

Attachment 1

Proposed Technical Specification Change
North Anna Unit 1

Virginia Electric and Power Company

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

- 3.8.1.2 As a minimum, one the following trains of A.C. electrical power sources shall be OPERABLE :
- a. One circuit between the offsite transmission network and the onsite Class IE distribution system, and
 - b. One diesel generator with :
 - 1. A day tank containing a minimum volume of 750 gallons of fuel,
 - 2. A fuel storage system consisting of two underground fuel storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and
 - 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 - 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least every 12 hours,
 - 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground fuel oil storage tank at least once every 12 hours,
 - 3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
 - 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours and perform ACTION a. above.

SURVEILLANCE REQUIREMENTS

- 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and 4.8.1.1.4.

ELECTRICAL POWER SYSTEMS

A.C. and D.C. DISTRIBUTION – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:

- a. "H" Train (Orange) consisting of the following:
 1. 4160-volt Emergency Bus 1H
 2. 480-volt Emergency Busses 1H and 1H1
 3. 120-volt A.C. Vital Bus 1-1 energized from its associated inverter connected to D.C. bus 1-1, and
 4. 120-volt A.C. Vital Bus 1-2 energized from its associated inverter connected to D.C. bus 1-2.
 5. 125-volt D.C. Busses No. 1-1 & 1-2, and
 6. 125-volt D.C. Battery Banks 1-I & 1-II and Chargers 1-I & 1-II D.C. Battery Charger 1C-I may be used in place of either of the above Chargers.
- b. "J" Train (Purple) consisting of the following:
 1. 4160-volt Emergency Bus 1J
 2. 480-volt Emergency Busses 1J and 1J1
 3. 120-volt A.C. Vital Bus 1-3 energized from its associated inverter connected to D.C. bus 1-3, and
 4. 120-volt A.C. Vital Bus 1-4 energized from its associated inverter connected to D.C. bus 1-4.
 5. 125-volt D.C. Busses No. 1-3 & 1-4, and
 6. 125-volt D.C. Battery Banks 1-III & 1-IV and Chargers 1-III & 1-IV D.C. Battery Charger 1C-II may be used in place of either of the above Chargers.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

4.8.2.2.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. power source.

The ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e. fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g. a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generator are in accordance with the recommendations Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants" Revision 1, August 1977, as modified by Amendment No. 83 issued August 22, 1986.

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance, Testing and Replacements of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std. 450-1980, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Station and Substations," as modified by Amendment No. 97 issued March 25, 1988.

Attachment 2

Proposed Technical Specification Change

North Anna Unit 2

Virginia Electric and Power Company

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

- 3.8.1.2 As a minimum, one the following trains of A.C. electrical power sources shall be OPERABLE :
- a. One circuit between the offsite transmission network and the onsite Class IE distribution system, and
 - b. One diesel generator with :
 - 1. A day tank containing a minimum volume of 750 gallons of fuel,
 - 2. A fuel storage system consisting of two underground fuel storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and
 - 3. A fuel transfer system.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

- a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.
- b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:
 - 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least every 12 hours,
 - 2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground fuel oil storage tank at least once every 12 hours,
 - 3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
 - 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours and perform ACTION a. above.

SURVEILLANCE REQUIREMENTS

- 4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and 4.8.1.1.4.

ELECTRICAL POWER SYSTEMS

A.C. and D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:

- a. "H" Train (Orange) consisting of the following:
 - 1. 4160-volt Emergency Bus 2H
 - 2. 480-volt Emergency Busses 2H and 2H1
 - 3. 120-volt A.C. Vital Bus 2-1 energized from its associated inverter connected to D.C. bus 2-1, and
 - 4. 120-volt A.C. Vital Bus 2-2 energized from its associated inverter connected to D.C. bus 2-2.
 - 5. 125-volt D.C. Busses No. 2-1 & 2-2, and
 - 6. 125-volt D.C. Battery Banks 2-I & 2-II and Chargers 2-I & 2-II D.C. Battery Charger 2C-I may be used in place of either of the above Chargers.

- b. "J" Train (Purple) consisting of the following:
 - 1. 4160-volt Emergency Bus 2J
 - 2. 480-volt Emergency Busses 2J and 2J1
 - 3. 120-volt A.C. Vital Bus 2-3 energized from its associated inverter connected to D.C. bus 2-3, and
 - 4. 120-volt A.C. Vital Bus 2-4 energized from its associated inverter connected to D.C. bus 2-4.
 - 5. 125-volt D.C. Busses No. 2-3 & 2-4, and
 - 6. 125-volt D.C. Battery Banks 2-III & 2-IV and Chargers 2-III & 2-IV D.C. Battery Charger 2C-II may be used in place of either of the above Chargers.

APPLICABILITY:

- a. Modes 5 and 6
- b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

4.8.2.1.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.1 and 3/4.8.2 A.C. and D.C. POWER SOURCES AND DISTRIBUTION

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. power source.

The ACTION requirements specified in Modes 5 and 6 address the condition where sufficient power is unavailable to recover from postulated events (i.e. fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems necessary to recover from postulated events in these MODES, e.g. a fuel handling accident.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generator are in accordance with the recommendations Regulatory Guide 1.9 "Selection of Diesel Generator Set Capacity for Standby Power Supplies," March 10, 1971, and 1.108 "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants" Revision 1, August 1977, as modified by Amendment No. 48 issued April 25, 1985.

The Surveillance Requirements for demonstrating the OPERABILITY of the Emergency Diesel Generator batteries and the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance, Testing and Replacements of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std. 450-1980, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Station and Substations," as modified by Amendment No. 84 issued March 25, 1988.

Containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The surveillance frequency applicable to molded case circuit breakers and/or fuses provides assurance of breaker and/or fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide

Attachment 3

Discussion of Proposed Change

North Anna Units 1 and 2

Virginia Electric and Power Company

DISCUSSION OF PROPOSED CHANGES

This section presents a detailed discussion of the proposed Technical Specification changes presented in Attachments 1 and 2 for Unit 1 and Unit 2 respectively. The proposed change clarifies the emergency power supplies which must be OPERABLE in modes 5 and 6, adds to the applicability the case of moving irradiated fuel assemblies or any loads over irradiated fuel assemblies with the reactor defueled and removes the requirement to establish CONTAINMENT INTEGRITY if a bus is lost while shutdown.

3.8.1.2, Electrical Power Systems: Shutdown

The applicability section of Specification 3.8.1.2 was changed by adding movement of irradiated fuel assemblies or any loads over irradiated fuel assemblies with no fuel assemblies in the reactor vessel. This change will ensure that power is available to systems necessary to recover from a fuel handling accident. Action "a" was also changed to stop movement of irradiated fuel assemblies or loads over irradiated fuel assemblies if the specification cannot be met. This change is consistent with Standard Technical Specification (STS) wording, with the exception of the requirement to depressurize and vent the RCS. The Overpressure Protection System L.C.O. (3.4.9.3) provides this action if the power operated relief valves (PORVs) become inoperable. Therefore, this action would be redundant and is not necessary. This action is consistent with the Technical Specifications approved for Wolf Creek Unit 1, Diablo Canyon Unit II and Beaver Valley Units 1 and 2.

3/4.8.2.2, A.C. and D.C. Distribution – Shutdown

Specification 3/4.8.2.2 and 3/4.8.2.4 were combined and rewritten to designate the two complete trains of A.C. and D.C. sources. The current Technical Specifications could allow parts of both trains (H and J) to be used for the required busses and equipment. Specifically designating the required equipment and busses is more conservative.

Stating the number and type of components required is consistent with the wording of LCOs 3.8.2.1 and 3.8.2.3. The proposed amendment requires that the Vital Busses be powered from the inverters connected to the D.C. busses. This operability requirement for the inverters is consistent with the Standard Technical Specifications. This change also allows using the swing chargers when the normal charger is out of service. The spare chargers are fully qualified Class 1E chargers. The applicability section of this specification was changed by adding movement of irradiated fuel assemblies or loads over irradiated fuel assemblies with no fuel assemblies in the reactor vessel. The reason for this is stated above in the discussion of 3.8.1.2.

The Action Section which required that CONTAINMENT INTEGRITY be established was changed to be the same as the Standard Technical Specifications. During Modes 5 and 6, CONTAINMENT INTEGRITY as defined in Technical Specifications is very difficult to achieve. The basis for the allowable configuration of the containment penetrations is the lack of the potential to pressurize containment. We will retain the requirements for containment closure during irradiated fuel movement (Specification 3/4.9.4), when RHR is lost in MODE 6 (Specifications 3/4.9.8.1 and 3/4.9.8.2) and when the containment purge and exhaust isolation system is lost in MODE 6 (Specification 3/4.9.9). When the unit is defueled, there is no need for CONTAINMENT INTEGRITY. However, work in the Fuel Building may be in progress and the potential for a release to the environment is not precluded. Therefore, if the A.C. and D.C. Distribution LCO cannot be met, then any operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies must be stopped.

Surveillance Requirement 4.8.2.2.1 was changed to include that voltage is indicated on the busses. Surveillance Requirement 4.8.2.2.2 was added. This used to be part of 3/4.8.2.4 which was deleted.

3/4.8.2.4, D.C. Distribution – Shutdown

Specification 3/4.8.2.4 was deleted and the requirements were incorporated into 3/4.8.2.2.

The proposed changes described above were evaluated against the March 15, 1990 proposed license amendment for the MERITS version of the North Anna Technical Specifications. The proposed changes are consistent with the MERITS version and no changes to the MERITS Specifications are required.

Attachment 4

10 CFR 50.92 Evaluation
North Anna Units 1 and 2

Virginia Electric and Power Company

Basis for No Significant Hazards Determination

Virginia Electric and Power Company proposes to revise the North Anna Units 1 and 2 Technical Specifications dealing with electric power systems during shutdown. The applicability sections of these specifications are being expanded to include handling spent fuel when the reactor is defueled. The specifications are being clarified and made consistent with Standard Technical Specifications. The changes also delete the requirement to establish containment integrity if a required bus is lost. This requirement is not necessary and can divert operator attention.

The existing specifications are applicable during cold shutdown and refueling. The definition of the refueling mode excludes the case when the reactor is defueled. The revised specifications would also apply when moving irradiated fuel or any loads over irradiated fuel even if there is no fuel in the reactor. The licensee will therefore be better equipped to cope with a fuel handling accident.

The existing specifications also allow busses from different trains to be used to satisfy the requirements. The revised specification lists the equipment on each train and would require one complete train. This will reduce the probability and consequences of an accident.

The existing specifications require containment integrity to be established if a required bus is lost during cold shutdown or refueling. Containment integrity is a complex defined term which requires surveillance on many penetrations. The concept of containment integrity is designed to insure that a large break loss of coolant accident can be accommodated with the reactor coolant system at operating pressure and temperature. During shutdown, adequate protection is provided by other specifications that require containment closure during irradiated fuel movement or on loss of residual heat removal or the containment purge and exhaust isolation system. The existing requirement for establishing containment integrity on loss of a required bus during shutdown is counterproductive because it would divert operator attention from the problem that caused the electrical failure.

It has been determined that the proposed changes do not involve a significant hazards consideration as defined by 10 CFR 50.92. This determination was based on the following points.

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed changes have no adverse impact upon potential accident probability or consequence. No new or unique accident precursors are introduced by these changes to the technical specification requirements. The need for containment closure is adequately addressed by other specifications. In fact, the change will enhance the ability to cope with an accident during shutdown.
2. The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated. The change only affects electrical systems during shutdown and all credible accidents have been evaluated.

3. The proposed changes do not involve a significant reduction in a margin of safety. The margin of safety for shutdown or fuel handling accidents is not affected by this change.