

3.9 BASES

The general objective of this Specification is to assure an adequate source of electrical power to operate the auxiliaries during plant operation, to operate facilities to cool and lubricate the plant during shutdown and to operate the engineered safeguards following the accident. There are three sources of ac electrical energy available; namely, the startup transformer, the emergency transformer and two diesel generators. The dc supply is required for switch gear and engineered safety feature systems. This supply consists of two 125V DC and two 250V DC batteries and their related chargers. Specification 3.9.A states the required availability of ac and dc power; i.e., active off-site ac sources and the required amount of on-site ac and dc sources.

Auxiliary power for CNS is supplied from the startup transformer and the normal transformer. Both of these transformers are sized to carry 100% of the station auxiliary load. The emergency transformer is about one third the size of these two transformers and is equal in size to both emergency diesel generators.

The startup transformer and the emergency transformers are the offsite power sources. Their voltage is monitored by undervoltage relays which provide low voltage protection for the emergency buses. Whenever the voltage setpoint and time delay limit for the undervoltage relays have been exceeded, the emergency buses are automatically disconnected from the offsite power source.

If the startup or emergency transformer is lost, the unit can continue to operate since the unit auxiliary transformer is in service, and the emergency or startup transformer and the diesels are available.

If both the startup and emergency transformers become inoperable, the power level must be reduced to a value where by the unit can safely reject the load and continue to supply auxiliary electric power to the station.

In the normal mode of operation, the startup and emergency transformers are energized and two diesel generators are operable. One diesel generator may be allowed out of service based on the availability of power from the startup transformer and the fact that one diesel generator carries sufficient engineered safeguards equipment to cover all breakers. With the startup transformer and one diesel generator out of service, the off site transmission line corresponding to the emergency transformer must be available. Upon the loss of one on-site and one off-site power source, power would be available from the other immediate off-site power source and the two operable on-site diesels to carry sufficient engineered safeguards equipment to cover all breaks. In addition to these two power sources, removal of the Isolated Phase Bus "quick" disconnect links would allow backfeed of power through the main transformer to the unit auxiliary transformer and provide power to carry the full station auxiliary load. The time required to perform this operation is comparable to the time the reactor could remain on RCIC operation before controlled depressurization need be initiated.

Once each operating cycle, during shutdown, either a service test or performance discharge is performed on the 125 volt batteries. The performance discharge test is performed in lieu of the service test when a battery shows signs of degradation. Degradation is indicated when battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 85% of the manufacturer's rating.

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS

3.9.A

4.9.A (cont'd.)

B. Operation with Inoperable Equipment

1. Whenever the reactor is in Run Mode or Startup Mode with the reactor not in a Cold Condition, the availability of electric power shall be as specified in 3.9.A.1, except as specified in 3.9.B.1.

a. Incoming Power

1. From and after the date incoming power is not available from a startup or emergency transformer, continued reactor operation is permissible under this condition for seven days. At the end of this period, provided the second source of incoming power has not been made immediately available, the NRC must be notified of the event and the plan to restore this second source. During this period, the two diesel generators and associated critical buses must be demonstrated to be operable.

2. From and after the date that incoming power is not available from both startup and emergency transformers (i.e., both failed), continued operation is permissible, provided the two diesel generators and associated critical buses are demonstrated to be

3. The pilot cell voltage is 2.15V minimum and specific gravity 1.195 minimum, corrected for 77°F and electrolyte level.
- b. Every quarter, the following parameters shall be verified. The actual values shall be measured and logged:
 1. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.
 2. For each connected cell, the voltage is 2.15V minimum and specific gravity is 1.190 minimum, corrected for 77°F and electrolyte level. The average specific gravity of all connected cells will be a minimum of 1.200.
 3. The electrolyte temperatures in a representative sample of cells, consisting of at least every sixth cell, are within ±5°F.
- c. Once each operating cycle the 125V battery charger will be tested to verify that the charger can supply 200 Amperes at 125V for four hours.
- d. Once each operating cycle, during shutdown, one of the following tests will be performed:
 1. A battery service test to verify that battery capacity is adequate to supply the emergency load profile.
 2. A performance discharge test, in lieu of the above service test, once every five years to verify that battery capacity is at least 85% of the manufacturer's rating.
 3. A performance discharge test, in lieu of the above service test, when the battery shows signs of degradation or has been in service seventeen years or longer.