

Surry Power Station, Units 1 & 2
Docket Nos: 50-280/281
Report No: 79-008/01T-0
Event Date: 3/23/79

Under Power of 480 V Emergency Bus

1. Description of Event:

During a load study of the Unit 1 480 VAC emergency bus, the Architect Engineer discovered that an under power condition could exist for a postulated loss of coolant accident (LOCA) with or without loss of off-site power. The projected maximum load following a LOCA for Emergency Bus 1H1 was 1661 KVA, or 125% of rated capacity of the 4160 to 480 VAC transformer and output line circuit breaker 14H1. The projected maximum load for bus 1J1 and output line circuit breaker is 1737 KVA, or 130% of rated capacity.

A load study of Unit #2 480 VAC emergency bus has not been completed, but it appears a similar under power condition exists.

This event is contrary to Technical Specification 3.16 and is reportable as per Technical Specification 6.6.2.A.9.

2. Probable Consequences and Status of Redundant Systems:

The probable consequences of an under power condition would be the loss of vital engineered safeguards due to the tripping of the output breaker of the 4160 to 480 VAC transformer. This condition would exist until loads on the emergency bus were manually shed to a point where the bus could be re-energized.

An under power condition was projected to exist on the redundant emergency bus.

The health and safety of the public were not affected.

3. Cause:

The LOCA under power condition developed as a result of design deficiencies during construction.

4. Immediate Corrective Action:

Unit #1 and Unit #2 were in the cold shutdown mode, and will remain in this mode until this deficiency is corrected.

5. Subsequent Corrective Action:

An additional Class 1E 480 V load center will be established for each of the emergency buses (1H, 1J). This will allow the redistribution of sufficient load to eliminate the under power condition on each bus, and provide the capability for future expansion.

(Attachment, page 2 of 2)

Surry Power Station, Units 1 & 2

Docket Nos: 50-280/281

Report No: 79-008/01T-0

Event Date: 3/23/79

Under Power on 480 V Emergency Bus (Continued)

5. Subsequent Corrective Actions: (Cont'd.)

Alternate solutions are being investigated for Unit #2 under power conditions on 480 V emergency load center, due to room restraints and a long lead time for new equipment.

This modification will be accomplished prior to departing cold shutdown.

6. Actions Taken to Prevent Recurrence:

Existing administrative and procedural controls to review any proposed change to the loading scheme of the emergency load centers will be followed. In addition, a load study will be conducted as a part of the Emergency Bus modification to verify adequate load capability.

7. Generic Implications:

A load study is being conducted on Surry Unit #2 to determine load and possible corrective actions.