ATTACHMENT

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

PROPOSED TECHNICAL SPECIFICATION REVISION

1. 230KV Switching Station 125VDC Power System

2. Keowee Hydro Station 125VDC Power System

3. Each unit's 125VDC Instrumentation and Control Power System

(f) For periods not to exceed 24 hours each unit's 125VDC system may be separated from its backup unit via the isolating and transfer diodes.

3.7.3 In the event that the conditions of Specification 3.7.1 are not met within the time specified in Specification 3.7.2, except as noted below in Specification 3.7.4, 3.7.5, 3.7.6, and 3.7.7 the reactor shall be placed in a hot shutdown condition within 12 hours. If these requirements are not met within an additional 48 hours, the reactor shall be placed in the cold shutdown condition within 24 hours.

3.7.4 In the event that all conditions in Specification 3.7.1 are met except that one of the two Keowee hydro units is expected to be unavailable for longer than the test or maintenance period of 72 hours, the reactor may be heated about 200°F if previously shutdown or be permitted to remain critical or be restarted provided the following restrictions are observed.

(a) Prior to heating the reactor above 200°F or prior to the restart of a shutdown reactor or within 72 hours of the loss of one Keowee hydro unit, the 4160 volt standby buses shall be energized by a Lee gas turbine through the 100 kV circuit. The Lee gas turbine and 100 kV transmission circuit shall be electrically separate from the system grid and offsite non-safety-related loads.

(b) The remaining Keowee hydro unit shall be connected to the underground feeder circuit and this path shall be verified operable within 1 hour and weekly thereafter.

(c) The remaining Keowee hydro unit shall be available to the overhead transmission circuit but generation to the system grid shall be prohibited except for periods of test.

(d) Operation in this mode is restricted to periods not to exceed 45 days and the provisions of this specification may be utilized without prior NRC approval only once in three years for each Keowee hydro unit. Office of Inspection and Enforcement, Region II, will be notified within 24 hours.

3.7.5 In the event that all conditions of Specification 3.7.1 are met except that all 230 kV transmission lines are lost, the reactor shall be permitted to remain critical or be restarted provided the following restrictions are observed:

The standby bus can receive power from the hydro station through the underground feeder circuit or from a combustion turbine generator at the Lee Steam Station over an isolated 100 kV transmission line. The 230 kV switchyard can receive power from the on-site Keowee hydro station or from several off-site sources via transmission lines which connect the Oconee Station with the Duke Power system power distribution network.

Redundancy of DC System

A. 125 VDC Instrumentation and Control Power System

The 125 VDC Instrumentation and Control (I&C) Power System consists of two batteries, three battery chargers, and two I&C distribution centers per unit. All reactor protection and engineered safety features loads on this system can be powered from either the Unit 1 and Unit 2 or Unit 2 and Unit 2 or Unit 3 and Unit 1 125 VDC I&C distribution centers. The 125 VDC I&C distribution centers are normally supplied from their associated battery and charger. For one unit, in the event that only one of its batteries and associated chargers are operable, both I&C distribution centers will be tied together allowing operation of the DC loads from the unit's operable battery and charger. As shown above, one I&C battery (e.g., 1CA) can supply both I&C distribution centers (e.g., IDCA and IDCB) and their associated panelboard loads. Also, one of the three battery chargers for each unit can supply all connected ESF and reactor protection loads.

In order to find and correct a DC ground on the 125 VDC Instrumentation and Control system each unit's DC system must be separated from the other two units. This is due to the interconnected design of the system. With the backup function disabled the units would be in a degraded mode but would in fact have all of its own DC system available if needed. Each unit's batteries either CA or CB is capable of carrying all the 125 VDC Instrumentation and Control loads on that unit.

B. 125 VDC Switching Station Power System

There are two essentially independent subsystem each complete with an AC/DC power supply (battery charger), a battery bank, a battery charger bus, motor control center (distribution panel). Except for the support racks for the batteries, all safety-related equipment and the relay house in which it is located are seismic Category I design. The support racks for the batteries will be upgraded to seismic Category I as soon as possible. Each sub-system provides the necessary DC power to:

a. Continuously monitor operations of the protective relaying.

b. Isolate Oconee (including Keowee) from all external 120 kV grid faults,

c. Connect on-site power to Oconee from a Keowee hydro unit or,

d. Restore off-site power to Oconee from non-faulted portions of the external 230 kV grid.

Provisions are included to manually connect a standby battery charger to either battery/charger bus.

C. 125 VDC Keowee Station Power System

There are essentially two independent physically separated seismic Category I subsystems, each complete with an AC/DC power supply (charger) a battery bank, a battery/charger bus and a DC distribution center. Each subsystem provides the necessary power to automatically or manually start, control and protect one of the hydro units.

An open or short in any one battery, charger of DC distribution center, cannot cause loss of both hydro units.

The 230 KV sources, while expected to have excellent availability, are not under the direct control of the Oconee station and, based on past experience cannot be assumed to be available at all times. However, the opration of the onsite hydrostation is under the direct control of the Oconee Station and requires no offsite power to startup. Therefore, an onsite backup source of auxiliary power is provided in the form of twin hydro-electric turbine generators powered through a common penstock by water taken from Lake Keowee. The use of a common penstock is justified on the basis of past hydro plant experience of the Duke Power Company (since 1919) which indicates that the cumulative need to dewater the penstock can be expected to be limited to about one day a year, principally for inspection, plus perhaps four days every tenth year.

Operation with one Keowee Hydro unit out of service for periods less than 72 hours is permitted. The operability of the remaining Keowee hydro unit is verified within one hour by starting the unit and energizing the standby buses through the underground feeder circuit. This action is repeated once every eight hours thereafter until the Keowee hydro unit is restored to service and will provide additional assurance of the operability of the remaining unit.

Provisions have been established for those conditions in which long term preventative maintenance of a Keowee Hydro unit are necessary. The primary long term maintenance items are expected to be hydro turbine runner and discharge ring welding repairs which are estimated to be necessary every six to eight years. Also, generator thrust and guide bearing replacements will be necessary. Other items which manifest as failures are expected to be extremely rare and could possibly be performed during the permitted maintenance periods. Time periods of up to 45 days for each Keowee Hydro unit are permitted every three years. During these outages the remaining Keowee Hydro unit will be verified to be operable within one hour and weekly thereafter by starting the unit and energizing the underground feeder circuit. The remaining Keowee hydro unit will also be available through the overhead transmission path and will not be used for system peaking. Additionally, the standby buses will be energized continuously by one of the Lee gas turbines through the 100 kV transmission circuits.

This transmission circuit would be electrically separated from the system grid and all off-site non-safety-related loads. This arrangement provides a high degree of reliability for the emergency power systems.

Operation with both Keowee Hydro units out of service is permitted for planned or unplanned outages for periods of 72 or 24 hours respectively. Planned outages are necessary for the inspection of common underwater areas such as the penstock and to enable the removal of one Keowee unit from service. This would be a controlled evolution in which the availability and condition of the offsite grid, startup transformers and weather would be evaluated and a Lee gas

turbine would be placed in operation on the isolated 100 kV transmission line prior to commencement of the outage.

A time period of 24 hours for unplanned outages of both Keowee units is acceptable since a Lee gas turbine will be started within one hour and will energize the standby buses through the dedicated 100 kV transmission line. This period of time is reasonable to determine and rectify the situation which caused the loss of both Keowee units.

In the event that none of the sources of off-site power are available and it is considered important to continue to maintain an Oconee reactor critical or return it to criticality from a hot shutdown condition, one of the Lee gas turbines can be made available as an additional backup sources of power, thus assuring continued availability as an auxiliary power to perform an orderly shutdown of a unit should a problem develop requiring shutdown of both hydro units.