Official

April 2, 1992

Docket Nos. 50-259, 50-260, 50-296
License Nos. DPR-33, DPR-52, DPR-68

Tennessee Valley Authority
ATTN: Senior Vice President
Nuclear Power
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Gentlemen:

SUBJECT: ELECTRICAL DISTRIBUTION SYSTEM FUNCTIONAL INSPECTION - BROWNS FERRY NUCLEAR PLANT

This letter confirms the dates of April 20-26, May 4-8, and May 18-22, 1992, for the Electrical Distribution System Functional Inspection (EDSFI) at your nuclear plant. These dates were established during a conversation between P. Salas of the Browns Ferry facility staff and B. Breslau of this office on March 18, 1992.

It is requested that the management entrance meeting be scheduled for 1:00 p.m. on April 20, 1992 and the exit meeting be scheduled for 10:00 a.m., May 29, 1992.

It is also requested that a presentation be provided for the team to address the following areas of interest:

1. Personnel who will support the inspection.

2. An overview of the various organizational units involved in the design, technical support, operation and maintenance of the Electrical Distribution System (EDS).

3. EDS arrangement, especially any features that may be considered unique to Browns Ferry.

4. Specific regulatory commitments (or exemptions) if they are unique in nature.

5. In-house self-assessment programs and identification of findings.

6. An overview of programs/procedures for control of load growth, setpoint control, fuse control, and modifications to the EDS.

7. A summary of past (last five years) and planned major modifications to the EDS.

8. Overview and status of any design-basis reconstitution program or calculation update program applicable to the EDS.

9. An overview of the documentation you have provided in the work area to support the inspection as requested herein.

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The objective of this inspection is to assess the capacity and capability of the EDS to perform its intended functions during all plant operating and accident conditions. It is requested that the following documentation and/or records be made available at the designated work area for the NRC team:

1. As-built drawings for all AC and DC voltage levels (one line diagrams preferred).

2. Calculations/analyses supporting plant AC and DC electrical system design

   a. Basis for setting of voltage relays and their control logic
   b. Short-circuit currents
   c. Voltage regulation
   d. Coordination of overcurrent protection (circuit breakers, relays, fuses)
   e. Cable sizing
   f. Electrical design computer program users manual and validation process
   g. Index of electrical calculations, if available

3. Emergency Diesel Generator (EDG) documentation

   a. Copies of last completed Technical Specification surveillances
   b. Documentation showing how load acceptance capability and capacity was established (i.e., dynamic loading analysis, test, calculation, etc.)
   c. Detail drawings and sizing calculations for fuel oil storage tanks and day tanks
   d. Drawings and design-basis documentation for support systems (fuel oil transfer, lube oil, cooling water, room ventilation, starting air, etc.)
   e. Steady state loading calculation
   f. EDG relay protection scheme (one-line relay functional diagram)
   g. EDG vendor manual

4. Electrical and mechanical modifications

   a. Plant procedures for the control of modifications
   b. List of electrical modifications (titles and brief descriptions) made to EDS during the last three years
   c. List of all mechanical modifications to EDS and support systems

5. Load profiles and sizing calculations for station batteries, battery chargers, and inverters

6. Records for most recent performance of the following preventive maintenance, calibrations, and tests:

   a. Degraded voltage and loss of voltage relay calibrations
   b. Service and capacity tests for safety related batteries

c. Class 1E metal clad switchgear calibrations
d. Class 1E kV protective relaying calibrations
e. Class 1E switchgear preventive maintenance

f. Class 1E molded case circuit breaker preventive maintenance and calibrations
g. Battery charger and inverter preventive maintenance

7. Protective relay setting list

8. System descriptions and design criteria for EDS related systems

9. Purchase specification and manufacturer's test data for EDGs

10. Procedures for sampling and testing of diesel fuel oil - periodic and receipt inspection of new fuel

12. Seismic calculations and/or evaluations for EDG components, fuel oil storage and distribution system

13. HVAC calculation and/or analysis for safety-related electrical equipment spaces, including EDG rooms

14. Calculations for battery room hydrogen generation

15. Manufacturers' curves and design data with maximum flow requirements for safety related pumps and fans

16. Safety related service water system piping elevation sketch

17. List of identified problems in EDS over last 5 years by plant problem identification programs

Sufficient licensee personnel, knowledgeable in the above areas, should be available to support the inspection effort. Your cooperation during this inspection will be appreciated. Should you have any questions regarding this inspection, please contact B. Breslau at 404/331-5600.

Sincerely,

Original signed by
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