

NRR-PMDAPEm Resource

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Sent: Thursday, February 27, 2014 9:40 AM
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Cc: 'david.sommers@dom.com'; Pascarelli, Robert; Tom Shaub
Subject: NORTH ANNA POWER STATION, UNIT 2: REQUEST FOR ADDITIONAL INFORMATION LICENSE AMENDMENT REQUEST TS 3.8.1 - "AC SOURCES – OPERATING"

REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST TS 3.8.1 - AC SOURCES – OPERATING
TAC NO. MF2721

Virginia Electric and Power Company (Dominion) submitted a request for amendment to the Technical Specifications (TS) for North Anna Power Station (NAPS) Unit 2. The proposed license amendment requests changes to Technical Specification (TS) 3.8.1, "AC Sources-Operating." TS 3.8.1 contains Surveillance Requirement (SR) 3.8.1.8, which requires verification of the capability to manually transfer Unit 1 4.16 kV engineered safety feature(ESF) bus alternating current (AC) power sources from the normal offsite circuit to the alternate required offsite circuit and this surveillance is only applicable to Unit 1. Dominion is developing a plant modification to install an alternate offsite power feed to each of the two 4.16 kV ESF buses for Unit 2, such that it will be similar to the Unit 1 design. Therefore, the proposed change would delete Note 1 to SR 3.8.1.8 to remove the limitation that excludes Unit 2 and will be consistent with the verification currently performed for Unit 1.

BACKGROUND:

Section 4.0 "Technical Analysis & Safety Considerations" of Attachment 1 of the License Amendment Request (LAR) has the following statements:

The design function of the alternate required offsite circuit is the same as the preferred offsite power source. It provides sufficient power to support all Class 1E systems, structures, and components (SSCs), and station auxiliaries in the event of a loss of the normal offsite AC power source. Therefore, the additional circuits that will feed the Unit 2 emergency buses from offsite AC power will be designed in accordance with 10 CFR 50, Appendix A, General Design Criterion (GDC) 17, "electric power systems."

The modified Unit 2 configuration will be similar to the existing Unit 1 configuration. Interconnections will be provided between normal and emergency buses such that each emergency bus is capable of being powered from: (a) the preferred offsite source (normally assigned RSST), (b) the alternate required offsite circuit (assigned normal bus which can be powered from either an SST or from an RSST which is different than the normally assigned RSST), or (c) the assigned Emergency Diesel Generator."

Section 4.0 concludes with the following statement ".....This connection to the alternate required offsite circuit for each Unit 2 emergency bus will be analogous to the preferred offsite power source and will be required to be in service simultaneously to ensure two qualified offsite power sources are available per TS 3.8.1.a".

According to the description of the electrical system in Chapter 8 of NAPS Final Safety Analyses Report (FSAR), Unit 1 has a main generator output breaker (GOB) as part of the design and Unit 2 does not have a GOB. The main generator breaker allows 4160 V normal busses to be backfed from the 500-kV switchyard through the main transformer and the station service transformers.

The safety function of GDC 17 requirement is to provide assurance that each system (assuming the other system is not functioning) is able to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

QUESTIONS:

- 1) Please clarify if the proposed modification to NAPS electrical system includes installation of a GOB for Unit 2 main generator to make Unit 2 configuration similar to Unit 1 configuration.
- 2) If GOB is installed for Unit 2 main generator with the intent of using another GDC 17 source for the plant then, please provide a detailed summary of the evaluation which shows that the new GOB ratings and capabilities are consistent with the conditions as defined in Institute of Electrical and Electronics Engineers (IEEE) Std. C37.013 and meet the performance tests and capabilities as stated in NUREG-0800, Section 8.2, Appendix A.
- 3) The intent of the proposed plant modification is to provide flexibility in plant operation to ensure that two qualified offsite power sources are available per TS 3.8.1.a. After installation of the modification, a combination of offsite power sources will be available to supply power to safety busses of both units. As an example, the staff notes that in some cases, offsite power from Unit 1 (or Unit 2) busses may be used to supply Unit 2 (Unit 1) safety busses.
 - a. Please provide a comprehensive listing of the combination of offsite circuits that will be used to comply with TS 3.8.1.a in ALL applicable modes of dual unit operation or shutdown.
 - b. Please provide a summary of load flow analyses performed for the proposed paths.
 - c. To preclude overloading of the reserve station service transformers and plant busses, NAPS FSAR section 8.3 provides an overview of load shedding schemes and load restrictions for certain alignments when Unit 1 and Unit 2 are operating or in a startup mode. Please provide details on restrictions that will be imposed when the combination of paths identified in (a) above are used to meet the intent of GDC 17 requirements.
 - d. Please provide clarification on the paths that will be tested when the limitation in TS SR 3.8.1.8 is removed.
 - e. If a GOB is not planned for Unit 2 main generator, please provide details on the capability of the proposed paths to satisfy the safety functions described in GDC 17

Please submit the response to these RAIs by March 31, 2014. If you have any questions please contact me at your earliest.

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