VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 3, 2006

10CFR50.92

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

Serial No. 06-791
NLOS/GDM R1
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 LICENSE AMENDMENT REQUEST
CONTAINMENT SUMP INSPECTION SURVEILLANCE

Pursuant to 10 CFR 50.90, Virginia Electric and Power Company (Dominion) requests amendments, in the form of changes to the Technical Specifications (TS) to Facility Operating License Numbers DPR-32 and DPR-37 for Surry Power Station Units 1 and 2, respectively. The proposed amendment would revise the TS surveillance requirements related to inspection of the containment sump trash racks and screens, Inside Recirculation Spray (RS) pump wells, and Outside RS and Low Head Safety Injection (LHSI) pump suction inlets. The revised TS surveillance requirements are necessary to accommodate inspection of the new RS and LHSI strainer assemblies that will be installed as part of Dominion's resolution of the issues raised in NRC Generic Safety Issue 191 and Generic Letter 2004-02. A discussion of the proposed change is provided in Attachment 1. The marked-up and typed proposed TS pages are provided in Attachments 2 and 3, respectively. The associated Bases changes are provided for information only and will be implemented in accordance with the TS Bases Control Program and 10 CFR 50.59. Additional TS changes associated with the resolution of GSI-191 and GL 2004-02 were previously provided to the NRC in a letter dated January 31, 2006 (Serial No. 06-014).

We have evaluated the proposed amendment and have determined that it does not involve a significant hazards consideration as defined in 10 CFR 50.92. The basis for our determination is included 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 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed change.

The proposed TS change has been reviewed and approved by the Station Nuclear Safety and Operating Committee.

If you have any questions or require additional information, please contact Mr. Gary D. Miller at (804) 273-2771.

Sincerely,

Gerald T. Bischof
Vice President – Nuclear Engineering

Attachments

1. Discussion of Change
2. Proposed Technical Specifications Pages (Mark-Up)
3. Proposed Technical Specifications Pages (Typed)

Commitments made in this letter: None

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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 Gerald T. Bischof, who is Vice President – Nuclear Engineering, 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 3rd day of October, 2006.

My Commission Expires: May 31, 2010.

Vicki L. Hull
Notary Public

(SEAL)

ATTACHMENT 1

DISCUSSION OF CHANGE

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

DISCUSSION OF CHANGE

1.0 Description

Virginia Electric and Power Company (Dominion) proposes a change to the Surry Power Station Units 1 and 2 Technical Specifications (TS) pursuant to 10 CFR 50.90. The proposed change will revise the containment sump inspection surveillances for the Recirculation Spray (RS) and Low Head Safety Injection (LHSI) systems due to planned modification of the containment sump design and also makes the surveillance requirement wording consistent with NUREG 1431, Revision 3, Volumes 1 and 2, *Standard Technical Specifications – Westinghouse Plants*, to the extent practical. The associated TS Bases will also be revised and are provided for the NRC's information.

The proposed TS change has been reviewed, and it has been determined that no significant hazards consideration exists as defined in 10 CFR 50.92. In addition, it has been determined that the change qualifies for categorical exclusion from an environmental assessment as set forth in 10 CFR 51.22(c)(9); therefore, no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed TS change.

2.0 Proposed Change

The following specific changes to the Surry Units 1 and 2 TS are proposed:

TS 4.5 Spray Systems – Delete the following TS 4.5.D surveillance paragraph for containment sump inspections:

> *D. A visual inspection of the containment sump and the inside recirculation spray pump wells and the engineered safeguards suction inlets shall be performed once per 18 months and/or after major maintenance activities in the containment. The inspection should verify that the containment sump and pump wells are free of debris that could degrade system operation and that the containment sump components (i.e., trash racks, screens) are properly installed and show no sign of structural distress or excessive corrosion.*

and replace with the following paragraph:

> *D. Verify, by visual inspection once per 18 months, that the recirculation spray containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.*

TS 4.5 Basis – Delete the following paragraph in the TS basis that specifically discusses the containment sump inspection surveillance:

> *Performing the containment sump and pump well inspections will reduce the potential for system degradation due to sump debris associated with refueling*

activities or major maintenance activities as well as reduce wear on the inside containment recirculation spray pumps during dry testing. Ensuring proper installation and structural integrity of the trash racks and sump screens will prevent ingress of debris generated during the DBA and will allow long term containment cooling and recirculation mode cooling of the core.

and replace it with the following paragraph:

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

TS 4.11 Safety Injection System Tests

Delete the following TS 4.11.C.5.c surveillance paragraph for containment sump inspections:

c. *Verifying, by visual inspection, that each low head safety injection pump suction inlet from the containment sump is free of debris that could degrade system operation. Perform each refueling outage and/or after major maintenance activities in the containment.*

and replace with the following paragraph:

c. *Verifying by visual inspection that the low head safety injection containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.*

Add the following paragraph to the TS 4.11 Basis section.

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

3.0 Background

NRC Generic Safety Issue (GSI) 191, *Assessment of Debris Accumulation on PWR Sump Performance*, addresses concerns associated with containment sump performance due to debris accumulation as a result of a design basis accident. Generic Letter (GL) 2004-02, *Potential Impact of Debris Blockage on Emergency Recirculation*

During Design Basis Accidents at Pressurized-Water Reactors, requested license holders of operating pressurized water reactors (PWRs) to evaluate the operation of the Emergency Core Cooling System and Containment Spray System to ensure that post-accident debris blockage will not impede or prevent the operation of the systems in recirculation mode during loss of coolant accidents (LOCAs) or other high energy line break (HELB) accidents for which sump recirculation is required. If concerns with expected sump performance were identified, the licensee was required to take additional actions to ensure system function.

In response to the NRC's request, Dominion evaluated the existing Surry Units 1 and 2 containment sump design and determined that the debris generated in a LOCA could result in head loss across the containment recirculation sump screen during recirculation mode. Consequently, as discussed in Reference 9.1, Dominion is planning to modify the containment sump design for Surry Units 1 and 2 to address the identified design issues. Specifically, the planned sump design utilizes modular strainer assemblies for the RS and LHSI systems to meet the new design requirements and eliminates the existing sump trash racks and screens. Therefore, the existing specific TS surveillance discussion associated with inspection of the containment sump trash racks and screens, the Inside RS (IRS) pump wells, and the Outside RS (ORS) and LHSI pump suction inlets is being replaced by a more general requirement to inspect containment sump components. Use of the more general inspection requirement facilitates the phased implementation of the sump modifications for Surry Units 1 and 2 over multiple outages without requiring interim/multiple TS changes to address different sump component configurations between units pending completion of the sump modifications. The proposed wording will continue to ensure that necessary containment sump inspections are performed regardless of the containment sump configuration installed. In addition, the current TS requirement to perform containment sump inspections after major maintenance activities in containment is being deleted. This change is acceptable because containment closeout inspections are performed as part of normal work practice to ensure that the containment is free of debris following activities in containment, and are not requirements to be included in the TS. Upon completion of maintenance, appropriate post-maintenance testing is required to declare the equipment operable. The sump inspections are still required to be performed every 18 months to coincide with planned refueling outages, which is typically when major maintenance activities are performed. The proposed wording is also consistent with NUREG 1431, Revision 3, Volumes 1 and 2, *Standard Technical Specifications – Westinghouse Plants*, to the extent practical.

Additional TS changes associated with the resolution of GSI-191 and GL 2004-02 were previously addressed in a separate TS change request and submitted to the NRC in References 9.2 through 9.5.

4.0 Licensing Basis

The current TS surveillance requirements for performing containment sump inspections were incorporated into the Surry Units 1 and 2 TS by Amendments 132/132 in

August 1989 (Reference 9.6). Those amendments also revised the existing IRS pump testing surveillance requirements and added new testing requirements. The portion of that TS amendment applicable to the containment sump component inspections was requested to ensure that the containment sump trash racks/screens were installed properly and maintained in satisfactory condition such that debris would not be permitted to enter the suction piping of the RS and LHSI pumps. This action was taken in response to previously identified concerns associated with sump component condition and debris, which were documented in Surry Licensee Event Report 88-017-01 dated November 7, 1988, and several NRC inspection reports.

TS Amendments 132/132 incorporated surveillance requirements into TS 4.5, *Spray Systems*, to perform visual inspection of the containment sump and the inside recirculation spray pump wells and the engineered safeguards suction inlets (i.e., ORS pumps) at least once each refueling period and/or after major maintenance activities in the containment. The inspection was to verify that the containment sump and pump wells were free of debris that could degrade system operation and that the containment sump components (i.e., trash racks, screens) were properly installed and showed no sign of structural distress or excessive corrosion. Similar surveillance requirements were also incorporated into TS 4.11, *Safety Injection System Tests*, for the sump and the LHSI pump suction inlets. The surveillance periodicity for both TS was changed to "once per 18 months" by TS Amendments 213/213 dated June 1998 (Reference 9.7).

5.0 Technical Analysis

Each Surry unit is a three-loop Westinghouse PWR with a subatmospheric containment design. The engineered safeguards features (ESF) that mitigate a LOCA or HELB event include:

- A safety injection (SI) system that injects borated water into the cold legs of all three reactor coolant loops,

- Two separate LHSI subsystems, either of which provides long-term removal of decay heat from the reactor core, and

- Two separate subsystems of the spray system - containment spray (CS) and RS - that operate together to reduce the containment temperature, return the containment pressure to subatmospheric, and remove heat from the containment. The RS system includes the IRS and ORS subsystems and maintains the containment subatmospheric and transfers heat from the containment to the Service Water system.

Existing Containment Sump Design

The containment sump provides suction points for the four RS pumps and the two LHSI pumps in the recirculation mode. The containment sump consists of two sumps, the aerated drains (DA) sump and the RS sump, separated by a small dam. Both the DA

sump and the RS sump are enclosed by a platform and trash grate assembly. The existing containment sump screen is a safety related Seismic Category I component/structure that surrounds the containment sump and is designed to exclude debris large enough to cause the RS ring nozzles to become clogged or to affect the operability of the RS and LHSI pumps/systems.

The containment sump screen is divided into two stages. The first stage is a trash rack and roughing screen arrangement completely surrounding the sump. The second stage consists of cylindrical screens of fine mesh over each suction point. The first stage of the screen assembly consists of inclined bars, which act as trash screens to prevent large pieces of debris from reaching the sump. Inside the bars are two layers of screens, the first layer consists of a coarse mesh and the second layer consists of a fine mesh. The first stage screen is divided at the center line of the sump by a screen partition so that the physical failure of either half of the first stage will have little or no effect upon the operation of the other half. The second-stage cylindrical screens extend from the containment liner in the sump to the decking plate above the sump.

After an accident, the sump screen is designed to provide filtered borated water to the RS and LHSI system pumps operating at their rated flow rates over the entire range of sump water level.

Planned Containment Sump Modifications

As a result of evaluations performed in response to GSI-191 and GL 2004-02, modifications will be made to the existing containment sump design. Specifically, the current plan is to install two separate strainer assemblies, one for the RS system piping and the other for the LHSI system piping. Each strainer assembly is designed to be mounted in a modular format on the containment floor and around the containment sump. Each module contains a number of fins attached to the body of the module, and each module is bolted to the containment floor and connected to each other by flexible metal seals.

Pump suction openings located in the sump will be connected to their associated strainer assemblies by installing new piping. The new piping within the sump will be designed and installed to accommodate the existing sump instrumentation, piping and IRS pumps. The new strainer assembly will be designed to provide access to the sump piping for testing. The material used in the construction of the strainer modules including fins, base plates, and piping will be corrosion-resistant stainless steel and compatible with the existing RS and LHSI pumps' suction piping. The strainer assemblies will be designed to prevent particles larger than 0.0625 inches from entering the RS and LHSI systems.

6.0 Regulatory Safety Analysis

The proposed change to the Surry Units 1 and 2 TS revises the wording of the surveillance requirements for inspection of the containment sump, the IRS pump wells,

and the ORS and LHSI pump suction inlets to accommodate inspection of the new RS and LHSI strainer assemblies that will be installed as part of Dominion's resolution of the issues raised in NRC Generic Safety Issue 191 and Generic letter 2004-02. The change also deletes the requirement to perform containment sump inspections after major maintenance activities in containment. As noted above, containment closeout inspections are performed as part of normal work practice to ensure that the containment is free of debris following activities in containment, and are not requirements to be included in the TS. Also, upon completion of maintenance, appropriate post-maintenance testing is required to declare the equipment operable. The sump inspections are still required to be performed every 18 months to coincide with planned refueling outages, which is typically when major maintenance activities are performed. The proposed wording is also consistent with NUREG 1431, Revision 3, Volumes 1 and 2, *Standard Technical Specifications – Westinghouse Plants*, to the extent practical.

The proposed TS change is administrative in nature, as it does not involve any changes in station operation or result in any physical modifications to the plant. Inspection of containment sump components for debris accumulation and structural integrity will continue to be performed. The more general nature of the TS surveillance wording is being implemented as a clarification to facilitate inspection of the containment sump in its current configuration, as well as after containment sump modifications have been implemented in response to GSI-191 and GL 2004-002. The proposed TS surveillance wording has no effect on the underlying intent of the TS surveillance requirement, which is to ensure that the containment sump and its components are capable of performing their design function.

Applicable Regulatory Requirements

10 CFR 50.46 requires the ECCS to have the capability to provide long-term cooling of the reactor core following a LOCA, i.e., the ECCS must be able to remove decay heat, so that the core temperature is maintained at an acceptably low value for the extended period of time required by the long-lived radioactivity remaining in the core. Similarly, applicable General Design Criteria (GDCs) in Appendix A to 10 CFR Part 50 include the following:

Criterion 35--Emergency core cooling. A system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented and (2) clad metal-water reaction is limited to negligible amounts....

Criterion 36--Inspection of emergency core cooling system. The emergency core cooling system shall be designed to permit appropriate periodic inspection of important components, such as spray rings in the reactor pressure vessel, water injection nozzles, and piping, to assure the integrity and capability of the system.

Criterion 38--Containment heat removal. A system to remove heat from the reactor containment shall be provided. The system safety function shall be to reduce rapidly, consistent with the functioning of other associated systems, the containment pressure and temperature following any loss-of-coolant accident and maintain them at acceptably low levels...

Criterion 39--Inspection of containment heat removal system. The containment heat removal system shall be designed to permit appropriate periodic inspection of important components, such as the torus, sumps, spray nozzles, and piping to assure the integrity and capability of the system.

The GDC included in Appendix A to 10 CFR Part 50 did not become effective until May 21, 1971. The Construction Permits for Surry Units 1 and 2 were issued prior to May 21, 1971; consequently, these units were not subject to GDC requirements. (Reference SECY-92-223 dated September 18, 1992.) However, the plant was designed to meet the intent of the draft GDC.

Continued compliance with the applicable regulatory requirements is not affected since the surveillance requirement for inspection of containment sump components (including the RS and LHSI strainer components) is being retained to ensure that required system functions are not affected.

The proposed change does not impact the condition or performance of any plant structure, system or component and does not affect the initiators of any previously analyzed event or the assumed mitigation of accident or transient events since the plant will be operated in the same manner and within the same operating limits that are currently in place. Inspection of containment sump components for debris and structural integrity will continue to be performed. As a result, the proposed change to the Surry TS does not: 1) involve any increase in the probability or the consequences of any accident or malfunction of equipment important to safety previously evaluated since neither accident probabilities nor consequences are being affected by this proposed change, 2) create the possibility of a new or different kind of accident or malfunction of equipment important to safety from any previously evaluated, or 3) involve a significant reduction in the margin of safety.

7.0 Significant Hazards Consideration Determination

Virginia Electric and Power Company (Dominion) has reviewed the requirements of 10 CFR 50.92, relative to the proposed change to the Surry Units 1 and 2 Technical Specifications (TS), and determined that a Significant Hazards Consideration is not involved. The proposed change to the Surry Units 1 and 2 TS revises the wording of the surveillance requirements for inspection of the containment sump, Inside Recirculation Spray pump wells, and Outside Recirculation Spray and Low Head Safety Injection pump suction inlets to accommodate inspection of the new RS and LHSI strainer assemblies that are currently planned to be installed as part of Dominion's resolution of the issues raised in NRC Generic Safety Issue 191 and Generic Letter

2004-02. The change also deletes the current TS requirement to perform containment sump inspections after major maintenance activities in containment, since containment closeout inspections are performed as part of normal work practice to ensure that the containment is free of debris following activities in containment, and are not requirements to be included in the TS. The proposed wording is also consistent with NUREG 1431, Revision 3, Volumes 1 and 2, *Standard Technical Specifications – Westinghouse Plants*, to the extent practical.

The following discussion is provided to support the conclusion that the proposed change does not create a significant hazards consideration:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change does not impact the condition or performance of any plant structure, system or component. Furthermore, the proposed change does not affect the initiators of any previously analyzed event or the assumed mitigation of accident or transient events since the plant will be operated in the same manner and within the same operating limits that are currently in place. The proposed TS change is administrative in nature given that inspection of containment sump components for debris accumulation and structural integrity will continue to be performed. The revised TS surveillance wording is being implemented as a clarification to facilitate inspection of the containment sump in its current configuration, as well as after containment sump modifications have been implemented in response to GSI-191 and GL 2004-002. As a result, the proposed change to the Surry TS does not involve any increase in the probability or the consequences of any accident or malfunction of equipment important to safety previously evaluated since neither accident probabilities nor consequences are being affected by this proposed change.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change is administrative in nature and, as such, does not involve any changes in station operation or physical modifications to the plant. In addition, no changes are being made in the methods used to respond to plant transients that have been previously analyzed. No changes are being made to plant parameters within which the plant is normally operated or in the setpoints, that initiate protective or mitigative actions, since the plant will be operated in the same manner and within the same operating limits that are currently in place. Since plant operation will not be affected by this change, no new failure modes are being introduced. Therefore, the proposed change to the Surry TS does not create the possibility of a new or different kind of accident or malfunction of equipment important to safety from any previously evaluated.

3. Does the change involve a significant reduction in the margin of safety?

   The proposed change is administrative in nature given that inspection of the containment sump components for debris accumulation and structural integrity will continue to be performed on an established frequency. The more general nature of the TS surveillance wording is being implemented as a clarification to facilitate inspection of the containment sump in its current configuration, as well as after containment sump modifications have been implemented in response to GSI-191 and GL 2004-002. The proposed change does not impact station operation or any plant structure, system or component that is relied upon for accident mitigation. Furthermore, the margin of safety assumed in the plant safety analysis is not affected in any way by the proposed change since the plant will be operated in the same manner and within the same operating limits and setpoints that are currently in place. Therefore, the proposed change to the Surry Technical Specifications does not involve a significant reduction in the margin of safety.

8.0 Environmental Consideration

The proposed change to the Surry Units 1 and 2 TS revises the wording of the surveillance requirements for inspection of the containment sump, IRS pump wells, and ORS and LHSI pump suction inlets to accommodate inspection of the new RS and LHSI strainer assemblies that are currently planned to be installed as part of Dominion's resolution of the issues raised in NRC Generic Safety Issue 191 and Generic letter 2004-02. The proposed TS change meets the eligibility criteria for categorical exclusion from an environmental assessment set forth in 10 CFR 51.22(c)(9), as discussed below:

(i) The license condition involves no significant hazards consideration.

As discussed in the evaluation of the Significant Hazards Consideration above, the proposed change is administrative in nature given that inspection of the containment sump components for debris accumulation and structural integrity will continue to be performed on an established frequency. The more general nature of the TS surveillance wording is being implemented as a clarification to facilitate inspection of the containment sump in its current configuration, as well as after containment sump modifications have been implemented in response to GSI-191 and GL 2004-002. Consequently, the proposed change to TS and associated Bases for Surry Power Station will not involve a significant increase in the probability or consequences of an accident previously evaluated. The possibility of a new or different kind of accident from any accident previously evaluated is also not created, and the proposed change does not involve a significant reduction in a margin of safety. Therefore, the proposed change to the TS and associated Bases meet the requirements of 10 CFR 50.92(c) and do 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.

No changes to plant systems, structures or components are proposed, and no new operating modes are established. Therefore, the proposed administrative change to the TS and associated Bases regarding the performance of containment sump inspections will not significantly change the types or amounts of effluents that may be released offsite.

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

The proposed change is administrative in nature. No changes to plant systems, structures or components are proposed, and no new operating modes are established. Therefore, the proposed change will not increase radiation levels, and consequently, individual and cumulative occupational exposures are unchanged.

Based on the above, the proposed change does not have a significant effect on the environment, and meets the criteria of 10 CFR 51.22(c)(9). Therefore, the proposed TS change qualifies for a categorical exclusion from a specific environmental review by the Commission, as described in 10 CFR 51.22.

9.0 References

9.1 Letter from Dominion Energy Kewaunee, Inc., Dominion Nuclear Connecticut, Inc., Virginia Electric and Power Company to the USNRC dated September 1, 2005 (Serial No. 05-212), "Dominion Energy Kewaunee, Inc., Dominion Nuclear Connecticut, Inc., Virginia Electric and Power Company, Kewaunee Power Station, Millstone Power Station Units 2 and 3, North Anna Power Station Units 1 and 2, Surry Power Station Units 1 and 2, Response to Generic Letter 2004-02: Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors."

9.2 Letter from Virginia Electric and Power Company to the USNRC dated January 31, 2006 (Serial No. 06-014), "Virginia Electric and Power Company, Surry Power Station Units 1 And 2, Proposed Technical Specification Change and Supporting Analyses Revisions to Address Generic Safety Issue 191."

9.3 Letter from Virginia Electric and Power Company to the USNRC dated February 23, 2006 (Serial No. 06-014A), "Virginia Electric and Power Company, Surry Power Station Units 1 and 2, Proposed Technical Specification Change and Supporting Analyses Revisions to Address Generic Safety Issue 191, Revised Marked-Up Technical Specifications Pages."

9.4 Letter from Virginia Electric and Power Company to the USNRC dated June 21, 2006 (Serial No. 06-503), "Response to Request for Additional

Information (RAI) on Proposed Technical Specification Change to Address Generic Safety Issue 191 (TAC Nos. MC9724 and MC9725)."

9.5 Letter from Virginia Electric and Power Company to the USNRC dated July 28, 2006 (Serial No. 06-545), "Response to Request for Additional Information (RAI) and Supplement to Proposed Technical Specification Change and Supporting Safety Analyses Revisions to Address Generic Safety Issue 191."

9.6 Letter from the USNRC to Mr. W. L. Stewart of Virginia Electric and Power Company dated August 28, 1989 (Serial No. 89-648), "Subject: Surry Units 1 and 2 – Issuance of Amendments and Relief Re: Inside Recirculation Spray Pumps (TAC Nos. 72955 and 72956)."

9.7 Letter from the USNRC to Mr. J. P. O'Hanlon dated June 11, 1998 (Serial No. 98-369), "Subject: Surry Units 1 and 2 – Issuance of Amendments Re: Clarification of Refueling Interval Surveillance Frequency (TAC Nos. MA0364 and MA0365)."

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATIONS PAGES (MARK-UP)

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

2. By verifying that each motor-operated valve in the recirculation spray flow paths performs satisfactorily when tested in accordance with the Inservice Testing Program.

3. By verifying each spray nozzle is unobstructed following maintenance which could cause nozzle blockage.

C. Each weight-loaded check valve in the containment spray and outside containment recirculation spray subsystems shall be demonstrated OPERABLE once per 18 months by cycling the valve one complete cycle of full travel and verifying that each valve opens when the discharge line of the pump is pressurized with air and seats when a vacuum is applied.

D. A visual inspection of the containment sump and the inside containment recirculation spray pump wells and the engineered safeguards suction inlets shall be performed once per 18 months and/or after major maintenance activities in the containment. The inspection should verify that the containment sump and pump wells are free of debris that could degrade system operation and that the sump components (i.e., trash racks, screens) are properly installed and show no sign of structural distress or excessive corrosion.

INSERT 1

The recirculation spray pumps outside the containment have the capability of being dry-run and flow tested. The test of an outside recirculation spray pump is performed by closing the containment sump suction line valve and the isolation valve between the pump discharge and the containment penetration. This allows the pump casing to be filled with water and the pump to recirculate water through a test line from the pump discharge to the pump casing.

With a system flush conducted to remove particulate matter prior to the installation of spray nozzles and with corrosion resistant nozzles and piping, it is not considered credible that a significant number of nozzles would plug during the life of the unit to reduce the effectiveness of the subsystems. Therefore, an inspection or air or smoke test of the nozzles following maintenance which could cause nozzle blockage is sufficient to indicate that plugging of the nozzles has not occurred.

The spray nozzles in the refueling water storage tank provide means to ensure that there is no particulate matter in the refueling water storage tank and the containment spray subsystems which could plug or cause deterioration of the spray nozzles. The nozzles in the tank are identical to those used on the containment spray headers. The flow test of the containment spray pumps and recirculation to the refueling water storage will indicate any plugging of the nozzles by a reduction of flow through the nozzles.

Performing the containment sump and pump well inspections will reduce the potential for system degradation due to sump debris associated with refueling activities or major maintenance activities as well as reduce wear on the inside containment recirculation spray pumps during dry testing. Ensuring proper installation and structural integrity of the trash racks and sump screens will prevent ingress of debris generated during the DBA and will allow long term containment cooling and recirculation mode cooling of the core.

INSERT 2

References

FSAR Section 6.3.1, Containment Spray Pumps

FSAR Section 6.3.1, Recirculation Spray Pumps

c. Power may be restored to any valve or breaker referenced in Specifications 4.11.C.4.a and 4.11.C.4.b for the purpose of testing or maintenance provided that not more than one valve has power restored at one time, and the testing and maintenance is completed and power removed within 24 hours.

5. Once per 18 months by:

a. Verifying that each automatic valve capable of receiving a safety injection signal, actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

b. Verifying that each charging pump and safety injection pump circuit breaker actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

c. Verifying, by visual inspection, that each low head safety injection pump suction inlet from the containment sump is free of debris that could degrade system operation. Perform each refueling outage and/or after major maintenance activities in the containment.

INSERT 3

Basis

Complete system tests cannot be performed when the reactor is operating because a safety injection signal causes containment isolation. The method of assuring operability of these systems is therefore to combine system tests to be performed during unit outages, with more frequent component tests, which can be performed during reactor operation.

The system tests demonstrate proper automatic operation of the Safety Injection System. A test signal is applied to initiate automatic operation action and verification is made that the components receive the safety injection signal in the proper sequence. The test may be performed with the pumps blocked from starting. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.

During reactor operation, the instrumentation which is depended on to initiate safety injection is checked periodically, and the initiating circuits are tested in accordance with Specification 4.1. In addition, the active components (pumps and valves) are to be periodically tested to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order. The test interval is determined in accordance with the Inservice Testing Program. The accumulators are a passive safeguard.

References

UFSAR Section 6.2, Safety Injection System

INSERT 4

INSERT 1 (TS 4.5.D)

D. Verify, by visual inspection once per 18 months, that the recirculation spray containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

INSERT 2 (TS 4.5 Basis)

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

INSERT 3 (TS 4.11.C.5.c)

c. Verifying by visual inspection that the low head safety injection containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

INSERT 4 (TS 4.11 Basis)

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATIONS PAGES (TYPED)

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2. By verifying that each motor-operated valve in the recirculation spray flow paths performs satisfactorily when tested in accordance with the Inservice Testing Program.

3. By verifying each spray nozzle is unobstructed following maintenance which could cause nozzle blockage.

C. Each weight-loaded check valve in the containment spray and outside containment recirculation spray subsystems shall be demonstrated OPERABLE once per 18 months by cycling the valve one complete cycle of full travel and verifying that each valve opens when the discharge line of the pump is pressurized with air and seats when a vacuum is applied.

D. Verify, by visual inspection once per 18 months, that the recirculation spray containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

The recirculation spray pumps outside the containment have the capability of being dry-run and flow tested. The test of an outside recirculation spray pump is performed by closing the containment sump suction line valve and the isolation valve between the pump discharge and the containment penetration. This allows the pump casing to be filled with water and the pump to recirculate water through a test line from the pump discharge to the pump casing.

With a system flush conducted to remove particulate matter prior to the installation of spray nozzles and with corrosion resistant nozzles and piping, it is not considered credible that a significant number of nozzles would plug during the life of the unit to reduce the effectiveness of the subsystems. Therefore, an inspection or air or smoke test of the nozzles following maintenance which could cause nozzle blockage is sufficient to indicate that plugging of the nozzles has not occurred.

The spray nozzles in the refueling water storage tank provide means to ensure that there is no particulate matter in the refueling water storage tank and the containment spray subsystems which could plug or cause deterioration of the spray nozzles. The nozzles in the tank are identical to those used on the containment spray headers. The flow test of the containment spray pumps and recirculation to the refueling water storage will indicate any plugging of the nozzles by a reduction of flow through the nozzles.

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

References

FSAR Section 6.3.1, Containment Spray Pumps

FSAR Section 6.3.1, Recirculation Spray Pumps

c. Power may be restored to any valve or breaker referenced in Specifications 4.11.C.4.a and 4.11.C.4.b for the purpose of testing or maintenance provided that not more than one valve has power restored at one time, and the testing and maintenance is completed and power removed within 24 hours.

5. Once per 18 months by:

a. Verifying that each automatic valve capable of receiving a safety injection signal, actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

b. Verifying that each charging pump and safety injection pump circuit breaker actuates to its correct position upon receipt of a safety injection test signal. The charging and low head safety injection pumps may be immobilized for this test.

c. Verifying by visual inspection that the low head safety injection containment sump components are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

Basis

Complete system tests cannot be performed when the reactor is operating because a safety injection signal causes containment isolation. The method of assuring operability of these systems is therefore to combine system tests to be performed during unit outages, with more frequent component tests, which can be performed during reactor operation.

The system tests demonstrate proper automatic operation of the Safety Injection System. A test signal is applied to initiate automatic operation action and verification is made that the components receive the safety injection signal in the proper sequence. The test may be performed with the pumps blocked from starting. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.

During reactor operation, the instrumentation which is depended on to initiate safety injection is checked periodically, and the initiating circuits are tested in accordance with Specification 4.1. In addition, the active components (pumps and valves) are to be periodically tested to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order. The test interval is determined in accordance with the Inservice Testing Program. The accumulators are a passive safeguard.

Periodic inspections of containment sump components ensure that the components are unrestricted and stay in proper operating condition. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a unit outage and on the need to have access to the location. This frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

References

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