

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
ATTACHMENT 1  
TECHNICAL SPECIFICATIONS

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2. The conditions of Table 3.7-1 for degraded operation are satisfied for the affected functional units.

In any event, if the reactor is subcritical, the inoperable circuit(s) or channel(s) shall be restored to operability and the conditions of Table 3.7-1 for normal operation shall be satisfied for all functional units before the reactor is returned to criticality.

- (c) One 4160 volt main feeder bus may be inoperable for 24 hours.
- (d) One complete single string (i.e., 4160 volt switchgear (TC, TD, or TE), 600 volt load center, (X8, X9, or X10), 600-208 volt MCC (XS1, XS2, or XS3), and their loads) of each unit's 4160 volt Engineered Safety Features Power System may be inoperable for 24 hours.
- (e) One or more of the following DC distribution components may be inoperable for periods not exceeding 24 hours<sup>1</sup> (except as noted in 3.7.2(g) below):
  - 1. One complete single string or single component (i.e., 125VDC battery, charger, distribution center, and panelboards) of the 125VDC 230KV Switching Station Power System.
  - 2. One complete single string or single component (i.e., 125VDC battery, charger, and distribution center) of the Keowee 125VDC Power System may be inoperable provided the remaining string of the Keowee 125 VDC Power System is operable and electrically connected to an operable Keowee hydro unit.
  - 3. One complete single string or single component (i.e., 125VDC battery, charger, distribution center, and associated isolating and transfer diodes) of any units 125VDC Instrumentation and Control Power System. Only one battery more than the number allowed to be inoperable per 3.7.1 (f) for the Station may be removed from service under this paragraph.
  - 4. One 125 VDC instrumentation and control panelboard and its associated loads, per unit, provided that no additional AC buses are made inoperable beyond the provisions of 3.7.2(a), (c), and (d), and provided that the conditions of Table 3.7-1 for normal operation are satisfied for all functional units of the EPSL before the 125 VDC instrumentation and control panelboard becomes inoperable. Additionally, the provisions of 3.7.2.(h) must be observed for the 120 VAC vital instrumentation power panelboard which is powered by the affected 125 VDC panelboard.
- (f) For periods not to exceed 24 hours each unit's 125 VDC system may be separated from its backup unit via the isolating and transfer diodes.
- (g) One battery each, from one or more of the following 125VDC systems may be simultaneously inoperable for 72 hours in order to perform an equalizer charge after the surveillance requirements of Specification 4.6.10 or performance test:

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<sup>1</sup>One 230kV switchyard battery and associated distribution center may be inoperable for 7 days for its respective battery replacement modification.

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

ATTACHMENT 2

TECHNICAL JUSTIFICATION AND  
NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

TECHNICAL JUSTIFICATION  
NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

Technical Specification Change:

The proposed revision to Technical Specifications provided in Attachment 1 adds a footnote to Specification 3.7.2(e) to allow each 230kV switchyard battery and associated distribution center to be inoperable for seven days in order to replace the batteries.

Background:

The 230kV Switchyard (SY) 125VDC System consists of 125VDC battery sources and a distribution system as described below (Reference FSAR Figure 8-7). It provides primary and backup DC power for protective relaying and actuation circuits associated with the 230kV SY, as well as DC control power for 230kV power circuit breaker (PCB) operation. It is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure.

Safety functions provided by the 230kV SY 125VDC System include:

- a) connection of on-site power from Keowee to Oconee via the emergency onsite overhead power path; and
- b) isolation of Oconee (including Keowee) from degraded grid voltage through action of the Degraded Grid Protection System (DGPS).

With the exception of the functions of the DGPS, all functions of the 230kV Switchyard DC Sources and Distribution System can be considered redundant to those associated with the emergency onsite underground power path.

There are two 125VDC batteries (SY-1; SY-2) in the 230kV SY Relay House, each with an associated battery charger. A spare charger, which can be connected to either battery, is also provided. These components, along with their interconnecting wiring and breakers, comprise the two 125VDC Sources for the 230kV SY.

The output of 230kV SY 125VDC Sources SY-1 and SY-2 are connected to Distribution Centers SY-DC-1 and SY-DC-2, respectively. A bus tie with normally open breakers is provided between the distribution centers to "backup" a battery when it is removed for servicing. The capacity of a single battery is sufficient to carry the loads of both distribution centers. SY-DC-1 supplies DC Panelboards DY<sub>A</sub>, DY<sub>B</sub>, DY<sub>C</sub>, and DY<sub>D</sub>; SY-DC-2 supplies DC Panelboards DY<sub>E</sub>, DY<sub>F</sub>, DY<sub>G</sub>, and DY<sub>H</sub>. DC Panelboards DY<sub>D</sub> and DY<sub>H</sub> provide power for non-safety functions. Distribution Centers SY-DC-1 and SY-DC-2 with their associated safety-related DC panelboards and interconnecting wiring and breakers comprise the 230kV SY DC Distribution System.

The two distribution centers are redundant, each providing power to all components necessary for performing the safety functions of the 230kV SY DC

System. The redundant panelboards supply power to separate channels of the Degraded Grid Protection System (DGPS) circuits, separate channels of other protective relaying circuits, and separate feeds for each 230kV PCB's closing and tripping control. Separate dual trip coils are provided for each PCB. Isolating diodes are provided for redundant power feeds to each PCB's closing coil circuit.

Modification:

The 230kV SY batteries were installed in 1969. It is considered that the batteries are near end of life. The modification to replace the batteries will include: replacement of the existing 59 cell batteries SY-1 and SY-2 with 60 cell batteries, replacement of the railings on one row of each battery rack to accommodate the additional 60<sup>th</sup> cell, replacement of several circuit breakers, and equalizer charge of the new batteries following installation. Specifically, the modification will be performed in the following sequence:

- 1) The first distribution center will be removed from service, the breakers replaced, then tied back to its associated battery and checked. This distribution center will then be cross tied to the other distribution center. This is expected to require approximately one day.
- 2) The associated battery will be replaced, then resistance tested. This is expected to require approximately three days.
- 3) The associated battery will then be equalizer charged, then tied to the distribution center. This is expected to require approximately three days.

This sequence will be repeated on the remaining battery/distribution center. Thus, this modification is expected to require each battery/distribution center to be inoperable for a total of seven days.

Although TS 3.7.2(e) does not specify compensatory measures in the event of 230kV SY DC system degradation, the following actions will be taken in support of this modification:

- 1) As with all switchyard activities, this modification will be implemented in accordance with the guidance provided in the Oconee station directive for conduct of operations in the switchyard. In addition, as with all switchyard modifications, this modification will be implemented in accordance with approved procedures.
- 2) TS 4.6.9.a requires a weekly verification of pilot cell electrolyte level, specific gravity, and float voltage, as well as overall battery float voltage. Prior to removing a battery from service, the remaining battery will be tested in accordance with TS 4.6.9.a. In addition, while a battery is inoperable, the remaining battery will be tested in accordance with TS 4.6.9.a daily.
- 3) As described above, the only safety function provided by the 230kV SY

DC system which is not redundant to the underground emergency power path is the DGPS. In order to maintain both DGPS actuation logic channels available (although vulnerable to single failure of the battery) and to provide redundant power feeds to other supported equipment, the distribution centers will be cross tied when practical during implementation of the modification. Further, when one channel of the DGPS is deenergized, switchyard voltage will be monitored every two hours to ensure it is adequate. Grid voltage is also monitored by the system dispatcher. In the event of an actual degraded grid condition, the provisions of TS 3.7.5 (all 230kV transmission lines lost) would apply and actions would be taken to improve the grid situation.

4) Although the overhead emergency power path will not be made inoperable as a result of this modification, additional defense in depth for the AC power sources will be provided. Specifically, the overhead emergency power path and the underground emergency power path will be maintained operable during implementation of the modification.

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 NRC regulations in 10CFR50.92. 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:

Each accident analysis addressed within the Oconee Final Safety Analysis Report (FSAR) has been examined with respect to the change proposed within this amendment request. Analyses have shown that the probability of any Design Basis Accident (DBA) is not affected by this change, since adequate administrative measures will be in place to prevent loss of the switchyard during implementation of this modification. The reliability of emergency power is not significantly affected by a one time extension of allowable outage time for one train of the 230kV switchyard DC system. The remaining train is adequate to assure operability of the Keowee overhead path, while the Keowee underground path will be maintained operable during the battery outage. Further, the new batteries are expected to be more reliable than the existing batteries which are approaching their end of life.

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

Operation of ONS in accordance with these Technical Specifications will not create any failure modes not bounded by previously evaluated accidents. Consequently, this change will not create the possibility of a new or different kind of accident from any kind of accident previously evaluated.

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

The design basis of auxiliary electrical systems is to supply the required ES loads of one Unit and safe shutdown loads of the other two units. Administrative measures will be in place to prevent loss of the switchyard during implementation of this modification. The reliability of emergency power is not significantly affected by a one time extension of allowable outage time for one train of the 230kV switchyard DC system. The remaining train is adequate to assure operability of the Keowee overhead path, while the Keowee underground path will be maintained operable during the battery outage. Therefore, there will be no significant reduction in any margin of safety.

Duke has concluded based on the above that there are no significant hazards considerations involved in this amendment request.