Attachment 2

Technical Specifications Changes

North Anna Power Station

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

SURVEILLANCE REQUIREMENTS

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

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. Verifying, that on recirculation flow, each outside recirculation spray pump develops a discharge pressure of $\geq$ 115 psig and each casing cooling pump develops a discharge pressure of $\geq$ 58 psig when tested pursuant to Specification 4.0.5.

c. At least once per 18 months by:

1. Verifying that on a Containment Pressure -- High-High signal, each casing cooling pump starts automatically without time delay, and each recirculation spray pump starts automatically with the following time delays: inside 195 $\pm$ 9.75 seconds, outside 210 $\pm$ 21 seconds.

2. Verifying that each automatic valve in the flow path actuates to its correct position on a containment pressure high-high test signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

4.6.2.2.2 The casing cooling tank shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the contained borated water volume in the tank, and

2. Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the casing cooling tank temperature.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT QUENCH SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment quench spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment quench spray subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment quench spray subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days by:

   1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

   2. Verifying the temperature of the borated water in the refueling water storage tank is within the limits shown on Figure 3.6-1.

b. Verifying that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 123 psig when tested pursuant to Specification 4.0.5.

c. At least once per 18 months during shutdown, by:

   1. Verifying that each automatic valve in the flow path actuated to its correct position on a Containment Pressure -- high-high signal.

   2. Verifying that each spray pump starts automatically on a Containment Pressure -- high-high signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

SURVEILLANCE REQUIREMENTS (Continued)

b. Verifying, that on recirculation flow, each outside recirculation spray pump develops a discharge pressure of greater than or equal to 115 psig and each casing cooling pump develops a discharge pressure of greater than or equal to 46 psig when tested pursuant to Specification 4.0.5.

c. At least once per 18 months by:

1. Verifying that on a Containment Pressure -- High-High signal, each casing cooling pumps starts automatically without time delay, and each recirculation spray pump starts automatically with the following time delays: inside 195 $\pm$ 9.75 seconds, outside 210 $\pm$ 21 seconds.

2. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure -- high-high test signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

4.6.2.2.2 The casing cooling tank shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the contained borated water volume in the tank, and

2. Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the casing cooling tank temperature.

Attachment 3

Technical Specifications Changes

Surry Power Station

4.5 SPRAY SYSTEMS TESTS

Applicability

Applies to the testing of the Spray Systems.

Objective

To verity that the Spray Systems will respond promptly and perform their design function, if required.

Specification

A. Each containment spray subsystem shall be demonstrated OPERABLE:

1. By verifying, that on recirculation flow, each containment spray pump performs satisfactorily when tested in accordance with Specification 4.0.5.

2. By verifying that each motor-operated valve in the containment spray flow path performs satisfactorily when tested in accordance with Specification 4.0.5.

3. At least once per 10 years, coincident with the closest refueling outage, by performing an air or smoke flow test and verifying each spray nozzle is unobstructed.

4. Coincident with the containment spray pump test described in Specification 4.5.A.1, by verifying that no particulate material clogs the test spray nozzles in the refueling water storage tank.

B. Each recirculation spray subsystem shall be demonstrated OPERABLE:

1. By verifying each recirculation spray pump performs satisfactorily when tested in accordance with Specification 4.0.5.

2. By verifying that each motor-operated valve in the recirculation spray flow paths performs satisfactorily when tested in accordance with Specification 4.0.5.

3. At least once per 10 years, coincident with the closest refueling outage, by performing an air or smoke flow test and verifying each spray nozzle is unobstructed.

4. At least once each refueling outage by verifying that total system uncollected leakage from valves, flanges, and pumps located outside containment does not exceed 964 cc/hr.

C. Each weight-loaded check valve in the containment spray and outside containment recirculation spray subsystems shall be demonstrated OPERABLE at least once each refueling period, 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 at least once each refueling period 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.

Basis

The flow testing of each containment spray pump is performed by opening the normally closed valve in the containment spray pump recirculation line returning water to the refueling water storage tank. The containment spray pump is operated and a quantity of water recirculated to the refueling water storage tank. The discharge to the tank is divided into two fractions; one for the major portion of the recirculation flow and the other to pass a small quantity of water through test nozzles which are identical with those used in the containment spray headers.

The purpose of the recirculation through the test nozzles is to assure that there are no particulate material in the refueling water storage tank small enough to pass through pump suction strainers and large enough to clog spray nozzles.

Due to the physical arrangement of the recirculation spray pumps inside the containment, it is impractical to flow-test them other than on a refueling outage frequency. Flow testing of these pumps requires the physical modification of the pump discharge piping and the erection of a temporary dike to contain recirculated water. The length of time required to setup for the test, perform the test, and then reconfigure the system for normal operation is prohibitive to performing the flow-test on even the cold shutdown frequency. Therefore, the flow-test of the inside containment recirculation spray pumps will be performed on a refueling outage frequency.

The inside containment recirculation spray pumps are capable of being operated dry for approximately 60 seconds without significantly overheating and/or degrading the pump bearings. During this dry pump check, it can be determined that the pump shafts are turning by rotation sensors which indicate in the Main Control Room. In addition, motor current will be compared with an established reference value to ascertain that no degradation of pump operation has occurred

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, the provisions to air-test the nozzles every ten years, coinciding with the closest refueling outage, 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.

References

FSAR Section 6.3.1, Containment Spray Pumps
FSAR Section 6.3.1, Recirculation Spray Pumps

Attachment 4

Significant Hazards Consideration Determination

Surry and North Anna Power Stations

Significant Hazards Considerations

Virginia Electric and Power Company has reviewed the proposed changes against the criteria of 10 CFR 50.92 and has concluded that the changes as proposed do not pose a significant hazards consideration. The proposed changes to the surveillance requirements for the nozzles in the Containment Spray System and the Recirculation Spray Systems at Surry and the Quench Spray System and Recirculation Spray Systems at North Anna, are consistent with the intent of Generic Letter 93-05, "Line-Item Technical Specifications Improvement to Reduce Surveillance Requirements for Testing During Power Operation," dated September 27, 1993, which is to improve safety, decrease equipment degradation, and reduces unnecessary burden on personnel resources by reducing testing requirements that are marginal to safety. Specifically, operation of Surry and North Anna Power Stations in accordance with the proposed Technical Specifications changes will not:

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

   The proposed reduced testing frequency of the Spray Systems' nozzles does not change the way the systems are operated or the Spray Systems' operability requirements. The proposed change to the surveillance frequency of safety equipment has no impact on the probability of an accident occurrence nor can it create a new or different type of accident. NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," dated December 1992, concluded that the corrosion of stainless steel piping is negligible during the extended surveillance interval. Since the Spray Systems are maintained dry there is no additional mechanism that could cause blockage of the spray nozzles. Thus, the nozzles in the Spray Systems will remain operable during the ten year surveillance interval to mitigate the consequence of an accident previously evaluated. To date, no clogging or blockage of the nozzles in the Spray Systems during the five year surveillance tests have been observed at either Surry or North Anna. Testing of the Spray Systems' nozzles at the proposed reduced frequency will not increase the probability of occurrence of a postulated accident or the consequences of an accident previously evaluated.

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

   The proposed reduced frequency testing of the Spray Systems' nozzles does not change the way the Spray Systems are operated. The reduced frequency of testing of the spray nozzles does not change plant operation or system readiness. The reduced frequency testing of the Spray Systems' nozzles does not generate any new accident precursors. Therefore, the possibility of a new or different kind of accident previously evaluated is not created by the proposed changes in surveillance frequency of the Spray Systems nozzles.

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

   Reduced testing of the Spray Systems' nozzles does not change the way the Systems' are operated or the Spray Systems' operability requirement. NUREG-1366 concluded that the corrosion of stainless steel piping is negligible during the extended surveillance interval. Since the Spray Systems are maintained dry there is no additional mechanism that could cause blockage of the Spray Systems' nozzles. Thus, the proposed reduced testing frequency is adequate to ensure spray nozzle operability. The surveillance requirements do not affect the margin of safety in that the operability requirements of the Spray Systems remains unaltered. The existing safety analysis remains bounding. Therefore, no margins of safety are adversely affected.