

Duke Power Company  
Oconee Nuclear Station

Attachment 1

Proposed Technical Specification Revision

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- 3.4.3 The 16 main steam safety relief valves shall be operable.
- 3.4.4 A minimum of 72,000 gallons of water per operating unit shall be available in the upper surge tank, condensate storage tank, and hot-well. A minimum of 5 ft. (=30,000 Gal.) shall be available in the upper surge tank.
- 3.4.5 Emergency Condenser Cooling Water (ECCW) System
- a. The RCS shall not be heated above 250°F unless the ECCW System is operable.
  - b. If the ECCW System becomes inoperable during operation above 250°F, and the system is not restored to operable status in seven days, then the unit shall be brought to hot shutdown within an additional 12 hours and below 250°F in another 12 hours.
- 3.4.6 The controls of the emergency feedwater system shall be independent of the Integrated Control System.

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

Attachment 2

No Significant Hazards Consideration Evaluation

## No Significant Hazards Consideration Evaluation

Duke Power Company (Duke) has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by the Commission's regulations 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.

The proposed amendment allows, for a short period of time, the continued operation of the Oconee units while the Emergency Condenser Cooling Water (ECCW) system is inoperable. The ECCW system is a unique design feature which allows for continued condenser circulating water flow by gravity following a loss of all station power except station batteries. This feature allows closed loop recirculation of condensate which might normally be vented to the atmosphere through the main steam relief valves as at other nuclear plants.

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.

Each accident analysis addressed in the Oconee Final Safety Analysis Report (FSAR) has been reviewed with respect to the requested specification change. The review has indicated that the ECCW System is referred to in only the hypothetical case where all station power except station batteries is lost (FSAR Section 15.8.3). All other accidents evaluated in the FSAR do not address the use of the ECCW System.

The impact that ECCW inoperability would have on the results of the analysis for the loss of all station power case was determined. Briefly, there is no increase in the probability that this accident scenario will occur as a result of the ECCW System being inoperable. Furthermore, with the ECCW System inoperable, the consequences resulting from this accident will not be increased.

The probability that this accident scenario will occur is not affected by this amendment request. The operability/inoperability of the ECCW System has no influence on events that may result in the loss of all station power.

The consequences resulting from this accident with the ECCW System inoperable have been evaluated. As addressed in the FSAR, the immediate operability of the ECCW System is not required. Additional means of decay heat removal are available, as described in the technical justification for this amendment request and the FSAR. With the turbine-driven emergency feedwater pump both without either electrical power or presence of Lake Keowee, several hours are available before exhausting the supply of stored condensate pumped into the steam generators and the steam vented to the atmosphere. When normal condensate supply is exhausted, then the auxiliary service water pumps or the standby shutdown facility (SSF) can put lake water directly into the steam generators. This feature ensures that the decay heat removal through the secondary side can continue as long as necessary.

In addition, the overall risk to the health and safety of the public is extremely low, because during the time the ECCW System is inoperable, there is a very low probability that a complete loss of power will occur. Furthermore, Oconee's emergency power system is provided by the two Keowee hydroelectric units instead of diesel generators, offering a high degree of reliable power for emergency situations.

#### Second Standard

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

The proposed amendment allowing for temporary inoperability of the ECCW System does not in any way create the possibility of a new or different kind of accident from any accident previously evaluated.

#### Third Standard

Involve a significant reduction in a margin of safety.

The proposed amendment specifies a degraded mode of operation for the ECCW System. The ECCW System is a backup system to the Condenser Circulating Water System (CCW) which provides coolant flow to the condensers during normal and emergency plant operations. The CCW System is a heat sink for Oconee Nuclear Station during plant cooldown and hot standby.

As stated earlier, the ECCW System will maintain a source of coolant flow to the condensers in the highly unlikely event in which all station power except station batteries is lost. As detailed in Section 15.8.3 the immediate operation of the ECCW System is not required. Further, even if the CCW or the ECCW Systems cannot provide coolant flow to the condensers, then steam produced in the steam generators will be relieved to the atmosphere via the main steam relief valves. If the normal condensate supply is exhausted, then the auxiliary service water pumps or the SSF can put lake water directly into

the steam generators. This feature ensures that decay heat removal through the secondary side can continue as long as necessary; therefore, the absence of a recirculation path for the steam will not compromise plant safety. Thus, the margin of safety will not be significantly reduced by the proposed amendment.

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

Technical Justifications

The Condenser Cooling Water (CCW) System provides forced flow of Lake Keowee water through the condenser tubes during normal and emergency operation. In addition, the Emergency Condenser Cooling Water (ECCW) System provides a discharge line for the CCW to the Keowee hydro tailrace. This feature allows lake water to flow through the condenser tubes due to gravitational forces only, in the absence of forced flow. Thus the ECCW System allows continued use of the condenser for heat removal following the unlikely event of a complete loss of offsite and onsite power.

The probability that a complete loss of off-site power will occur during the time interval in which the ECCW System is unavailable is very low. However, even if such an event were to occur, adequate core cooling is assured. A CCW pump could be lined up to emergency AC power to provide forced condenser cooling flow and allow continued steam recirculation through the condenser. Oconee Emergency Power is extremely reliable because it is supplied by the Keowee Hydro Station and does not depend on diesel generators. If CCW flow cannot be provided, then steam produced in the steam generators will be relieved to the atmosphere via the main steam relief valves. The absence of a recirculation path for the steam will not endanger plant safety. If the normal condensate supply is exhausted, then the auxiliary service water pumps can put the lake water directly into the steam generators after the secondary side is depressurized with the manual atmospheric dump valves. This feature ensures that decay heat removal through the secondary side can continue as long as necessary.

The ECCW System is a desirable feature which allows continued plant heat removal through the condensers during an extended loss of power. However, the system is not required to assure decay heat removal or to cooldown to cold shutdown conditions. Therefore, in the event that the ECCW System becomes inoperable while at power, it is preferable to repair the system rather than to require a plant transient (shutdown and cooldown) which may increase the chance that the system is needed. Seven days is a reasonable time to make repairs on the system.