

3.3.6 Exceptions to 3.3.5 shall be as follows:

- (a) Both core flooding tanks shall be operational above 300 psig.
- (b) Both motor-operated valves associated with the core flooding tanks shall be fully open above 800 psig.
- (c) One pressure instrument channel and one level instrument channel per core flood tank shall be operable above 800 psig.
- (d) One reactor building cooling fan and associated cooling unit shall be permitted to be out of service for seven days provided both reactor building spray pumps and associated spray nozzle headers are in service at the same time.
- (e) If the requirements of Specification 3.3.1(f) are not met, the borated water storage tank shall be considered unavailable and action shall be initiated in accordance with Specification 3.2.

3.3.7 Prior to initiating maintenance on any of the components, the duplicate (redundant) component shall be tested to assure operability.

- 3.3.8
- (a) Reactor power shall not be increased above 60% FP unless three HPI pumps and two HPI flow paths are operable.
 - (b) During power operation above 60% FP, tests or maintenance shall be allowed on any one HPI pump, provided two trains of the HPI system are operable. If the inoperable HPI pump is not restored to operable status within 72 hours, reactor power shall be reduced below 60% FP within an additional 12 hours.
 - (c) If during power operation above 60% FP a high pressure injection flow path becomes inoperable, reactor power shall be reduced below 60% FP within 12 hours.

Bases

The requirements of Specification 3.3 assure that, before the reactor can be made critical, adequate engineered safety features are operable. Two high pressure injection pumps and two low pressure injection pumps are required (except as specified in Specification 3.3.8 and as discussed further on in these bases.) However, only one of each is necessary to supply emergency coolant to the reactor in the event of a loss-of-coolant accident. Both core flooding tanks are required as a single core flood tank has insufficient inventory to reflood the core. (1)

The borated water storage tanks are used for two purposes:

- (a) As a supply of borated water for accident conditions.
- (b) As a supply of borated water for flooding the fuel transfer canal during refueling operation. (2)

Three-hundred and fifty thousand (350,000) gallons of borated water (a level of 46 feet in the BWST) are required to supply emergency core cooling and reactor building spray in the event of a loss-of-core cooling accident. This amount fulfills requirements for emergency core cooling. The borated water storage tank capacity of 388,000 gallons is based on refueling volume requirements. Heaters maintain the borated water supply at a temperature to prevent freezing. The boron concentration is set at the amount of boron required to maintain the core 1 percent subcritical at 70°F without any control rods in the core. This concentration is 1,338 ppm boron while the minimum value specified in the tanks is 1,800 ppm boron.

The spray system utilizes common suction lines with the low pressure injection system. If a single train of equipment is removed from either system, the other train must be assured to be operable in each system.

When the reactor is critical, maintenance is allowed per Specification 3.3.5 and 3.3.6 provided requirements in Specification 3.3.7 are met which assure operability of the duplicate components. Operability of the specified components shall be based on the results of testing as required by Technical Specification 4.5. The maintenance period of up to 24 hours is acceptable if the operability of equipment redundant to that removed from service is demonstrated immediately prior to removal. The basis of acceptability is a likelihood of failure within 24 hours following such demonstration.

It has been shown for the worst design basis loss-of-coolant accident (a 14.1 ft² hot leg break) that the reactor building design pressure will not be exceeded with one spray and two coolers operable. Therefore, a maintenance period of seven days is acceptable for one reactor building cooling fan and its associated cooling unit. (3)

In the event that the need for emergency core cooling should occur, functioning of one train (one high pressure injection pump, one low pressure injection pump, and both core flooding tanks) will protect the core and in the event of a main coolant loop severance, limit the peak clad temperature to less than 2,200°F and the metal-water reaction to that representing less than 1 percent of the clad.

Three low pressure service water pumps serve Oconee Units 1 and 2 and two low pressure service water pumps serve Oconee Unit 3. There is a manual cross-connection on the supply headers for Units 1, 2, and 3. One low pressure service water pump per unit is required for normal operation. The normal operating requirements are greater than the emergency requirements following a loss-of-coolant accident.

The requirement to have three HPI pumps and two HPI flow paths operable during power operation above 60% FP (Specification 3.3.8) is based on considerations of a 0.04 square foot break at the reactor coolant pump discharge piping for which two HPI trains (two pumps and two flow paths) are required to assure adequate core cooling. The analysis of this break indicates that for operation at or below 60% FP only a single train of the HPI system is needed to provide the necessary core cooling.

REFERENCES

- (1) FSAR, Section 14.2.2.3
- (2) FSAR, Section 9.5.2
- (3) FSAR, Supplement 13