3.7 AUXILIARY ELECTRICAL SYSTEMS

Applicability

Applies to the availability of off-site and on-site electrical power for station operation and for operation of station auxiliaries.

Objective

To define those conditions of electrical power availability necessary to provide for safe reactor operation and to provide for continuing availability of engineered safety features systems in an unrestricted manner.

Specification

3.7.1 The reactor shall not be brought critical unless the following conditions are met:

A. All nuclear service buses, nuclear service switchgear, and nuclear service load shedding systems are operable.

B. Two 220 kV lines are in service.

C. One 6900 volt reactor coolant pump motors bus is energized.

D. Emergency diesel generators are operable and at least 35,000 gallons of fuel are in each storage tank.

E. Plant batteries are charged and in service.

F. Two out of three battery chargers are operable for 125 volt d-c buses "A" and "C", and "B" and "D".

G. Three of the four nuclear service bus inverters including A & B are operable for 120 volt a-c vital. | 71

H. Both startup transformers, No. 1 and No. 2, are in service.

3.7.2 The reactor shall not remain critical unless all of the following requirements are satisfied:

A. One 220 kV line shall be fully operational and capable of carrying nuclear service and auxiliary power except as specified in D below.

B. Both startup transformers shall be in service except that one will be sufficient if during the time one startup transformer is inoperable, a diesel generator is started and run continuously.

C. Both diesel generators shall be operable except that from and after the date that one of the diesel generators is made or found to be inoperable for any reason, reactor operation is permissible for the succeeding 15 days provided that during such 15 days the operable diesel generator shall be load tested daily and both startup transformers are available. If the diesel is not returned to service at the end of 15 days, the other diesel will be started and run with at least minimum load continuously for an additional 15 days. If at the end of the second 15 days the diesel is not returned to service, the reactor shall be brought to the cold shutdown condition within an additional 24 hours.

D. If the plant is separated from the system while carrying its own auxiliaries, or if all 220 kV lines are lost, continued reactor operation is permissible provided that one emergency diesel generator shall be started and run continuously until a transmission line is restored.

E. The essential nuclear service electrical buses, switchgear, load shedding, and automatic diesel start systems shall be operable except as provided in C above and as required for surveillance testing.

F. Nuclear service batteries are charged and in service except that one nuclear service battery may be removed from service for not more than 24 hours.

G. Both nuclear services busses are operable except that one nuclear service bus may be removed from service for not more than 24 hours provided that all equipment on the other nuclear service bus is operable.

H. Nuclear service inverters A and B are operable except that inverter A or B may be removed from service for not more than 48 hours. | 71

3.7.3 If both diesel generators become inoperable, the unit shall be placed in the cold shutdown condition.

Bases

The auxiliary electrical power systems are arranged so that no single failure can inactivate enough safety features equipment to jeopardize plant safety.

The normal source of power to the redundant nuclear service loads is by the two startup transformers connected to the 220-kV station switchyard. All of the normal power supply to plant auxiliary loads is provided through the two unit auxiliary transformers connected to the generator bus. Emergency power for the nuclear service loads is obtained from two on-site diesel generators. Since the startup transformers are sized to carry full plant auxiliary loads, if plant auxiliaries' power is not available from the unit auxiliary transformer it will be obtained from the startup transformers.