

Duke Power Company

Oconee Nuclear Station

Attachment 1

Proposed Technical Specification Revision

BWST Minimum Temperature

pages 3.3-3

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and breakers locked open and tagged; a minimum level of  $13 \pm .44$  feet ( $1040 \pm 30$  ft.<sup>3</sup>) and one level instrument channel per CFT; a minimum concentration of borated water in each CFT of 1,800 ppm boron; and pressure at  $600 \pm 25$  psig with one pressure instrument channel per CFT.

#### 3.3.4 Borated Water Storage Tank (BWST)

When the RCS, with fuel in the core, is in a condition with pressure equal to or greater than 350 psig or temperature equal to or greater than 250°F:

- a. The BWST shall have operable two level instrument channels.
  - (1) Tests or maintenance shall be allowed on one channel of BWST level instrumentation provided the other channel is operable.
  - (2) If the BWST level instrumentation is not restored to meet the requirements of Specification 3.3.4.a above within 24 hours, the reactor shall be placed in a hot shutdown condition within 12 hours. If the requirements of Specification 3.3.4.a are not met within 24 hours following hot shutdown, the reactor shall be placed in a condition with RCS pressure below 350 psig and RCS temperature below 250°F within an additional 24 hours.
- b. The BWST shall contain a minimum level of 46 feet of water having a minimum concentration of 1,800 ppm boron at a minimum temperature of 50°F. The manual valve, LP-28, on the discharge line shall be locked open. If these requirements are not met, the BWST shall be considered unavailable and action initiated in accordance with Specification 3.2.

#### 3.3.5 Reactor Building Cooling (RBC) System

- a. Prior to initiating maintenance on any component of the RBC system, the redundant component shall be tested to assure operability.
- b. When the RCS, with fuel in the core, is in a condition with pressure equal to or greater than 350 psig or temperature equal to or greater than 250°F and subcritical:
  - (1) Two independent RBC trains, each comprised of an RBC fan, associated cooling unit, and associated ESF valves shall be operable.
  - (2) Tests or maintenance shall be allowed on any component of the RBC system provided one train of the RBC and one train of the RBS are operable. If the RBC system is not restored to meet the requirements of Specification 3.3.5.b(1) above within 24 hours, the reactor shall be placed in a condition with RCS pressure below 350 psig and RCS temperature below 250°F within an additional 24 hours.

## Bases

Specification 3.3 assures that, for whatever condition the reactor coolant system is in, adequate engineered safety feature equipment is operable.

For operation up to 60% FP, two high pressure injection pumps are specified. Also, two low pressure injection pumps and both core flood tanks are required. In the event of the need for emergency core cooling, adequate protection will be provided by one high pressure injection pump, one low pressure injection pump, and both core flood tanks. In the event of a main coolant loop severance, the above equipment will 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 volume. (1) Both core flooding tanks are required as a single core flood tank has insufficient inventory to reflood the core.

The requirement to have three HPI pumps and two HPI flowpaths operable during power operation above 60% FP is based on considerations of potential small breaks 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. (2) The analysis of these breaks 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.

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 and fuel transfer canal during refueling operation. (3)

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 above 50°F to lessen the potential for thermal shock of the reactor vessel during high pressure injection system operation. 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.

It has been shown for the worst design basis loss-of-coolant accident (a 14.1 ft<sup>2</sup> hot leg break) that the Reactor Building design pressure will not be exceeded with one spray and two coolers operable. (4) Therefore, a maintenance period of seven days is acceptable for one Reactor Building cooling fan and its associated cooling unit provided two Reactor Building spray systems are operable for seven days or one Reactor Building spray system provided all three Reactor Building cooling units are operable.

Three low pressure service water pumps serve Oconee Units 1 and 2 and two low pressure service water pumps service 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.