



Duke Power
Oconee Nuclear Site
7800 Rochester Highway
Seneca, SC 29672
(864) 885-3107 OFFICE
(864) 885-3564 FAX

W. R. McCollum, Jr.
Vice President

July 27, 2000

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
License Amendment Request for Keowee Surveillance
Requirement 3.8.1.9
Technical Specification Change (TSC) Number 2000-04

Pursuant to Title 10, Code of Federal Regulations, Part 50, Section 90 (10 CFR 50.90), Duke Energy proposes to amend Appendix A, Technical Specifications, for Facility Operating Licenses DPR-38, DPR-47 and DPR-55 for Oconee Nuclear Station, Units 1, 2, and 3. Technical Specification (TS) 3.8.1 AC Sources - Operating, Surveillance Requirement (SR) 3.8.1.9 does not clearly delineate the requirements for ensuring the adequate response time of the Keowee Hydro Units (KHU). The proposed license amendment request (LAR) revises TS 3.8.1 SR 3.8.1.9 to specify the lower frequency and voltage operating limits to which the KHU are required to accelerate within 23 seconds. These limits are consistent with the lower bounds of SR 3.8.1.17. The NRC approved SR 3.8.1.17 in License Amendment number 312, 312, 312 dated June 6, 2000.

The NRC has previously reviewed KHU operation and documented their results in the Final Report - Oconee Nuclear Station Units 1, 2 & 3 Emergency Electrical Power System dated January 19, 1999.

The revised Technical Specification pages are included in Attachment 1. Attachment 2 contains the markup of the current Technical Specification pages. The Technical Justification for the amendment request is included in Attachment 3. Attachments 4 and 5 contain the No Significant Hazards Consideration Evaluation and the Environmental Impact Analysis, respectively.

This proposed change to the TS has been reviewed and approved by the Plant Operations Review Committee and Nuclear Safety Review Board.

A001

U.S. Nuclear Regulatory Commission
July 27, 2000
Page 2

Implementation of these changes will not result in an undue risk to the health and safety of the public.

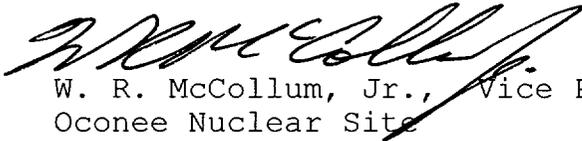
The Oconee Updated Final Safety Analysis Report has been reviewed and no changes are necessary to support this LAR.

Approval of this proposed LAR is requested by January 31, 2001. Duke Energy requests 45 days from issuance of the Safety Evaluation to implement the proposed LAR.

Pursuant to 10 CFR 50.91, a copy of this proposed amendment is being sent to the South Carolina Department of Health and Environmental Control for review, and as deemed necessary and appropriate, subsequent consultation with the NRC staff.

If there are any questions regarding this submittal, please contact Reese' Gambrell at (864)885-3364.

Very truly yours,



W. R. McCollum, Jr., Vice President
Oconee Nuclear Site

U.S. Nuclear Regulatory Commission

July 27, 2000

Page 3

cc: Mr. D. E. LaBarge, Project Manager
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop O-14 H25
Washington, D. C. 20555

Mr. L. A. Reyes, Regional Administrator
U. S. Nuclear Regulatory Commission - Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

Mr. M. C. Shannon
Senior Resident Inspector
Oconee Nuclear Station

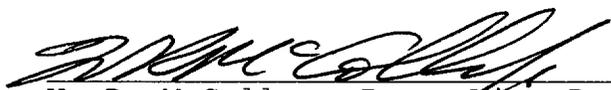
Mr. Virgil R. Autry, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health & Environmental Control
2600 Bull Street
Columbia, SC 29201

U.S. Nuclear Regulatory Commission

July 27, 2000

Page 4

W. R. McCollum, Jr., being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Energy Corporation, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Facility Operating License Nos. DPR-38, DPR-47, DPR-55; and that all the statements and matters set forth herein are true and correct to the best of his knowledge.



W. R. McCollum, Jr., Vice President
Oconee Nuclear Site

Subscribed and sworn to before me this 27 day of July,
2000



Notary Public

My Commission Expires:

My Commission Expires Aug. 19, 2009



ATTACHMENT 1

Remove Pages

3.8.1-15
B 3.8.1-22

Replace Pages

3.8.1-15
B 3.8.1-22

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	Verify both KHU's underground tie breakers cannot be closed simultaneously.	12 months
SR 3.8.1.8	Verify each KHU's overhead emergency power path tie breaker cannot be closed when tie breaker to underground emergency power path is closed.	12 months
SR 3.8.1.9	Verify on an actual or simulated emergency actuation signal each KHU auto starts and: <ul style="list-style-type: none"> a. Accelerates to frequency ≥ 53.992 Hz and voltage ≥ 12.42 kV in ≤ 23 seconds; and b. Supplies the equivalent of one Unit's maximum safeguard loads plus two Unit's hot shutdown loads when synchronized to system grid and loaded at maximum practical rate. 	12 months
SR 3.8.1.10	Verify each KHU's battery capacity is adequate to supply, and maintain in OPERABLE status, required emergency loads for design duty cycle when subjected to a battery service test.	12 months
SR 3.8.1.11	Verify each KHU's battery cells, cell end plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	12 months

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.8.1.9

This surveillance verifies the KHUs' response time to an Emergency Start signal (normally performed using a pushbutton in the control room) to ensure ES equipment will have adequate power for accident mitigation. UFSAR Section 6.3.3.3 (Ref. 9) establishes the 23 second time requirement for each KHU to accelerate to the lower operating frequency and voltage limits as defined in SR 3.8.1.17. Because the only available load of adequate magnitude for simulating an accident is the grid, subsequent loading on the grid is required to verify the KHU's ability to assume rapid loading under accident conditions. Sequential block loads are not available to fully test this feature. This is the reason for the requirement to load the KHUs at the maximum practical rate. The 12 month Frequency for this SR is adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

SR 3.8.1.10

A battery service test is a special test of the battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in Reference 4.

The Surveillance Frequency of 12 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 6) and Regulatory Guide 1.129 (Ref. 7), which state that the battery service test should be performed with intervals between tests not to exceed 18 months.

SR 3.8.1.11

Visual inspection of the battery cells, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The 12 month Frequency for this SR is consistent with manufacturers recommendations and IEEE-450 (Ref. 8), which recommends detailed visual inspection of cell condition and rack integrity on a yearly basis.

ATTACHMENT 2

MARKUP OF TECHNICAL SPECIFICATION

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	Verify both KHU's underground tie breakers cannot be closed simultaneously.	12 months
SR 3.8.1.8	Verify each KHU's overhead emergency power path tie breaker cannot be closed when tie breaker to underground emergency power path is closed.	12 months
SR 3.8.1.9	Verify on an actual or simulated emergency actuation signal each KHU auto starts and: <ul style="list-style-type: none"> a. <i>accelerates to</i> Achieves frequency ≥ 57 Hz and ≤ 63 Hz and voltage ≥ 13.5 kV and ≤ 14.49 kV in ≤ 23 seconds; and <i>13.42</i> b. Supplies the equivalent of one Unit's maximum safeguard loads plus two Unit's hot shutdown loads when synchronized to system grid and loaded at maximum practical rate. 	12 months
SR 3.8.1.10	Verify each KHU's battery capacity is adequate to supply, and maintain in OPERABLE status, required emergency loads for design duty cycle when subjected to a battery service test.	12 months
SR 3.8.1.11	Verify each KHU's battery cells, cell end plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	12 months

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.8.1.9

This surveillance verifies the KHUs' response time to an Emergency Start signal (normally performed using a pushbutton in the control room) to ensure ES equipment will have adequate power for accident mitigation. UFSAR Section 6.3.3.3 (Ref. 9) establishes the 23 second time requirement for each KHU to achieve rated frequency and voltage. *accelerate to the lower operating* Since Because the only available loads of adequate magnitude for simulating an accident is the grid, subsequent loading on the grid is required to verify the KHU's ability to assume rapid loading under accident conditions. Sequential block loads are not available to fully test this feature. This is the reason for the requirement to load the KHUs at the maximum practical rate. The 12 month Frequency for this SR is adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

limit as defined in SR 3.8.1.17.

SR 3.8.1.10

A battery service test is a special test of the battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in Reference 4.

The Surveillance Frequency of 12 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 6) and Regulatory Guide 1.129 (Ref. 7), which state that the battery service test should be performed with intervals between tests not to exceed 18 months.

SR 3.8.1.11

Visual inspection of the battery cells, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The 12 month Frequency for this SR is consistent with manufacturers recommendations and IEEE-450 (Ref. 8), which recommends detailed visual inspection of cell condition and rack integrity on a yearly basis.

ATTACHMENT 3

TECHNICAL JUSTIFICATION

ATTACHMENT 3

TECHNICAL JUSTIFICATION

ATTACHMENT 3

TECHNICAL JUSTIFICATION

Background

Technical Specification (TS) 3.8.1 AC Sources - Operating, Surveillance Requirement (SR) 3.8.1.9 does not clearly delineate the requirements for ensuring the adequate response time of the Keowee Hydro Units (KHU).

The purpose of this proposed change to TS 3.8.1 AC Sources - Operating, SR 3.8.1.9 is to clarify the requirements of the surveillance. No physical changes are being made to the KHU because of this technical specification revision. This change will better describe the KHU method of operation as an emergency power source for Oconee Nuclear Station (Oconee). The function and operation of the KHUs will remain the same as described in chapters 6 and 8 of the Updated Final Safety Analysis Report (UFSAR) and the NRC issued Final Report - Oconee Nuclear Station Units 1, 2 & 3 Emergency Electrical Power System dated January 19, 1999.

Description of the Technical Specification Change

The proposed wording of this change is consistent with Oconee's original TS SR 4.6.2.

According to the original TS bases, this surveillance was to verify that the Keowee Units could carry the maximum Oconee safeguard equipment load within 23 seconds. Paragraph a of SR 3.8.1.9 is being revised to reflect that the KHU accelerates to a frequency ≥ 53.992 Hz and voltage ≥ 12.42 kV in ≤ 23 seconds. The bases for SR 3.8.1.9 is revised to state that UFSAR chapter 6 establishes the 23 second time requirement for each KHU to accelerate to the lower operating frequency and voltage limit as defined in SR 3.8.1.17.

Technical Justification

During a loss of coolant accident (LOCA) concurrent with a loss of offsite power (LOOP), both KHUs receive an emergency start signal. Both KHU generators start and energize both emergency power paths. If the KHU connected to the underground emergency power path were initially shutdown, it would accelerate and

energize the Oconee accident loads, via the underground emergency power path, following the LOCA. The accident loads would remain energized by that KHU generator while it continued to accelerate. Revised paragraph "a" of TS 3.8.1, SR 3.8.1.9 will verify that the KHU generators will start and be available for loading as described in the UFSAR within 23 seconds.

The voltage and frequency limits of SR 3.8.1.17 define the steady state operating limits for the KHU generators. Steady state voltage is between ≥ 12.42 KV and ≤ 15.18 KV. Steady state frequency is defined as ≥ 53.992 Hz and ≤ 66.008 Hz. The minimal values of the voltage and frequency limits specified in SR 3.8.1.17 are restated in SR 3.8.1.9. Operating outside the limits as defined by SR 3.8.1.17, whether on initial overshoot or longer term, is not a part of SR 3.8.1.9. Steady state operation is controlled and verified by SR 3.8.1.17 with its associated logic and relay settings. Modification ON-53014, which added SR 3.8.1.17, will be implemented in November of 2000. This modification adds voltage and frequency protection to each KHU. If the detection circuitry senses an out of tolerance voltage and/or frequency condition after a time delay, the power path breakers open if they are closed and their closure is blocked if they are open. This modification and the voltage and frequency limits were approved in an NRC SER for Amendment 312, 312, 312 dated June 6, 2000.

The KHU operation described above is also documented in the NRC issued Final Report - Oconee Nuclear Station Units 1, 2 & 3 Emergency Electrical Power System dated January 19, 1999.

ATTACHMENT 4

NO SIGNIFICANT HAZARDS CONSIDERATION

Attachment 4
No Significant Hazards Consideration

Pursuant to 10 CFR 50.91, 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 NRC 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.

No. This is a proposed change to the Technical Specification (TS) 3.8.1 AC Sources - Operating, surveillance requirement (SR) 3.8.1.9 for Keowee emergency start. The proposed change revises TS SR 3.8.1.9 for the loading of Oconee loads onto the Keowee Hydro Unit (KHU) generator to that of the original TS SR. The proposed change does not alter the method of operating or configuration for any Structure, System or Component. The revision to SR 3.8.1.9 will not change the starting characteristics of the Keowee Units, for either the emergency or normal start, nor will it change the characteristics of the Emergency Power System.

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

No. The KHU generators provide emergency power for the Oconee Units during a Loss of Offsite Power event. The original design of the Emergency Power System was to load Oconee loads on the KHU generator while accelerating. The revised TS SR will not change that design. This revision to the TS surveillance will verify that the Emergency Power System operates in accordance with the description in the UFSAR and DBD.

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

No. This revision will continue to require verification that the KHU generators are able to reach acceptable voltage and frequency within 23 seconds. The voltage and frequency required are defined limits previously approved by the NRC.

ATTACHMENT 5
ENVIRONMENTAL IMPACT ANALYSIS

ATTACHMENT 5

Environmental Impact Analysis

Pursuant to 10 CFR 51.22(b), an evaluation of the license amendment request (LAR) has been performed to determine whether or not it meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c)9 of the regulations. The LAR does not involve:

1. A significant hazards consideration.

This conclusion is supported by the determination of no significant hazards contained in Attachment 4.

2. A significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

This LAR does not make physical changes to the plant. The plant will continue to operate as before. Therefore, this LAR will not change the types or amounts of any effluents that may be released offsite.

3. A significant increase in the individual or cumulative occupational radiation exposure.

This LAR does not make physical changes to the plant. The plant will continue to operate as before. Therefore, this LAR will not increase the individual or cumulative occupational radiation exposure.

In summary, this LAR meets the criteria set forth in 10 CFR 51.22 (c)9 of the regulations for categorical exclusion from an environmental impact statement.