ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATIONS CHANGES

NORTH ANNA POWER STATION UNITS 1 AND 2

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.3.1 Three component cooling water subsystems (shared with Unit 1) shall be OPERABLE*, ** with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

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* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period this footnote will no longer be applicable.

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM

3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.4.1 Two service water loops (shared with Unit 1) shall be OPERABLE with each loop consisting of:

a. Two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies,* and

b. An OPERABLE flow path capable of providing cooling for OPERABLE plant components and transferring heat to the service water reservoir.*

APPLICABILITY: Either Unit in MODES 1, 2, 3 or 4.

ACTION:

a. With one service water pump inoperable, within 72 hours throttle component cooling water heat exchanger flows, in accordance with approved operating procedures, to ensure the remaining service water pumps are capable of providing adequate flow to the recirculation spray heat exchangers. The provisions of Specification 3.0.4 are not applicable once component cooling heat exchangers flows are throttled.

b. With two service water pumps inoperable, perform ACTION 3.7.4.1.a within 1 hour and restore at least one service water pump to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one service water loop inoperable, except as provided in ACTION 3.7.4.1.a, restore the inoperable loop to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from the 36" headers to the first isolation valve, one of the two service water (SW) loops is permitted to temporarily bypass the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, four out of four SW pumps (excluding the auxiliary SW pumps) shall remain OPERABLE. With one SW pump inoperable, work may continue provided actions are taken to either restore the pump to OPERABLE status within 72 hours or restore both SW headers to/from the CCHXs to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. During each period of operation with only one SW loop available to/from the CCHXs, the automatic closure feature of the SW valves servicing the CCHXs shall be defeated to ensure SW flow to the CCHXs is not interrupted. The automatic closure will not be defeated when the 168-hour Action Statement per Section 3.7.4.1.d is entered during these 35-day periods of operation. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable, provided two SW loops are capable of providing cooling for the other OPERABLE plant components. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.3.1 Three component cooling water subsystems (shared with Unit 2) shall be OPERABLE [*, **] with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

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* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM

3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.4.1 Two service water loops (shared with Unit 2) shall be OPERABLE with each loop consisting of:

a. Two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies, * and

b. An OPERABLE flow path capable of providing cooling for OPERABLE plant components and transferring heat to the service water reservoir.*

APPLICABILITY: Either Unit in MODES 1, 2, 3 or 4.

ACTION:

a. With one service water pump inoperable, within 72 hours throttle component cooling water heat exchanger flows, in accordance with approved operating procedures, to ensure the remaining service water pumps are capable of providing adequate flow to the recirculation spray heat exchangers. The provisions of Specification 3.0.4 are not applicable once component cooling heat exchangers flows are throttled.

b. With two service water pumps inoperable, perform ACTION 3.7.4.1.a within 1 hour and restore at least one service water pump to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one service water loop inoperable, except as provided in ACTION 3.7.4.1.a, restore the inoperable loop to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from the 36" headers to the first isolation valve, one of the two service water (SW) loops is permitted to temporarily bypass the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, four out of four SW pumps (excluding the auxiliary SW pumps) shall remain OPERABLE. With one SW pump inoperable, work may continue provided actions are taken to either restore the pump to OPERABLE status within 72 hours or restore both SW headers to/from the CCHXs to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. During each period of operation with only one SW loop available to/from the CCHXs, the automatic closure feature of the SW valves servicing the CCHXs shall be defeated to ensure SW flow to the CCHXs is not interrupted. The automatic closure will not be defeated when the 168-hour Action Statement per Section 3.7.4.1.d is entered during these 35-day periods of operation. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable, provided two SW loops are capable of providing cooling for the other OPERABLE plant components. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

ATTACHMENT 3

SIGNIFICANT HAZARDS CONSIDERATION

NORTH ANNA POWER STATION UNITS 1 AND 2

Significant Hazards Consideration

Virginia Electric and Power Company is requesting temporary changes to Technical Specifications 3.7.3.1, "Component Cooling Water Subsystem - Operating," and 3.7.4.1, "Service Water System - Operating," for North Anna Power Station Units 1 and 2. These proposed Technical Specifications changes will allow one of the two service water loops to be isolated from the component cooling water heat exchangers during power operation in order to refurbish the encased in concrete sections of the isolated service water headers.

The scope of this project includes refurbishment of the concrete-encased 24" SW headers (approximately 35 - 40 feet of encased portion for each pipe, four pipes altogether) and short sections (10-15 ft) of exposed portion of each pipe (four pipes altogether) up to first isolation valve on the header. Refurbishment of this piping presents a challenge in that it is not possible to isolate and plug or blank the section to be worked in a 7-day time period. The purpose of this submittal is to request temporary changes to the existing service water (SW) and component cooling water (CC) Technical Specifications to permit orderly and efficient conduct of the pipe refurbishment project during two-unit power operation. Specifically, we are proposing to temporarily change TS 3.7.4.1 "Service Water System - Operating" to allow operation of the SW system with one independent source of SW to/from the Unit 1 and Unit 2 CCHXs for two periods of up to 35 days each. This proposed change also allows the automatic closure feature of the SW valves to/from the CCHXs to be defeated during portions of the 35-day periods. In addition, we propose to temporarily change TS 3.7.3.1 "Component Cooling Water Subsystem - Operating" with a footnote which considers the CC subsystems OPERABLE with only one independent source of SW provided to/from the CCHXs during these 35-day periods. Further, the proposed change will allow that during operation with only one SW header available to/from the CCHXs, the provisions of Specification 3.0.4 would not be applicable provided two SW loops are capable of providing cooling for the other operable plant components.

Virginia Electric and Power Company has reviewed these 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. Specifically, operation of North Anna Power Station in accordance with the proposed Technical Specifications changes will not:

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

The piping refurbishment project and the proposed temporary changes to the SW and CC Technical Specifications have been evaluated to assess their impact on the normal operation of the SW and CC systems and to ensure that the design basis safety functions of each system are preserved. The SW system is required to function during all normal and emergency operating conditions. During normal plant operation, the SW system provides cooling water to the CCHXs, charging pump coolers, instrument air compressor coolers, and control room chiller condensers of both units. Within the first 168 hour Section 3/4.7.4.1.d TS AS of isolation of the header which is to be repaired, temporary 10" diameter SW lines (one supply and one return) will be installed to supply the SW to the charging pumps coolers, instrument air compressors coolers, Unit 2 CR chillers and spent fuel pool (SFP) coolers to satisfy design basis conditions. These temporary lines will be routed from the operating part of the 36" SW headers while the 24" headers to CCHXs are being repaired. The temporary lines will be dismantled when the repaired header is returned to operation (second 168 hour AS). During the two 35-day periods, one header will operate with its 24-inch piping to/from the CCHXs temporarily blanked. To avoid operation of the SW pump at abnormal conditions (low flow) on this "partially deadlocked" header, a temporary cross-connect will be installed to by-pass the CCHXs.

SW system operation with the cross-connect installed was evaluated for design basis accident (DBA) conditions. The DBA condition for the SW system is a loss-of-coolant accident on one unit with simultaneous loss-of-offsite-power to both units. A SW system hydraulic analysis has been performed to verify that adequate flow is provided to the containment recirculation spray heat exchangers (RSHXs) with the temporary cross-connect installed and throttled open, assuming the occurrence of the most limiting single failure. Therefore, there is no increase in probability or consequences of the DBA condition.

Utilizing only one SW header to supply flow to the CCHXs has the potential to affect the reliability of the CC system and all of the equipment cooled by CC. A review of the equipment affected by this phase of the SW restoration project was performed to evaluate the impact on initiating event frequency. Since the SW system and CC system are support systems used to remove heat, a failure in either of these systems does not affect the initiating event frequency of any design basis event. Additionally, an estimate of the impact on core damage frequency is provided below. The impact on the North Anna Probabilistic Safety Assessment (PSA) during implementation of this DCP is similar to impact of work performed under DCP-94-010 since the scope of work of both DCPs is repair/replacement of different portions of the same 24" SW headers to CCHXs. The only difference from a PSA standpoint is that CDF for DCP-94-010 was calculated based on 140 days supply of CCHXs from one SW header while per this DCP it is only 70 days. Therefore, results of PSA evaluation for DCP-94-010 are

conservatively applied to this DCP. The activities to be performed during the refurbishment project and the various system alignments required have been evaluated using the Individual Plant Examination (IPE) Probabilistic Safety Assessment (PSA) model for North Anna Power Station. This model is used in a manner that is generally consistent with the Electric Power Research Institute (EPRI) PSA Applications Guide TR-105396. The effect on the PSA model is a slight increase in the frequency of reactor trips and an increase in the probability of RHR failure.

The increased frequency of reactor trips is due to the decreased reliability of the CC system to supply cooling to the RCP motor. When only one SW header is available to the CC heat exchangers the frequency of losing this single header is dominated by the probability of both SW pumps failing. Also considered was the frequency of pipe rupture anywhere in the single available header. When the single SW header fails to supply cooling to the CC heat exchangers, the CC system will heatup causing inadequate cooling for sustained operation of the RCPs. Tripping these pumps results in a reactor trip. The second SW header can be expected to supply other equipment with cooling. This scenario is appropriately modeled as a reactor trip with main feedwater available initiating event. A sensitivity analysis shows the increase in CDF to be about 1E-8/year. The total effect of this DCP includes a failure analysis of the reactor coolant pump and motor in case of loss of CCW.

The CC system is also included in the PSA model as a support system for RHR cooling. The RHR system is used to reduce reactor coolant system temperatures from 350°F (hot shutdown) to 140°F (cold shutdown). The only accident initiator that requires the unit to be cooled down and placed on RHR cooling are sequences which are initiated with a steam generator tube rupture. (Note that, for the North Anna plant design, RHR is separate from the safety injection system and the low head safety injection pumps.) The increased probability for the loss of RHR when only one SW header is available to the CCHXs is estimated using fault tree analysis and is dominated by the failure of both SW pumps. The probability for the loss of both SW pumps aligned to the CCHXs is estimated to be 1.5E-4. The effect of this increase in RHR failure probability was determined by adding this probability to the top single event in the RHR function and recalculating the new CDF. The resulting increase in CDF as a result of RHR system failure following a steam generator tube rupture is less than 1E-8 per year.

The CC system is further included in the PSA model as part of the loss of RCP seal cooling as an initiating event and as a loss of function during other initiating event scenarios. The effect on the probability for a loss of RCP seal cooling due to losing CC cooling to the RCP thermal barriers is negligible due to the high reliability of the charging system to provide seal injection.

The total effect of this DCP on core damage frequency (CDF) was estimated by a sensitivity analysis combining both the change in the reactor trip initiating event frequency and the increased failure probability of RHR. It was evaluated that during implementation of this DCP, CCHXs will be supplied from one SW header for 70 days (35 x 2=70), therefore, the increase in CDF previously evaluated in DCP-94-010 based on 140 days is conservative. This DCP does not affect the containment systems and there would not be any significant change in off-site dose since the containment heat removal portion of the SW system is not affected and the increase in CDF is insignificant. The small increase in CDF calculated for the repair activities and the procedure developed to provide contingency actions result in the conclusion that this work does not represent a significant increase in core damage frequency.

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

The proposed changes to the allowed outage times only provide operational flexibility needed to perform necessary repairs. During the project, there will be a significant time period when all the CCHXs are aligned to one SW loop. The possibility of an interruption of SW supply to the heat exchangers during a DBA is eliminated by defeating the closure of the 24-inch SW isolation MOVs to the CCHXs on a SI/CDA signal. Both SW headers will be available for equipment required for safe shutdown of the units (i.e., RSHXs, charging pumps, and CR/ESGR chillers). The SW pipe repair activities and the installation/removal of the SW cross-connect and temporary piping do not create the possibility for a malfunction of equipment different than previously evaluated. Results of the Johnston Pump NPSH test proved to be satisfactory for the anticipated SW pump flow rates under modes of station operation for this project, therefore, the possibility for an accident of a different type than was previously evaluated in the Safety Analysis Report will not be created. Based on the above, implementation of the restoration project and approval of the proposed Technical Specifications changes will not introduce any new accident initiators nor affect the performance of accident mitigation systems.

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

The proposed changes to the schedule only provide operational flexibility to perform the required SW pipe refurbishment. The Technical Specifications continue to require the SW and CC systems to remain functional during the period with a single SW supply to the CCHXs. As stated in item (1) above, the SW system is fully capable of performing its DBA function during the course of the pipe refurbishment project with the proposed Technical Specification changes in place. The effect of this pipe refurbishment project on CC system reliability was estimated by a

sensitivity analysis combining both the change in the reactor trip initiating event frequency and the increased failure probability of RHR resulting in about a 1E-8 per year increase in CDF. Since this project will not affect the containment systems, there would not be any significant change in off-site dose, except that resulting directly from the slight increase in CDF.

Virginia Electric and Power Company concludes that the activities associated with these proposed Technical Specification changes satisfy the no significant hazards consideration of the criteria of 10 CFR 50.92 and, accordingly, a no significant hazards consideration finding is justified.