DUKE POWER COMPANY

OCONEE NUCLEAR STATION

Attachment 1

Proposed Technical Specification Revision

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3.3.2 Low Pressure Injection (LPI) System

a. Prior to initiating maintenance on any component of the LPI 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:

(1) Two independent LPI trains, each comprised of an LPI pump and a flowpath capable of taking suction from the borated water storage tank and discharging into the RCS automatically upon ESPS actuation (LPI segment), together with two LPI coolers and two reactor building emergency sump isolation valves (manual or remote-manual) shall be operable.

(2) Tests or maintenance shall be allowed on any component of the LPI system provided the redundant train of the LPI system is operable. If the LPI system is not restored to meet the requirements of Specification 3.3.2.b(1) above within 24 hours, the reactor shall be placed in a hot shutdown condition within 12 hours. If the requirements of Specification 3.3.2.b(1) 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.

3.3.3 Core Flood Tank (CFT) System

When the RCS pressure is above 800 psig:

(a) Both CFT's shall be operable with the electrically operated discharge valves open and breakers locked open and tagged.

(b) Both CFT's shall have a level of 13 ± 0.44 feet (1040 ± 30 ft^3) with one level instrument channel per tank.

(c) Both CFT's shall have a pressure of 600 ± 25 psig with one pressure instrument per tank.

(d) The boron concentration in each CFT shall be greater than 1835 ppm.

(1) If the concentration in one CFT is less than 1835 ppm then the concentration must be restored to 1835 ppm within 24 hours. If the concentration has not been restored within 24 hours then the reactor shall be placed in hot shutdown within an additional 12 hours and in cold shutdown within the following 24 hours.

(2) If the concentration in both CFT's is less than 1835 ppm then the reactor shall be placed in hot shutdown within 12 hours and in cold shutdown within an additional 24 hours.

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 function of the core flood tanks is to complement the HPI and LPI system during a loss of coolant accident by injecting borated water into the reactor vessel. The limits on core flood tank level and pressure ensure that the assumptions used for CFT injection in the safety analysis are met.

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.(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. The minimum value specified in the tanks is 1835 ppm boron.

It has been shown for the worst design basis loss-of-coolant accident (a 14.1 ft^2 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 accpetable 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 serve Oconee Unit 3. There is a manual cross-connection on the supply headers for Unit 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.

Prior to initiating maintenance on any of the components, the redundant component(s) shall be tested to assure operability. Operability shall be based on the results of testing as required by Technical Specification 4.5.

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Attachment 2

No Significant Hazards Consideration Evaluation

No Significant Hazards Consideration Evaluation

Duke Power Company has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by the Nuclear Regulatory Commission in 10 CFR 50.92. This ensures that operation of the facility in accordance with the proposed amendment would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

As part of the Emergency Core Cooling System (ECCS), the function of the core flood tanks (CFTs) is to complement the High Pressure Injection (HPI) and Low Pressure Injection (LPI) Systems during a loss of coolant accident by injecting borated water into the reactor vessel. The proposed amendment allows, for a short time, a degraded mode of operation if one CFT boron concentration decreases below the current minimum of 1835 ppm.

The following evaluation demonstrates that when measured against the standards provided in 10 CFR 50.92, this amendment request does not constitute a significant safety hazards consideration.

First Standard

Involve a significant increase in the probability or consequences of an accident previously evaluated.

All accident analyses addressed in the Oconee Final Safety Analysis Report (FSAR) have been reviewed with respect to the requested specification change. Only two of the licensing basis accidents involve CFT actuation. Each is discussed below.

The steam line break accident in FSAR Section 15.13 involves a rapid cooldown of the Reactor Coolant System (RCS) in response to a double-ended rupture of a main steam line. The accident is analyzed using conservative initial conditions and kinetics parameters. For some of the sensitivity studies (15.13.3.2) the injection of borated water from the CFTs helps to limit the return to power caused by the overcooling. However, for the base case licensing basis steam line break (15.13.3.1) the core remains subcritical, since the cooldown is limited by the rapid isolation of feedwater from the affected steam generator. Because the RCS depressurization is limited for the base case, and no return to power occurs, the CFT boron concentration does not affect the consequences of the licensing basis event.

The loss of coolant accident (LOCA) in FSAR Section 15.14 involves a double-ended rupture of the RCS piping. The core flood tanks inject borated water into the reactor vessel after the pressure drops below 600 psig. This water, along with LPI injection from the borated water storage tank, reestablishes core cooling and prevents excessive fuel damage. It is apparent that, in the short term, there is no concern with post-LOCA recriticality because voids in the vessel act to maintain the core in a shutdown state. In addition, analyses are performed for each reload which verify that the BWST water is borated adequately to prevent long-term recriticality. The action statement in the proposed specification would allow a 24 hour period of operation with a lower-than-required CFT boron concentration. However, even in the unlikely event of a LOCA during that time there is sufficient boron in the BWST injection water and the intact CFT to ensure that the core would remain shutdown.

The probability of a licensing basis accident would be no higher under the proposed amendment than with the current technical specification. Currently the unit would begin a transient (shutdown) immediately after the discovery of low boron concentration in one of the CFTs. With the proposed change the unit would remain in normal steady-state operation while the CFT boron concentration is raised back to the required value. Maintaining the unit in steady-state operation for up to 24 hours following discovery of a low CFT boron concentration while trying to correct the problem should not significantly affect the probability of a previously analyzed accident.

Second Standard

Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment would not in any way create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed revision to the Technical Specifications would allow, for a short period of time, a degraded mode of operation with the boron concentration in one CFT less than 1835 ppm. Continued power operation with a low boron concentration in one CFT does not create the possibility of a new or different kind of accident.

Third Standard

Involve a significant reduction in a margin of safety.

The proposed revision would not reduce the margin of safety since the design limits of fission product barriers or the acceptance criteria or accident consequences are not affected. This change, on the other hand, would reduce the potential for unnecessary forced outages and accompanying Reactor Coolant System transients for small changes in CFT boron concentration.

In summary, Duke has determined and submits that the proposed amendment does not involve a significant safety hazards.