as a function of the operating reactor power level. The design basis accident for the AFW System, which is a loss of normal feedwater with offsite power available (the reactor coolant pumps keep operating), has acceptable results assuming an AFW flow of 500 gpm [Reference: UFSAR Chapter 14.2.11]. This AFW flow can be delivered

assuming the most limiting single failure, which is the loss of the turbine driven AFW pump.

Licensing Basis – TS 3.6 Requirements

The original Surry TSs, dated March 17, 1972, included the following requirements with no allowed outage times or action statements:

- Two of three AFW pumps shall be operable prior to the RCS exceeding 350°F and 450 psig. (TS 3.6.B.1)

- System piping and valves required for the operation of the components enumerated in Specification B.1, 2, and 3 shall be operable. (TS 3.6.B.4)

As a result of the Three Mile Island Unit 2 incident in March 1979, the NRC issued a letter on September 25, 1979, to advise the company of NRC requirements for the AFW System at Surry Power Station. This letter included NRC Short-Term Recommendation GS-1, which stated: "The licensee should propose modifications to the Technical Specifications to limit the time that one AFW System pump and its associated flow train and essential instrumentation can be inoperable. The outage time limit and subsequent action time should be as required by the Standard Technical Specifications, i.e., 72 hours and 12 hours, respectively." In response to this NRC request, proposed Surry TS Change No. 81 was submitted to the NRC by letter Serial No. 1178, dated December 28, 1979. The proposed TS change was approved by the NRC on April 27, 1982 by TS Amendments 77 and 78 for Units 1 and 2, respectively, and included the following requirements:

- Two motor driven AFW pumps shall be operable and one of three auxiliary feedwater pumps for the opposite unit shall be operable. (Technical Specification 3.6.B.1) [Required to be operable prior to the commencement of any unit operation that would establish reactor coolant system conditions of 350°F and 450 psig which would preclude operation of the Residual Heat Removal System. (Technical Specification 3.6.B)]

- Prior to reactor power exceeding 10%, the steam driven AFW pump shall be operable. (Technical Specification 3.6.C)

- System piping, valves, and control board indication required for the operation of the components enumerated in Specification B.1, 2, 3, and C shall be operable. (TS 3.6.D)

- With one AFW pump inoperable, restore at least three AFW pumps (two motor driven feedwater pumps and one steam driven feedwater pump) to operable status within 72 hours or be in hot shutdown within the following 12 hours. (TS 3.6.F)

As noted above, a distinction was made between the operability requirements for the motor driven and the steam driven AFW pumps. This distinction was based on having the plant at a sufficient power level to prohibit undesirable RCS cooldown, caused by steam flow to the turbine of the steam driven pump. This distinction was unique to Surry's custom TS and was not part of the Standard Technical Specifications. However, the required action statement for the three AFW pumps was written as stated in the Standard Technical Specifications, as recommended by the NRC.

Thus, TS Amendments 77 and 78 introduced the inconsistency between the TSs 3.6.B.1 and 3.6.C operability (and design) requirements and the TS 3.6.F required action statement for the motor driven and the steam driven AFW pumps. The TS 3.6.F required action statement implies that, at any time one AFW pump is inoperable, all three AFW pumps must be restored to operable status within 72 hours, or the unit must be placed in hot shutdown within the following 12 hours. This required action statement is not consistent with the operability requirements of TSs 3.6.B.1 and 3.6.C. TS 3.6.B.1 requires the two motor driven AFW pumps to be operable prior to the RCS exceeding 350°F and 450 psig, but the steam driven AFW pump is not required to be operable until prior to reactor power exceeding 10% in accordance with TS 3.6.C. Therefore, from the time RCS conditions exceed 350°F and 450 psig until reactor power exceeds 10%, only two motor driven AFW pumps are required to be operable, and the current TS 3.6.F requirement to restore three pumps to operable status is more restrictive than, and not consistent with, TSs 3.6.B.1 and 3.6.C.

In addition, TS Amendments 77 and 78 did not include an allowed outage time and a required action statement corresponding to the AFW piping, valves, and control board indication operability requirement.

Licensing Basis – TS 4.8 Surveillance Requirements

The current TS 4.8 surveillance requirements are based on changes incorporated by the following TS amendments:

- TS Amendments 77 and 78, dated April 27, 1982, added system flow testing requirements in TSs 4.8.A.4a, 4.8.A.4b, and 4.8.A.5 as required by a September 25, 1979 letter from the NRC that directed implementation of post-Three Mile Island Unit 2 incident requirements.
- TS Amendments 175 and 174, dated March 12, 1993, implemented the recommendations of Generic Letter 87-09, titled "Sections 3.0 and 4.0 of the Standard Technical Specifications on the Applicability of Limiting Conditions for Operation and Surveillance Requirements", and revised some TS 4.8 requirements to indicate that the provisions of Specification 4.0.4 are not applicable.
- TS Amendments 190 and 190, dated March 7, 1994, modified the surveillance requirements for AFW pumps and valves to reduce AFW System testing at power and to clarify the shutdown test requirements.

ITS 3.7.5 Requirements and Corresponding Proposed Surry TS Requirements

As noted, the proposed change revises the AFW TS requirements and surveillances for consistency with the ITS AFW requirements. The following table identifies the ITS requirements (from NUREG-1431) and the corresponding Surry requirements in the proposed change.

ITS Spec	Proposed TS	Requirement
LCO 3.7.5	New 3.6.B	Motor driven AFW pump and flowpath operability requirements for < 350°F/450 psig and using SGs for heat removal
LCO 3.7.5	Revised 3.6.B.1/ now 3.6.C.1 & revised 3.6.D/ now 3.6.C.3	AFW pumps and flowpaths operability requirements for ≥ 350°F/450 psig
TS 3.7.5.A	New 3.6.E	7 day AOT for turbine driven AFW pump inoperability following refueling and prior to reactor criticality; steam supply AOT from ITS is not applicable due to Surry system configuration – 72 hour turbine driven AFW pump AOT applied when redundancy in steam supply is lost
TS 3.7.5.B	New 3.6.F.1 & new 3.6.G.1	72 hour AOT for one AFW pump or one flowpath inoperability
TS 3.7.5.C	New 3.6.F.2	6 hour AOT for two AFW pumps inoperability
TS 3.7.5.D	New 3.6.F.3 & new 3.6.G.2	Immediate restoration for loss of AFW capability
TS 3.7.5.E	New 3.6.D	Immediate restoration of inoperable equipment for < 350°F/450 psig and using SGs for heat removal
SR 3.7.5.1	Current 4.8.A.1	31 day AFW valve position verification
SR 3.7.5.2	Current 4.8.A.3 with note for turbine driven AFW pump developed head test required to be performed within 24 hours after reaching hot shutdown	AFW pump inservice testing requirements (ITS requirement is developed head test with note for turbine driven AFW pump that test not required to be performed until [24 hours] after ≥ [1000] psig in steam generator)

ITS Spec	Proposed TS	Requirement
SR 3.7.5.3	New 4.8.A.6.a	18 month AFW automatic valve actuation to correct position verification
SR 3.7.5.4	New 4.8.A.6.b	18 month AFW pump auto-start verification
SR 3.7.5.5	Revised 4.8.A.4	AFW flowpath alignment verification by flow prior to exceeding 350°F/450 psig when < 350°F/450 psig for > 30 days

The table above does not include AFW cross-connect requirements since the cross-connect requirements 1) are not being revised by this change, 2) are unique to Surry, and 3) are not in ITS.

Discussion and Description of Proposed TS Revisions

The TS 3.6 requirements are reordered and renumbered in a more logical manner. The following table summarizes the renumbering changes.

Current	Revised
TS 3.6.B	Renumbered as TS 3.6.C because new TS 3.6.B inserted with new pump and flowpath requirements for < 350°F/450 psig and using SGs for heat removal
TS 3.6.B.3	Consolidated into TS 3.6.A
TS 3.6.C	Deleted current requirement for turbine driven pump to be operable prior to exceeding 10% reactor power and replaced with current TS 3.6.B AFW requirements prior to exceeding 350°F/450 psig
TS 3.6.D	Relocated in part to renumbered TS 3.6.C.3 and in part to cross-connect required actions in renumbered TS 3.6.I and replaced with new required actions for < 350°F/450 psig and using SGs for heat removal
TS 3.6.E	Relocated secondary coolant specific activity requirements to TS 3.6.H and replaced with new turbine driven AFW pump required actions following refueling and prior to reactor criticality
TS 3.6.F	Deleted current AFW pump required actions and replaced with new AFW pump required actions

Current	Revised
TS 3.6.G	Relocated to TS 3.6.I and replaced with new AFW flowpath/instrumentation required actions
TS 3.6.H	Relocated to TS 3.6.J and replaced with secondary coolant specific activity requirements currently in TS 3.6.E

The following paragraphs discuss the proposed revisions to TS 3.6 and 4.8.

The requirements for the MSSVs in the current TSs 3.6.A, 3.6.B.3, and 3.6.D are consolidated in TS 3.6.A. This consolidation is accomplished by deleting the duplicate MSSV requirements in the current TS 3.6.B.3 and relocating the associated system piping requirement related to the MSSVs in the current TS 3.6.D (by reference to the current 3.6.B) to TS 3.6.A.

TS 3.6.B is revised to add new AFW pump and flowpath requirements if using the steam generators for heat removal with RCS conditions less than 350°F and 450 psig. New required actions corresponding to the new TS 3.6.B are added in the new TS 3.6.D. These new requirements in TSs 3.6.B and 3.6.D are consistent with ITS.

The terminology in the renumbered TS 3.6.C with respect to RCS conditions of 350°F and 450 psig is revised for consistency with other TS 3.6 requirements.

The renumbered TS 3.6.C.1 is revised to require three AFW pumps to be operable prior to exceeding RCS conditions of 350°F and 450 psig, consistent with ITS. Along with this revision, the current TS 3.6.C requirement for the steam driven AFW pump to be operable prior to reactor power exceeding 10% is deleted.

The current TS 3.6.D requirement that 'automatic initiation instrumentation associated with the opposite unit's auxiliary feedwater pumps need not be operable' is relocated to the renumbered TS 3.6.I with other opposite unit's auxiliary feedwater requirements.

The proposed change revises the current TS 3.6.D (partially renumbered as TS 3.6.C.3) piping, valves, and control board indication requirements to more appropriately reflect AFW flowpath requirements, where the flowpath includes piping, headers, valves, and control board indication required for operation. The new TS 3.6.G is added to provide an AOT and required actions associated with the flowpath operability requirements in the renumbered TS 3.6.C.3; these requirements are also consistent with ITS. Minor changes in the renumbered TSs 3.6.C.4 and 3.6.I AFW cross-connect flowpath terminology are made for consistency with the flowpath terminology revisions in the renumbered TS 3.6.C.3.

The proposed change also revises the current TS 3.6.F AFW pump required actions to eliminate the inconsistency between the current AFW pump requirements and for consistency with ITS. New required actions for turbine driven AFW pump inoperability following refueling and prior to reactor criticality with a 7 day allowed outage time,

consistent with ITS, are included in TS 3.6.E. The 7 day steam supply AOT from ITS is not included in TS 3.6.E because it is not applicable due to Surry system configuration; instead, at Surry the 72 hour turbine driven AFW pump AOT is applied when redundancy in the steam supply is lost. New required actions for AFW pump inoperability, consistent with ITS, are included in TS 3.6.F.

The revised required actions in the new TSs 3.6.D, 3.6.E, 3.6.F, and 3.6.G apply to the affected unit. AFW cross-connect pump and flowpath required actions are contained in the renumbered TS 3.6.I. The AFW cross-connect requirements were incorporated into the Surry TSs by Amendment 143/140, dated August 2, 1990. The basis for these requirements is not being revised by this change [Reference: UFSAR Appendix 14B].

For the AFW required actions in the renumbered TS 3.6.I, the end state of hot shutdown is revised to more appropriately reflect less than 350°F and 450 psig, since this is the plant condition where the AFW System is no longer required to be operable (i.e., corresponds to the applicability requirements for AFW). Thus, the end state of less than 350°F and 450 psig is a safer plant condition than hot shutdown with respect to AFW System inoperability.

Editorial revisions are made in renumbered TS 3.6.I.3 to change "flow path" to "flowpath" for consistency. In addition, an editorial revision is made in the renumbered TS 3.6.J to change "auxiliary steam generator feed pumps" to "auxiliary feedwater pumps" for consistency.

Revisions to the Basis for TS 3.6 are made to describe the AFW System configuration, to discuss the AFW System design basis and accident analysis requirements, to reference the TS 4.8 Basis for discussion of AFW pump operability considerations, and to provide the basis for the required actions for a loss of AFW capability. Editorial revisions are made in the TS 3.6 Basis to change "steam driven auxiliary feedwater pump" to "turbine driven auxiliary feedwater pump" for consistency. The TS 3.6 Basis revisions are provided for information only and will be incorporated into the TSs, following NRC approval of this TS change request.

In addition, the References for TS 3.6 to the FSAR are revised to reflect the UFSAR (versus FSAR) section titles and to include references to the following for completeness:

- UFSAR Section 14.2.11, Loss of Normal Feedwater
- UFSAR Appendix 14B, Effects of Piping System Breaks Outside Containment

As a result of TS 3.6.B.4.c being renumbered as TS 3.6.C.4.c, references to TS 3.6.B.4.c in the Bases for TSs 3.9 and 3.16 are revised to TS 3.6.C.4.c.

The TS 4.8 surveillances for AFW pumps are revised for consistency with the ITS surveillance requirements. The specific revisions are as follows:

- A note is added to TS 4.8.A.3.a to qualify that the developed head test of the turbine driven AFW pump is required to be performed within 24 hours after reaching HOT SHUTDOWN.

- The current TSs 4.8.A.4a and 4.8.A.4b flow test requirements are deleted and replaced with a verification of proper alignment of the AFW flowpaths prior to exceeding 350°F and 450 psig whenever the RCS conditions have been less than 350°F and 450 psig for a period greater than 30 days.
- New 18-month surveillances are added for verification of AFW automatic valve actuation to the correct position and AFW pump auto-start verification.

Editorial revisions are made in TS 4.8 and the TS 4.8 Basis to change "flow path(s)" to "flowpath(s)" for consistency.

The TS 4.8.B Acceptance Criteria are revised to reflect the deletion of flow test requirements and the replacement with flowpath alignment requirements in TS 4.8.A.4. INTERMEDIATE SHUTDOWN is added since RCS conditions less than 350°F and 450 psig partially encompass the INTERMEDIATE SHUTDOWN operating condition, defined in Specification 1.0.C.3 as when the reactor is subcritical by at least 1.77% $\Delta k/k$ and $200°F < T_{avg} < 547°F$.

A revision to the Basis for TS 4.8 is made to add a discussion of AFW pump operability considerations. The philosophy of the TS 4.8 Basis discussion is consistent with the ITS Surveillance Requirement (SR) 3.0.1 Bases philosophy and is consistent with the existing TS 4.0.4. Similar to the TS 3.6 Basis revisions, the TS 4.8 Basis revisions are provided for information only and will be incorporated into the TSs following NRC approval of this TS change request.

In addition, the References for TS 4.8 to the UFSAR are revised to include the following for completeness:
- UFSAR Section 10.3.5, Condensate and Feedwater Systems

Details of the specific revisions are provided in the following paragraphs.

TS 3.6.A currently states:

> *A. A unit's Reactor Coolant System temperature or pressure shall not exceed 350°F or 450 psig, respectively, or the reactor shall not be critical unless the five main steam line code safety valves associated with each steam generator in unisolated reactor coolant loops are OPERABLE with lift settings as specified in Table 3.6-1A and 3.6-1B.*

TS 3.6.A is revised as follows (NOTE: Consolidates MSSV requirements from TSs 3.6.A, 3.6.B.3, and 3.6.D):

> A. A unit's Reactor Coolant System temperature or pressure shall not exceed 350°F or 450 psig, respectively, or the reactor shall not be critical unless the five main steam line code safety valves associated with each steam generator in unisolated reactor coolant loops are OPERABLE with lift settings as specified in Table 3.6-1A and 3.6-1B. Associated system piping shall also be OPERABLE.

New AFW requirements are inserted as TS 3.6.B as follows:

B. With Reactor Coolant System conditions less than 350°F and 450 psig and the steam generators being used for heat removal, one motor driven auxiliary feedwater pump and associated flowpath shall be OPERABLE.

TS 3.6.B currently states:

B. To assure residual heat removal capabilities, the following conditions shall be met prior to the commencement of any unit operation that would establish reactor coolant system conditions of 350°F and 450 psig which would preclude operation of the Residual Heat Removal System. The following shall apply:

TS 3.6.B is renumbered as TS 3.6.C and revised as follows:

C. To assure residual heat removal capabilities, the following conditions shall be met prior to exceeding Reactor Coolant System conditions of 350°F and 450 psig which would preclude operation of the Residual Heat Removal System. The following shall apply:

TS 3.6.B.1 currently states:

1. Two motor driven auxiliary feedwater pumps shall be OPERABLE.

TS 3.6.B.1 is renumbered as TS 3.6.C.1 and revised as follows:

1. Three auxiliary feedwater pumps shall be OPERABLE.

TS 3.6.B.3 currently states:

3. All main steam line code safety valves, associated with steam generators in unisolated reactor coolant loops, shall be OPERABLE with lift settings as specified in Table 3.6-1A and 3.6-1B.

TS 3.6.B.3 is renumbered as TS 3.6.C.3 and revised as follows: (NOTE: Main steam safety valve requirements are consolidated in TS 3.6.A and the current TS 3.6.D AFW flowpath operability requirements are relocated to the renumbered TS 3.6.C.3.)

3. Two redundant flowpaths, including system piping, headers, valves, and control board indication required for operation of the components enumerated in Specifications 3.6.C.1 and 3.6.C.2, shall be OPERABLE.

TS 3.6.B.4.a currently states:

a. Two of the three auxiliary feedwater pumps on the opposite unit (automatic initiation instrumentation need not be OPERABLE) capable of being used with the opening of the cross-connect.

TS 3.6.B.4.a is renumbered as TS 3.6.C.4 and revised as follows:

a. Two of the three auxiliary feedwater pumps and the associated redundant flowpaths on the opposite unit (automatic initiation instrumentation need not be OPERABLE) capable of being used with the opening of the cross-connect.

TS 3.6.C currently states:

C. Prior to reactor power exceeding 10%, the steam driven auxiliary feedwater pump shall be OPERABLE.

The current TS 3.6.C requirements are being deleted and the current TS 3.6.B is renumbered as TS 3.6.C.

TS 3.6.D currently states:

D. System piping, valves, and control board indication required for operation of the components enumerated in Specifications 3.6.B and 3.6.C shall be OPERABLE (automatic initiation instrumentation associated with the opposite unit's auxiliary feedwater pumps need not be OPERABLE).

The following sentence in parentheses is relocated from the current TS 3.6.D to the current TS 3.6.G, renumbered as TS 3.6.I:

Automatic initiation instrumentation associated with the opposite unit's auxiliary feedwater pumps need not be OPERABLE.

The remainder of the current TS 3.6.D is revised and relocated to the renumbered TS 3.6.C.3 as noted above.

New AFW pump and flowpath required actions are inserted as TS 3.6.D as follows:

D. With Reactor Coolant System conditions less than 350°F and 450 psig and the steam generators being used for heat removal, if either the motor driven pump or the associated flowpath becomes inoperable, immediately initiate action to restore the inoperable equipment to OPERABLE status.

The existing TS 3.6.E secondary coolant specific activity requirements are relocated to TS 3.6.H and new AFW pump required actions are inserted in TS 3.6.E as follows:

E. With the turbine driven pump inoperable on the affected unit and with Reactor Coolant System temperature and pressure greater than 350°F and 450 psig, respectively, immediately following REFUELING SHUTDOWN and prior to REACTOR CRITICAL, restore the inoperable pump to OPERABLE status within 7 days or be less than 350°F and 450 psig within the next 12 hours.

TS 3.6.F currently states:

F. With one auxiliary feedwater pump inoperable, restore at least three auxiliary feedwater pumps (two motor driven feedwater pumps and one steam driven feedwater pump) to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the following 12 hours.

The TS 3.6.F AFW pump required actions are deleted and replaced with new AFW pump required actions as follows:

F. The following actions shall be taken when one or more auxiliary feedwater pumps are inoperable on the affected unit for reasons other than those addressed in Specification 3.6.E:
   1. With one auxiliary feedwater pump inoperable, restore the inoperable pump to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 6 hours and be less than 350°F and 450 psig within the following 12 hours.
   2. With two auxiliary feedwater pumps inoperable, be in HOT SHUTDOWN within 6 hours and be less than 350°F and 450 psig within the next 12 hours.
   3. With three auxiliary feedwater pumps inoperable, immediately initiate action to restore one inoperable pump to OPERABLE status. Specification 3.0.1 and all other required actions directing mode changes are suspended until one inoperable pump is restored to OPERABLE status.

New AFW flowpath required actions are inserted in TS 3.6.G as follows:

G. The following actions shall be taken with inoperability of a component or instrumentation other than the flow instrumentation in one or both redundant auxiliary feedwater flowpaths required by Specification 3.6.C.3 on the affected unit: (See Specification 3.7 and TS Table 3.7-6 for auxiliary feedwater flow instrumentation requirements.)
   1. With component or instrumentation inoperability in one redundant flowpath, restore the inoperable component or instrumentation to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 6 hours and be less than 350°F and 450 psig within the following 12 hours.

2. With component or instrumentation inoperability affecting both redundant flowpaths, immediately initiate action to restore the inoperable component or instrumentation in one flowpath to OPERABLE status. Specification 3.0.1 and all other required actions directing mode changes are suspended until the inoperable component or instrumentation in one flowpath is restored to OPERABLE status.

TS 3.6.G currently states:

G. The requirements of Specifications 3.6.B and 3.6.D above concerning the opposite unit's auxiliary feedwater pumps; associated piping, valves, and control board indication; and the protected condensate storage tank may be modified to allow the following components to be inoperable, provided immediate attention is directed to making repairs.

TS 3.6.G is renumbered as TS 3.6.I and revised as follows:

I. The requirements of Specification 3.6.C.4 above concerning the opposite unit's auxiliary feedwater pumps; the associated redundant flowpaths, including piping, headers, valves, and control board indication; the cross-connect piping from the opposite unit; and the protected condensate storage tank may be modified to allow the following components to be inoperable, provided immediate attention is directed to making repairs. Automatic initiation instrumentation associated with the opposite unit's auxiliary feedwater pumps need not be OPERABLE.

TS 3.6.G.1 currently states:

1. One train of the opposite unit's piping, valves, and control board indications or two of the opposite unit's auxiliary feedwater pumps may be inoperable for a period not to exceed 14 days.

TS 3.6.G.1 is renumbered as TS 3.6.I.1 and revised as follows:

1. One of the opposite unit's flowpaths or two of the opposite unit's auxiliary feedwater pumps may be inoperable for a period not to exceed 14 days.

TS 3.6.G.2 currently states:

2. Both trains of the opposite unit's piping, valves, and control board indications; the opposite unit's protected condensate storage tank; the cross-connect piping from the opposite unit; or three of the opposite unit's auxiliary feedwater pumps may be inoperable for a period not to exceed 72 hours.

TS 3.6.G.2 is renumbered as TS 3.6.I.2 and revised as follows:

2. Both of the opposite unit's flowpaths; the opposite unit's protected condensate storage tank; the cross-connect piping from the opposite unit; or three of the opposite unit's auxiliary feedwater pumps may be inoperable for a period not to exceed 72 hours.

In the renumbered TS 3.6.I.3, the reference to Section 3.6.B.4.c is revised to Section 3.6.C.4.c due to renumbering, and flow path is revised to flowpath for consistency.

The end state in TS 3.6.G currently states:

> *If the above requirements are not met, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the next 30 hours.*

The end state in the renumbered TS 3.6.I is revised as follows:

> If the above requirements are not met, be in HOT SHUTDOWN within the next 6 hours and be less than 350°F and 450 psig within the next 12 hours.

TS 3.6.H currently states:

> *H. The requirements of Specification 3.6.B.2 above may be modified to allow utilization of protected condensate storage tank water with the auxiliary steam generator feed pumps . . .*

TS 3.6.H is renumbered as TS 3.6.J and revised as follows:

J. The requirements of Specification 3.6.C.2 above may be modified to allow utilization of protected condensate storage tank water with the auxiliary feedwater pumps . . .

The following paragraphs are added in the Basis for TS 3.6:

> The Auxiliary Feedwater System provides a source of feedwater to the secondary side of the steam generators at times when the Feedwater System is not available, thereby maintaining heat sink capabilities of the steam generators. The Auxiliary Feedwater System provides heat removal until normal feedwater flow is restored or until an orderly cooldown to Reactor Coolant System conditions where the Residual Heat Removal System can be placed in service. The Auxiliary Feedwater System for each unit consists of two motor driven pumps, one turbine driven pump, a 110,000 gallon protected condensate storage tank, and associated common

piping, redundant headers, valves, controls, and instrumentation. Although the flowpaths from the pumps to the steam generators include common piping, the configuration of the system provides two redundant flowpaths. The components in one flowpath are supplied by the H emergency bus, while the other is supplied by the J emergency bus. The auxiliary feedwater design basis accident is a loss of normal feedwater with offsite power available (the reactor coolant pumps running). The auxiliary feedwater flow required to remove the heat and cool the unit to residual heat removal conditions for this design basis case can be provided by any combination of two auxiliary feedwater pumps.

Refer to the Basis of Specification 4.8 for a discussion of auxiliary feedwater pump operability considerations.

Regarding the allowed outage times for auxiliary feedwater pump inoperability, Specification 3.6.E allows 7 days versus a 72 hour allowed outage time in Specification 3.6.F.1. The longer allowed outage time is based on the reduced decay heat following refueling and prior to reactor criticality.

In the unlikely event of loss of auxiliary feedwater capability on the affected unit (i.e., with all required auxiliary feedwater pumps inoperable or with both redundant flowpaths having an inoperable component or instrumentation), the required action is to immediately initiate action to restore operability of one inoperable pump or of the inoperable component or instrumentation in one flowpath. With such a loss of auxiliary feedwater capability, the unit is in a seriously degraded condition. In this condition, the unit should not be perturbed by any action, including a power change, which could result in a plant transient or trip. The seriousness of this condition requires that action be taken immediately to restore operability, where immediately means the required action should be pursued without delay and in a controlled manner. Under these circumstances, Specification 3.0.1 and all other required actions directing mode changes are suspended until one inoperable pump or the inoperable component or instrumentation in one flowpath is restored to operable status, because taking those actions could place the unit in a less safe condition.

In the TS 3.6 Basis, steam driven auxiliary feedwater pump is revised to turbine driven auxiliary feedwater pump for consistency.

The References for TS 3.6 to the FSAR are revised to reflect the UFSAR (versus FSAR) Section titles and to add other sections for completeness.

As a result of TS 3.6.B.4.c being renumbered as TS 3.6.C.4.c, references to TS 3.6.B.4.c in the Bases for TSs 3.9 and 3.16 are revised to TS 3.6.C.4.c.

In TSs 4.8.A.1.a and 4.8.A.2.a, flow path(s) is revised to flowpath(s) for consistency.

TS 4.8.A.3.a currently states:

a. *Verify that the auxiliary feedwater pumps perform satisfactorily when tested in accordance with Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for the turbine driven pump.*

TS 4.8.A.3.a is revised as follows:

a. Verify that the auxiliary feedwater pumps perform satisfactorily when tested in accordance with Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for the turbine driven pump. Note that the developed head test of the turbine driven pump is required to be performed within 24 hours after reaching HOT SHUTDOWN.

TSs 4.8.A.4a and 4.8.A.4b currently state:

4a. Within 72 hours prior to Reactor Coolant System temperature and pressure exceeding 350°F and 450 psig, respectively, the motor driven auxiliary feedwater pumps shall be flow tested from the 110,000 gallon above ground Emergency Condensate Storage Tank to the steam generators.

4b. Wthin 72 hours after achieving reactor criticality, the steam turbine driven auxiliary feedwater pump shall be flow tested from the 110,000 gallon above ground Emergency Condensate Storage Tank to the steam generators. The provisions of Specification 4.0.4 are not applicable.

TSs 4.8.A.4a and 4.8.A.4b are deleted and new flow path alignment requirements are inserted in TS 4.8.A.4 as follows:

4. Whenever the unit's Reactor Coolant System temperature and pressure have been less than 350°F and 450 psig, respectively, for a period greater than 30 days, prior to Reactor Coolant System temperature and pressure exceeding 350°F and 450 psig, respectively, verify proper alignment of the required auxiliary feedwater flowpaths by verifying flow from the 110,000 gallon above ground Emergency Condensate Storage Tank to the steam generators from each of the auxiliary feedwater pumps.

In TS 4.8.A.5.b, flow path is revised to flowpath for consistency.

New AFW automatic valve and pump surveillances are inserted in TS 4.8.A.6 as follows:

6. On an 18-month frequency:
   a. Verify each auxiliary feedwater automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.
   b. Verify each auxiliary feedwater pump starts automatically on an actual or simulated actuation signal. Note that this surveillance is required to be performed for the turbine driven pump within 24 hours after reaching HOT SHUTDOWN.

TS 4.8.B currently states:

B. Acceptance Criteria

The pump and valve tests, except the system flow test, shall be considered satisfactory if they meet the ASME Section XI Inservice Testing Program acceptance criteria.

The system flow tests during unit startup from COLD SHUTDOWN or REFUELING SHUTDOWN shall be considered satisfactory if the control board indication demonstrates that flow paths exist to each steam generator.

TS 4.8.B is revised as follows:

B. Acceptance Criteria

The pump and valve tests shall be considered satisfactory if they meet the ASME Section XI Inservice Testing Program acceptance criteria.

The flowpath alignment tests during unit startup from REFUELING, COLD, or INTERMEDIATE SHUTDOWN shall be considered satisfactory if the control board indication demonstrates that flowpaths exist to each steam generator.

In the first paragraph in the TS 4.8 Basis, flow path(s) is revised to flowpath(s) in four places for consistency.

The second paragraph in the Basis for TS 4.8 currently states:

The auxiliary feedwater pump will be tested periodically in accordance with ASME Section XI to demonstrate operability. The pumps are flow tested on recirculation to the 110,000 gallon Emergency Condensate Storage Tank. Valves in the flow path to

the steam generators and cross-connect flow path are tested periodically in accordance with ASME Section XI.

The second paragraph in the Basis for TS 4.8 is revised as follows:

Valves in the auxiliary feedwater flowpaths to the steam generators and cross-connect flowpath are tested periodically in accordance with ASME Section XI. The auxiliary feedwater pumps are tested periodically in accordance with ASME Section XI to demonstrate operability. Verification of the developed head of each auxiliary feedwater pump ensures that the pump performance has not degraded. Flow and differential head tests are normal inservice testing requirements. Because it is sometimes undesirable to introduce cold auxiliary feedwater into the steam generators while they are operating, the inservice testing is typically performed on recirculation flow to the 110,000 gallon Emergency Condensate Storage Tank.

The following paragraph is added in the Basis for TS 4.8 as the third paragraph:

Appropriate surveillance and post-maintenance testing is required to declare equipment OPERABLE. Testing may not be possible in the applicable plant conditions due to the necessary unit parameters not having been established. In this situation, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible, and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a condition where other necessary surveillance or post maintenance tests can be completed. Relative to the turbine driven auxiliary feedwater pump, Specification 4.8.A.3.a is modified by a note indicating that the developed head test of the turbine driven pump should be deferred until suitable conditions are established; this deferral is required because there may be insufficient steam pressure to perform the test.

The last sentence in the current third paragraph, relocated as the fourth paragraph, in the Basis for TS 4.8 currently states:

The turbine driven pump is not required to be OPERABLE when the unit is shutdown and therefore, is not tested during periods of shutdown.

This sentence is being deleted because it is no longer appropriate.

The References for TS 4.8 to the UFSAR are revised to add another section for completeness.

Safety Implications of the Proposed Change

The proposed change revises TS 3.6 primarily to eliminate the inconsistency between the AFW pump requirements and to add an AFW flowpath AOT and required actions. In addition, the TS 3.6 requirements and the TS 4.8 surveillances are being revised for consistency with ITS. The proposed TS change does not modify the AFW System or support systems. There is no impact on the capability of the system to perform its design function, nor is there any change in the likelihood that the system will fail to perform since surveillance tests will continue to ensure that the AFW System can perform its required safety function. As a result, the proposed change does not involve any increase in the probability or consequences of any accident or malfunction of equipment important to safety previously evaluated. The proposed TS change involves no physical changes to the plant, nor is there any revision to the design of the plant or the AFW System. Therefore, there is no possibility of a new or different kind of accident or malfunction of equipment important to safety being created. The proposed TS change makes no actual changes to the condition or performance of equipment or systems used in accident mitigation or assumed in any accident analysis. Thus, there is no reduction in the margin of safety as described in the basis for any TS. Furthermore, the proposed TS change will not result in a design basis limit for a fission product barrier being exceeded or altered, nor will it result in a departure from a method of evaluation used in establishing the design bases or in the safety analyses, as a dependable auxiliary feedwater supply will continue to be available. Thus, the proposed TS change has no adverse impact on safety.

No Significant Hazards Consideration

The requirements of 10CFR50.92 have been reviewed as they relate to the proposed Technical Specifications change to Section 3.6 for Surry Units 1 and 2. The proposed change revises TS 3.6 primarily to eliminate the inconsistency between the auxiliary feedwater (AFW) pump requirements and to add an AFW flowpath allowed outage time and required actions. In addition, the TS 3.6 requirements and the TS 4.8 surveillances are being revised for consistency with Improved Technical Specifications. Editorial changes are made in the TSs for consistent terminology. The proposed Technical Specifications change does not involve a significant hazards consideration because operation of Surry Units 1 and 2 in accordance with this change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed revision to the AFW pump and flowpath requirements, as well as the revision of AFW surveillances, does not increase the probability of accidents previously evaluated since the AFW System is not required to operate until after the occurrence of the previously evaluated accidents. The change does not impact any of the initiators of the accidents. The proposed change does not involve a significant increase in the consequences of an accident previously evaluated because the AFW System will continue to perform its intended safety function for these accidents. The

operation of the AFW System with the revised required action statements and added surveillances continues to meet the applicable design criteria.

2. Create the possibility of a new or different kind of accident from any accident previously identified.

   The safety function of the AFW System continues to be the same and is met using the same equipment. The change does not involve any plant modifications and does not revise the design of the plant or the AFW System. Operation of the AFW System with the revised required action statements and revised surveillances continues to meet the applicable design criteria and is consistent with the Surry accident analyses. Therefore, the proposed change does not introduce any new failures that could create the possibility of a new or different kind of accident from any accident previously identified.

3. Involve a significant reduction in a margin of safety.

   The revised requirements for the AFW pumps and flowpaths, as well as the revision of AFW surveillances, continue to assure that the margins of safety assumed in the accidents and transients that rely upon operation of the AFW System are maintained. The proposed required action statements appropriately place the plant in a safe condition for the circumstances being addressed. Therefore, this proposed revision does not affect the margin of safety.

Environmental Assessment

This amendment request meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) as follows:

(i) The amendment involves no significant hazards consideration.

As described above, the proposed change to TS 3.6 requirements does not involve a significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed TS change does not involve the installation of any new equipment or the modification of any equipment that may affect the types or amounts of effluents that may be released offsite. Operation of the AFW System with the revised required actions, along with the revised surveillances, continues to satisfy the applicable design criteria and accident analyses. Therefore, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed TS change does not involve plant physical changes that affect radiation exposure. Operation of the AFW System with the revised required actions and the revised surveillances continues to satisfy the applicable design criteria and accident analyses. Therefore, there is no significant increase in individual or cumulative occupational radiation exposure.

Based on the above assessment, Dominion concludes that the proposed change meets the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.22 relative to requiring a specific environmental assessment or impact statement by the Commission.

Conclusion

The proposed change revises TS 3.6 primarily to eliminate the inconsistency between the AFW pump requirements and to add an AFW flowpath AOT and required actions. In addition, the TS 3.6 requirements and the TS 4.8 surveillances are being revised for consistency with ITS. Basis changes for TS 3.6 and 4.8 are made consistent with the TS revisions. Editorial changes are made in the TSs and the Bases for consistent terminology. The Station Nuclear Safety and Operating Committee (SNSOC) and the Management Safety Review Committee (MSRC) have reviewed the proposed change and have concluded that this change does not involve a significant hazards consideration and will not endanger the health and safety of the public.

References

1. NRC Letter to Virginia Electric and Power Company, September 25, 1979 – NRC Requirements for Auxiliary Feedwater Systems at Surry Power Station, Units 1 and 2

2. Virginia Electric and Power Company Letter to the NRC, December 28, 1979, Serial No. 1178 - Amendment of Operating Licenses - Surry Power Station Unit Nos. 1 and 2 - Proposed Technical Specification Change No. 81

3. NRC Letter to Virginia Electric and Power Company, April 27, 1982 - Issuance of Amendments 77/78 to Facility Operating Licenses DPR-32/DPR-37 for Surry Power Station Units 1 and 2 – Revision of Technical Specifications Related to the Auxiliary Feedwater System

4. NRC Letter to Virginia Electric and Power Company, August 2, 1990 - Issuance of Amendments 143/140 to Facility Operating Licenses DPR-32/DPR-37 for Surry Power Station Units 1 and 2 – Auxiliary Feedwater Cross-connect Requirements

5. NRC Letter to Virginia Electric and Power Company, March 12, 1993 - Issuance of Amendments 175/174 to Facility Operating Licenses DPR-32/DPR-37 for Surry Power Station Units 1 and 2 – Upgrading of Section 4.0 of the Technical Specifications

6. NRC Letter to Virginia Electric and Power Company, March 7, 1994 - Issuance of Amendments 190/190 to Facility Operating Licenses DPR-32/DPR-37 for Surry Power Station Units 1 and 2 – Auxiliary Feedwater System Testing

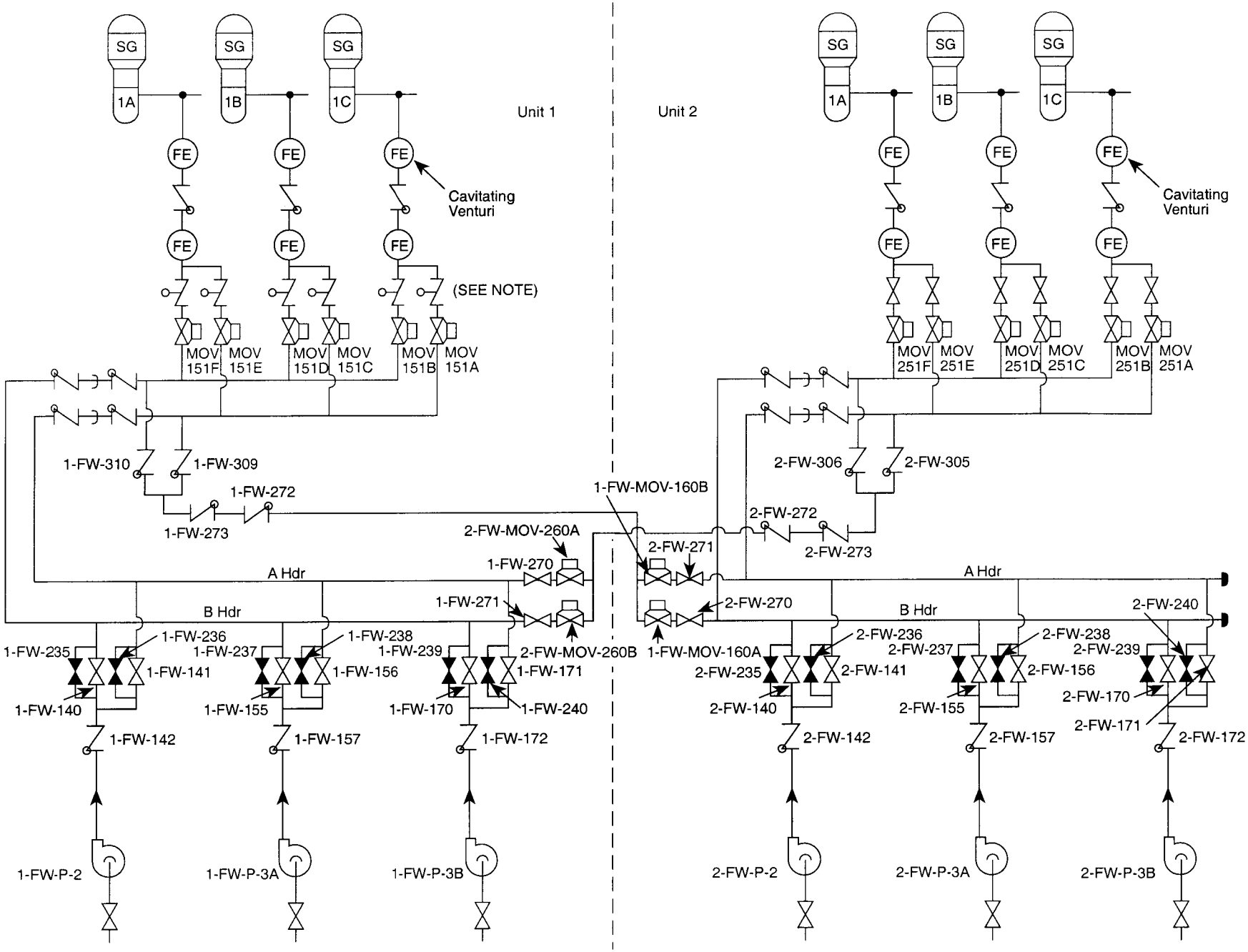
7. Surry Updated Final Safety Analysis Report Section 10.3.5, Condensate and Feedwater Systems

8. Surry Updated Final Safety Analysis Report Section 14.2.11, Loss of Normal Feedwater

9. Surry Updated Final Safety Analysis Report Section 14.3.2, Rupture of a Main Steam Pipe

10. Surry Updated Final Safety Analysis Report Appendix 14B, Effects of Piping System Breaks Outside Containment

11. NUREG-1431, Standard (Improved) Technical Specifications for Westinghouse Plants – Section 3.7.5, Auxiliary Feedwater System



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AUXILIARY FEEDWATER FLOW DIAGRAM

NOTE: Letter Serial No. 03-636, dated February 9, 2004, committed to install stop check valves downstream of each of the AFW Steam Generator Isolation MOVs. The valves have been installed on Unit 1 and will be installed on Unit 2 during the 2005 refueling outage.