

A.2 Under abnormal conditions ~~including Black Plant startup~~, one reactor may be made critical providing the following conditions are met:

- a. One 345 KV transmission line is in service; or the gas turbine is operating.
- b. The 345/13.8 KV and the 13.8/4.16 KV station auxiliary transformers associated with the unit to be taken critical are in service; or the associated 13.8/4.16 KV station auxiliary transformer is in service and the gas turbine is operating.
- c. Reactor power level is limited to 50% rated power until 2 or more transmission lines are restored to service.
- d. 480 Volt buses B03 and B04 for the unit to be taken critical are energized.
- e. 4160 Volt buses A03, A04, A05, and A06 for the unit to be taken critical are energized.
- f. A fuel supply of 11,000 gallons is available; and both diesel generators are operable.
- g. All four batteries and their associated DC systems are operable.
- h. Four battery chargers are operable with one charger carrying the DC loads of each DC main distribution bus.

B.1 During power operation of one or both reactors, the requirements of 15.3.7.A.1 may be modified to allow the following arrangements of systems and components:

- a. If the 345 KV lines are reduced to only one, any operating reactor(s) must be promptly reduced to, and limited to, 50% power. If all 345 KV lines are lost, any operating reactor(s) will be reduced to supplying its auxiliary load, until one or more 345 KV transmission lines are again available.
- b. If both 345/13.8 KV auxiliary transformers are out of service and only the gas turbine is operating, only one reactor will remain operating and it will be limited to 50% power. The second reactor will be placed in the hot shutdown condition.

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3. Each diesel generator shall be given an inspection, at least annually, following the manufacturer's recommendations for this class of stand-by service.
4. Each fuel oil transfer pump shall be run monthly.

The above tests will be considered satisfactory if all applicable equipment operates as designed.

#### B. Safety-Related Station Batteries

1. Every month the voltage of each cell (to the nearest 0.05 volt), the specific gravity and temperature of a pilot cell in each safety-related battery and each battery voltage shall be measured and recorded.
2. Every 3 months the specific gravity, the height of electrolyte, and the amount of water added, for each cell, and the temperature of every fifth cell, shall be measured and recorded.
3. At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.
- ~~4. Each battery shall be subjected to a load test at intervals recommended by the manufacturer but not exceeding five years. The battery voltage as a function of time shall be monitored to establish that the capacity is sufficient to carry the loads as delineated in FSAR Table 8.2-3 for the specified length of time. All electrical connections will be checked for tightness.~~
4. Each Safety-Related Station Battery shall be demonstrated OPERABLE:
  - a. At least once per 18 months (SERVICE TEST) by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle.\*



- b. At least once per 60 months (PERFORMANCE TEST) by verifying that the battery capacity is at least 80% of the manufacturer's rating. This performance discharge test may be performed in lieu of the battery service test.

Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its previous performance test, or is below 90% of the manufacturer's rating. When performance tests are required, they may be performed in lieu of the battery service test.\*

\*Service and Performance testing to begin subsequent to installation of the swing safety-related battery expected by the end of 1992.

#### Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safeguards equipment will function automatically in the event of a loss of all normal AC station service power.

The testing frequency specified will be often enough to identify and correct any mechanical or electrical deficiency before it can result in a system failure. The fuel supply and starting circuits and controls are continuously monitored and any faults are alarm indicated. An abnormal condition in these systems would be signaled without having to place the diesel generators themselves on test.

Station batteries will deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails.

- If a battery cell has deteriorated or if a connection is loose, the voltage under load will drop excessively indicating replacement or maintenance.

A Service Test performed at least every 18 months demonstrates adequate battery capacity to supply power to loads required during the most demanding duty cycle. This design duty cycle occurs upon a single-unit trip coincident with a loss of all A.C. power.

A Performance Test conducted at least every 60 months is a constant discharge rate capacity test which allows comparison with the manufacturer's rating of the battery. This test is the best indicator of the effect of aging on battery capacity. Provision is made to change this test periodicity to annual when the battery is degraded or has reached a point in its service life beyond which capacity decrease with time is accelerated. Operability is satisfactorily demonstrated by achieving a capacity of at least 80% manufacturer's rating.

#### Reference

FSAR, Section 8.2