

3.12 CONFORMANCE TO RULES ISSUED AFTER PLANT LICENSING

3.12.1 NRC Rule On Station Blackout

On July 21, 1988, the Code of Federal Regulations, Title 10, Part 50 was amended to include a new Section 50.63, "Loss of All Alternating Current Power, " (Station Blackout). The Station Blackout (SBO) rule requires that each light-water cooled nuclear power plant licensed to operate must be able to withstand and recover from an SBO. An SBO is defined in 10CFR50.2 as the complete loss of alternating current (AC) electric power to the essential and non-essential switchgear busses (i.e., loss of offsite power concurrent with a turbine trip and unavailability of the onsite emergency ac power system). SBO does not include loss of station batteries or loss of AC power from station batteries through inverters, nor does it assume a concurrent single failure or design basis accident of the affected Unit.

The NRC issued Regulator Guide (RG) 1.155 in August of 1988, to provide the industry with guidance that was acceptable for meeting the requirement of 10CFR50.63. In RG 1.155, the NRC states that NUMARC 87-00 (Reference 1) also provides guidance acceptable for meeting the requirements of 10CFR50.63, except when RG 1.155 takes precedence over NUMARC 87-00 as indicated in Table 1 of RG 1.155.

3.12.1.1 Conformance to NRC Rule on Station Blackout

An SBO coping analysis was performed to determine SGS's coping duration and ability to cope with an SBO. This coping duration was based on:

- a. Offsite Power Design Characteristic
- b. Emergency AC Power Supply System Configuration
- c. Calculated EDG Reliability; and
- d. Allowed EDG Target Reliability

The coping duration for SGS was calculated as four hours in accordance with NUMARC 87-00, Section 3.0 with the exception of the frequency of Loss of Offsite Power events due to severe weather (SW) and Extremely Severe Weather (ESW). Site-specific weather data was used to determine the SW and ESW frequency as detailed in Report No. NUS-5175, Rev. 1 (Reference 2).

The ability to cope with an SBO event is based on the ability to maintain "appropriate containment integrity" (as defined in RG 1.155), provide adequate condensate inventory for decay heat removal, provide adequate class 1E battery capacity and compressed air capacity for the coping duration period, and evaluate equipment operability due to loss of ventilation. The ability to cope with an SBO event is described in programmatic standard SC.DE-PS.ZZ-0040 (Q), "Salem Station Blackout Program."

The Station Blackout Program was reviewed to determine the impact of the Unit 2 Model 61/19T steam generators. The aspects of the SBO determined to be potentially affected by the replacement steam generator design are those that relate to the RCS inventory and condensate inventory. The RCS inventory increases with the Model 61/19T steam generators, which has a beneficial impact in that with the assumed RCP leakage; there is a longer period of time to core uncover. The Unit 2 steam generators have a greater amount of Sensible heat than the original Series 51 steam generators, but the condensate required to cope with a SBO will decrease with the RSGs. The review concluded that the AFST has adequate capacity. Therefore, there is no adverse impact on the SBO Program (Reference 3).

3.12.2 References

1. NUMARC 87-00, "Guidelines and Technical Bases for Initiatives Addressing Station Blackout at Light Water Reactors," Rev. 1, August 1991.
2. Halliburton NUS Environmental Corporation, NUS-5175, Rev. 1, "Estimated Frequency of Loss of Off-Site Power due to Extremely Severe Weather (ESW) and Severe Weather (SW) for Salem and Hope Creek Generating Stations", March 1992.
3. PSEG VTD 328299, Areva NP Document No. 51-5049368-04, Salem 2 NSSS/BOP Review.