

October 29, 1993

Docket Nos. 50-269, 50-270
and 50-287

LICENSEE: Duke Power Company

FACILITY: Oconee Units 1, 2, and 3

SUBJECT: SUMMARY OF OCTOBER 7, 1993, MEETING TO DISCUSS PROPOSED CHANGES TO
OCONEE ELECTRICAL TECHNICAL SPECIFICATIONS

On October 7, 1993, the NRC staff met with representatives of Duke Power Company (DPC) at NRC offices to discuss the proposed changes to the Oconee Nuclear Station, Units 1, 2, and 3 Technical Specifications. Specific questions related to these changes had been forwarded to DPC by letter dated September 29, 1993, and served as the agenda for this meeting. Meeting attendees are listed in Enclosure 1. The questions which were discussed are provided in Enclosure 2.

Each question was discussed during the meeting to ensure that the purpose of the question was clearly understood by the licensee. The licensee also discussed the scope of their proposed response to each question. The licensee will document the response to each question by letter, due no later than November 29, 1993. In addition, the licensee committed to supplement the proposed changes to include a periodic surveillance test to verify operability of the overhead emergency electrical path.

Original signed by:

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Enclosures:

- 1. Attendees
- 2. Staff Questions

cc w/enclosures:

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Oconee Nuclear Station

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REQUEST FOR ADDITIONAL INFORMATION
PROPOSED REVISED TECHNICAL SPECIFICATIONS FOR THE
OCONEE NUCLEAR STATION DOCKET NUMBERS 50-269/70/87

Proposed Technical Specifications Section 3.7.1, "AC Sources - Operating"

1. Item A in the proposed Specification Section 3.7.1 permits one startup transformer to be shared by two of the three nuclear units for a period of time in excess of 24 hours. For this case, provide additional justification for permitting this operating configuration since under the actions heading A.1, A.2, A.3.1, and A.3.2 in the bases Section B.3.7.1, it is clearly indicated that for this configuration the inservice startup transformer capacity and voltage adequacy could be challenged under certain design basis accident (DBA) conditions. In addition, for this configuration, explicitly identify the DBA conditions in which the inservice startup transformer capacity could be challenged. Further, in the EG&G Technical Evaluation Report, Adequacy of Station Electric Distribution System Voltages, Oconee Nuclear Station, Unit Nos. 1, 2, and 3, dated January 1983, it is provided that "The present Technical Specifications permit the alignment of one startup transformer to two units. However, their analyses of June 4, 1980, and February 5, 1982, show that under degraded grid conditions, the Class 1E equipment would be required to operate below their minimum ratings. Therefore, Duke Power Company (DPC) has proposed to change their technical specifications to limit the use of a startup transformer to one unit. This will insure adequate voltages for the Class 1E equipment." In view of this, explain why the proposed revised technical specifications do not provide the indicated DPC proposal to change the technical specifications to limit the use of a startup transformer to one unit.
2. The proposed Item C in Specification Section 3.7.1 indicates that if one emergency power path is inoperable due to reasons other than an inoperable startup transformer, then the required actions are to verify the remaining emergency power path is OPERABLE within 1 hour and once per 12 hours thereafter and to restore the emergency power path to OPERABLE status within 72 hours. The current applicable technical specification for this plant condition requires verification that the remaining emergency power path is OPERABLE within 1 hour and once per 8 hours thereafter. Thus, provide additional technical bases for changing subsequent verifications from once per 8 hours thereafter to the proposed once per 12 hours thereafter.
3. Item G in Specification Section 3.7.1 has a required action to restore the inoperable Keowee Main Step-up transformer within 28 days. Provide a detailed discussion that includes the technical bases for a 28 day allowed outage time (AOT) for an inoperable Keowee Main Step-up transformer and explain why this AOT is considered a reasonable period of time for transformer replacement.

4. The bases section provided for the proposed Specification Section 3.7.1 indicates that at least one E breaker must be available to automatically supply power to the main feeder buses from the energized startup transformer. Further, the provided bases section indicates that if both E breakers are inoperable, then neither of the 230kV sources nor the overhead emergency power path can energize the main feeder buses, therefore, the startup transformer is considered to be inoperable. However, with only one of the two E breakers operable and the startup transformer operable, this condition is not explicitly addressed in the proposed Specification Section 3.7.1. Thus, provide a discussion which clearly explains why this condition need not be explicitly addressed.
5. Item D for the proposed Specification Section 3.7.1 indicates that with one inoperable E breaker and one inoperable S breaker on the same main feeder bus, then the associated main feeder bus is declared inoperable immediately. However, degradation occurs with one inoperable E breaker and one inoperable S breaker on different main feeder buses. As such, provide a discussion which explains why this condition is not specifically addressed.
6. If both emergency power paths are inoperable then the allowed outage time (AOT) to restore one emergency power path to OPERABLE status as indicated in Item E of the proposed Specification Section 3.7.1 is 60 hours. The current equivalent (both Keowee hydro units become unavailable for unplanned reasons) specification allows 24 hours for the reactor to remain critical. This being the case, provide additional technical bases for the proposed indicated less restrictive AOT.
7. Provide a technical discussion that includes detailed explanations of why it may be necessary to make an operable Keowee hydro unit inoperable in order to restore both Keowee hydro units. For this condition, also provide a discussion that includes the technical bases for the indicated 12 hour AOT.
8. The proposed technical specifications relocate to the bases section the current requirement for the Lee gas turbine and 100kV transmission circuit to be separated from the system grid and offsite non-safety related loads if the standby buses are energized by a Lee gas turbine. Provide a discussion that includes technical bases and describes how the proposed mode of operation for the Lee Gas Steam Station is considered equivalent to the current one. Equivalent means providing reliable high quality electrical power to the standby buses.
9. The proposed technical specifications delete the current Specification Section 3.7.4.c which requires that the remaining Keowee hydro unit shall be available to the overhead transmission circuit if one of the two Keowee hydro units is expected to be unavailable for longer than the test or maintenance period of 72 hours. Explain in detail how this requirement was determined to be unnecessarily restrictive as indicated by Item Number 54 in the Technical Justification (Attachment 4).

10. Provide a detailed technical discussion describing why it is considered unnecessary for a surveillance requirement for the revised Keowee Auxiliary Bus Transfer design scheme which transfers auxiliary buses 1X and 2X between normal and alternate power sources. In addition, the NRC AIT (Augmented Inspection Team) report dated November 27, 1992 indicates that the periodic testing performed for the undervoltage relays and transfer timers associated with Keowee breakers ACB-5, 6, 7, and 8 do not include verification of attendant time delays. This being the case, provide a discussion which includes technical bases that clearly explain why verifications of time delays associated with the revised Auxiliary Bus Transfer design scheme are not considered needed or necessary.
11. Isolation of the 230kV switchyard yellow bus is required in order to establish the emergency overhead power path from a Keowee hydro generating unit to the main feeder buses. Confirm that isolation of the yellow bus for the purpose of establishing the emergency overhead power path does not require operation of the 230kV switchyard differential relaying circuitry and/or attendant bus sensors.
12. The proposed Surveillance Requirement (SR) 3.7.1.5 revises the frequency for verifying the operability of the Keowee underground feeder breaker interlock and the underground to overhead breaker interlock from monthly to semi-annually. Provide a detailed technical discussion which describes the evaluation of previous test data and interlock design used to support this revision.
13. The proposed specifications remove the current surveillance requirement Section 4.6.5. This section requires that the External Grid Trouble Protection System (EGTPS) logic be tested quarterly. The indicated purpose for such testing is to demonstrate the ability of the EGTPS logic to provide an isolated power path from Keowee to Oconee for certain voltage and frequency conditions. Provide a detailed discussion which contains the criteria used and explains how it was determined that no explicit technical specifications surveillance requirement is necessary for the previously performed testing of the EGTPS logic but rather a Selected Licensee Commitment is to be provided to contain the testing requirement of the deleted Section 4.6.5. In addition, explain why the frequency portion but not the voltage portion of the EGTPS circuitry is to be maintained as safety-related.
14. The current Specification Section 3.7.2.e.2 allows one complete single string or single component of the Keowee 125VDC Power System to be inoperable for periods not exceeding 24 hours. Item C for the proposed Specification Section 3.7.1 indicates that if one emergency power path is inoperable due to reasons other than an inoperable startup transformer, then the completion time to restore the emergency power path to operable status is 72 hours. Note that whenever a 125VDC power system is inoperable, the associated Keowee unit and emergency power path would then be considered to be inoperable. Thus, the AOT for the 125VDC power system in the proposed specification is 72 hours. Provide a detailed technical discussion that explains and supports the less restrictive AOT.

15. The Switchyard Isolation Complete circuitry functions following an external grid trouble protective relay actuation. A Switchyard Isolation Complete signal is generated when the logic indicates that the 230 kV Switchyard Yellow Bus has been separated from the external grid and that the switchyard power control breakers (PCBs) are aligned to supply power to the Oconee startup transformers. This circuitry also provides an automatic close permissive to PCB-9. If the Keowee hydro station is generating to the grid at the time of a loss of offsite power (LOOP) event, this logic initiates tripping of the air control breakers (ACBs) aligned to the overhead path and allows reclosure of the output ACB of the Keowee unit aligned to the overhead path after a 6 second time delay. Criterion 3 of NRC Final Policy Statement on Technical Specifications Improvement for Nuclear Power Reactors indicates that "A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier" should be included in plant technical specifications. Since the Switchyard Isolation Completion logic is necessary to establish the overhead path to safety-related loads, provide a detailed technical discussion that includes technical bases and explains why the Switchyard Isolation Completion logic need not be explicitly addressed in the proposed specifications.
16. The following items which are contained in the current specification Section 3.7.1 have been relocated to the bases section of the proposed revised specifications.
- a) One Startup transformer may not be aligned to supply power to more than one unit (contained in the current Specification Section 3.7.1.b.2).
 - b) Both of the 125 VDC Keowee batteries (Bank 1 & 2) with associated chargers and distribution centers (1DA & 2DA) shall be operable (contained in the current Specification Section 3.7.1.h).
 - c) The level of Keowee Reservoir shall be at least 775 feet above sea level (contained in the current Specification Section 3.7.1.i).
 - d) The Keowee station auxiliary transformers (1X and 2X) and the Keowee station backup auxiliary transformer (CX) shall be operable (contained in the current Specification Section 3.7.1.j).

The above items appear to provide operability requirements. In general, the staff view regarding operability requirements is that such requirements can not be removed from technical specification sections and relocated to the bases section for the specifications. As such, provide a discussion which contains technical justification for removing these items from specification sections and relocating them to the bases section.

17. The current technical specifications contain surveillance requirement Section 4.6.1. This section contains information requiring monthly verification that each Keowee hydro unit can be synchronized through the 230 kV overhead circuit to the startup transformers and can energize the 13.8 kV underground feeder. The proposed revised specifications contain surveillance requirement Sections SR 3.7.1.2 and SR 3.7.1.3. These sections contain information requiring monthly verification that one pre-selected Keowee hydro unit can be synchronized with the yellow switchyard bus and the other pre-selected Keowee hydro unit can energize the underground emergency power path. As such, provide a discussion that includes technical bases for justifying why it is no longer considered needed or necessary to monthly verify that each Keowee hydro unit can energize the overhead or the underground emergency power path.
18. A review of design documents for the Oconee Nuclear Station clearly indicates that in order to establish electrical power to the 4.16 kV main feeder safety buses requires proper operation of various and numerous electrical control circuitry components (such as, relays, interconnecting wiring, potential transformers, control power supplies, etc.). This applies if the main feeder safety buses are powered by the 230 kV switchyard or the Keowee Hydro Station or the standby buses. This being the case, provide the results of a review of the surveillance procedures which are to be used to implement the proposed revised electrical technical specification requirements and which focuses on identifying electrical control devices/circuitry that is not periodically operated in a manner equal to or similar to that which it is expected to operate for emergency situations. For each such control device, element and/or circuitry identified, provide detailed technical justification for no periodic test requirement.
19. In general, electrical technical specifications surveillance requirements for operating nuclear power plants include mechanical surveillance requirements associated with emergency diesel generators. Such mechanical surveillance requirements are verification that each day tank contains a specific amount of fuel oil, check for and remove accumulated water in each day tank, and verification of proper operation of the fuel oil transfer system which transfers fuel oil from storage tanks to day tanks. The proposed revised electrical technical specifications do not include any mechanical surveillance requirements for the Keowee Hydro Station. Thus, provide a detailed discussion that explains why it is not considered necessary to include mechanical surveillance requirements (equivalent or similar to those provided above) for the Keowee Hydro Station.
20. The proposed revised electrical technical specifications do not contain an explicit requirement to restrict or preclude operation of the Oconee Station if both Keowee hydro units simultaneously provide electrical power to the 230 kV switchyard by way of the overhead emergency power path. For this electrical configuration, a single failure/occurrence could result in the loss of electrical power from the Keowee Station. As such, provide a detailed discussion that includes technical bases for not explicitly restricting or precluding station operation for this electrical configuration.

Proposed Technical Specifications Sections 3.7.7 and 3.7.8, "Emergency Power Switching Logic (EPSL) Degraded Grid Voltage Protection" and "Emergency Power Switching Logic (EPSL) CT-5 Degraded Grid Voltage Protection", Respectively

1. NRC Staff Technical Position Number 1 addresses degraded grid voltage conditions. This position contains the following items.

Item 1.d.

"The Technical Specification shall include limiting conditions for operations, surveillance requirements, trip setpoints with minimum and maximum limits, and allowable values for the second-level voltage protection sensors and associated time delay devices."

Item 2.

"The Class 1E bus load shedding scheme should automatically prevent shedding during sequencing of the emergency loads to the bus. The load shedding feature should, however, be reinstalled upon completion of the load sequencing action. The technical specifications must include a test requirement to demonstrate the operability of the automatic bypass and reinstatement features at least once per 18 months during shutdown.

In the event an adequate basis can be provided for retaining the load shed features during the above transient conditions, the setpoint value in the Technical Specifications for the first level of undervoltage protection (loss of offsite power) must specify a value having maximum and minimum limits. The basis for the setpoints and limits selected must be documented."

Provide a detailed discussion that explains how (or appropriately modify the proposed revised specifications) the proposed Specification Sections 3.7.7 and 3.7.8 conform to the recommendations contained in the above two items.

2. Provide a discussion which explains how the use of engineering judgement resulted in the determination of 7 day completion times associated with Condition A or B contained in the proposed Specification Section 3.7.7.

Proposed Technical Specifications Section 3.7.9, "Vital I&C DC Sources and Distribution - Operating"

1. IEEE Standard 450-1975 notes that a performance discharge test of a battery should be performed within the first 2 years of service. In addition, this standard notes that a performance discharge test should be performed on each battery at 5 year intervals until it shows signs of degradation. The proposed Specification Section 3.7.9 does not address battery performance discharge testing. This being the case, provide a detailed discussion that explains why it is unnecessary to perform battery performance discharge testing on the 125VDC Vital I&C batteries (Note: The bases section provided for the proposed battery surveillance requirements references IEEE Standard 450.).

2. IEEE Standard 450-1975 indicates that yearly inspections should include a check and record of cell-to-cell and terminal connection detail resistance. Provide technical bases to support the conclusion that the proposed Specification Section 3.7.9 need not address battery cell-to-cell resistant testing. In addition, describe in detail the procedure used to verify cell-to-cell terminal connection tightness.
3. Provide a detailed technical justification for not including in the proposed specifications the current monthly surveillance requirement for the 125VDC Vital I&C Panelboard diode monitors.
4. Provide a technical discussion that explains why the condition for two inoperable 125 VDC Vital power sources need not be explicitly addressed in the proposed technical specifications.

Proposed Technical Specifications Section 3.7.10, "230kV Switchyard DC Source Distribution"

In view of the safety-related power path from the Keowee units through the switchyard, several issues should be addressed:

1. Describe in detail how the current requirement provided in Specification Section 3.7.2.e.1 is equivalent to that provided in Item A of the proposed Specification Section 3.7.10.
2. Provide a detailed technical justification which explains why it is unnecessary to perform cell-to-cell resistance and battery performance discharge testing for the 230kV switchyard batteries.
3. Provide a technical discussion that explains in detail why it is not necessary for a switchyard battery charger surveillance requirement to detect excessive battery charger output voltage ripple and/or other abnormalities.

Proposed Technical Specifications Section 3.7.12, "Battery Cell Parameters"

1. Provide a discussion that contains the technical bases for the 90 day completion times permitted for required actions identified in Items D, E, F, and G for the proposed Specification Section 3.7.12.

Identified Inconsistencies Between the Provided Markup of Current Technical Specifications and the Proposed Technical Specifications

1. Several inconsistencies between the provided markup of the current technical specifications and the proposed specifications were identified. The mark up copy of the current technical specifications indicates several proposed technical specification surveillance requirement (SR) sections that should but do not contain the current technical specifications corresponding information. The proposed SR sections identified for which this applies are SR 3.7.1.2, SR 3.7.1.3, SR 3.7.1.4, SR 3.7.1.5, SR 3.7.1.6, SR 3.7.1.7, SR 3.7.1.8, SR 3.7.9.2, SR 3.7.9.3, SR 3.7.9.4, SR 3.7.9.5, and SR 3.7.9.6. Correct/resolve these inconsistencies.