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16.8 ELECTRIC POWER SYSTEMS

16.8.4 Keowee Operational Restrictions

COMMITMENT

When generating commercial power, the Keowee Hydro Station shall be within the acceptable region of the operating restrictions which are contained in Appendix 16.8.4.

APPLICABILITY: Above COLD SHUTDOWN

ACTIONS:

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Commercial power generation by Keowee outside of the acceptable regions in Appendix 16.8.4.	A.1 Enter Tech Spec 3.7.2 if only one Keowee unit is outside of the acceptable regions	Immediately
	OR Enter Tech Spec 3.7.7 if both Keowee units are outside of the acceptable regions	Immediately
	AND Initiate action to restore Keowee generation to within the acceptable regions in Appendix 16.8.4.	Immediately

SURVEILLANCES:

SURVEILLANCE	FREQUENCY
1. Ensure Keowee operation is within the acceptable region of the operating restrictions.	During commercial generation
2. Verify operability of the emergency functions of the Keowee Hydro units during periods of commercial generation.	Refueling
3. Verify that the Keowee Hydro units load rejection response is bounded by the design criteria used to develop the Keowee operating restrictions.	Refueling and prior to implementing any revision to the operating limits

BASES:

BACKGROUND

This SLC is used to determine Keowee Hydro unit operability as an Oconee Emergency Power source when Keowee is generating to the commercial grid. It specifies the range of acceptable Keowee lake and tailrace elevations for various Keowee power generation levels. The acceptable region of the operating restrictions was determined by reference 1. In addition, the SLC provides the surveillance requirements for the protection logic and load rejection responses.

Appendix 16.8.4 specifies the maximum operating limits of the Keowee Hydro units. Figure 1 is applicable only for single unit operation of Keowee unit 1. This refers to occasions when Keowee unit 1 is operating and Keowee unit 2 is not operating. This figure allows for operation of Keowee Hydro unit 1 at a maximum of 84MW. Also, any operation of Keowee Hydro unit 1 below 84MW is allowed in accordance with this figure.

In Appendix 16.8.4, Figure 2 is applicable only for single unit operation of Keowee unit 2. This refers to occasions when Keowee unit 2 is operating and Keowee unit 1 is not operating. This figure allows for operation of Keowee Hydro unit 2 at a maximum of 84 MW. Also, any operation of Keowee Hydro unit 2 below 84 MW is allowed in accordance with this figure.

Figures 3 and 4 of Appendix 16.8.4 apply to simultaneous commercial generation with both Keowee units. In addition, the figures apply to single unit operation of Keowee unit 1 or 2. In Figure 3 in Appendix 16.8.4, commercial generation is allowed up to a maximum of 74MW. Figure 4 contains the operating restrictions for commercial generation up to a maximum of 64MW.

The lake levels on the operating charts are operating lake levels. Therefore, verification that the operation of the Keowee Hydro units is within the acceptable region of the charts will have to be performed during operation of the Keowee Hydro units.

#### APPLICABLE SAFETY ANALYSIS

The Keowee Hydro units provide emergency power for Oconee Nuclear Station on the appropriate emergency power path. The operability of the Keowee Hydro units is required to ensure the operability and the capability of the Emergency Power System. NSM ON-52966 installed frequency protection and revised the runaway governor protection logic circuits which ensure the operability of the Keowee Hydro units during periods of commercial generation. This SLC will verify operability of the circuitry and ensure that the Keowee Hydro units are operated within the acceptable limits.

#### APPLICABILITY

During periods of commercial power generation, the Keowee Hydro units are required to be within the acceptable regions of the operating restrictions when one or more Oconee Nuclear units are above cold shutdown.

#### ACTIONS

The operability of the Keowee Hydro units during periods of commercial generation is ensured when the Keowee Hydro units operate within the acceptable region of Appendix 16.8.4.

A.1 If the Keowee Hydro units are determined to be outside the acceptable region of the operating restrictions in Appendix 16.8.4, action will be taken to restore commercial generation of the Keowee Hydro units to within the acceptable region. In addition, the appropriate Technical Specification LCO shall be entered since the Keowee Hydro Station may not be able to perform its design function. Once the commercial operation of the Keowee Hydro units is restored to within the acceptable region, the Technical Specification LCO shall be exited. It is not necessary to perform an operability test of the-

Keowee Hydro units prior to exiting the LCO as long as no maintenance is performed on the units in order to return them to an acceptable operating region.

#### SURVEILLANCE REQUIREMENTS

1. This surveillance will ensure that the operating conditions are within the acceptable region of the operating restrictions in Appendix 16.8.4 during commercial generation by the Keowee Hydro units. Since the lake levels in Appendix 16.8.4 are operating lake levels, verification that the operation of the Keowee Hydro units is within the acceptable regions will be performed during operation of the Keowee Hydro units.
2. This surveillance will ensure that the adverse effects of overspeed following a load rejection will be precluded and the appropriate emergency power paths will be aligned. In addition, the speed sensing governor failure logic will be verified during this surveillance. Failure to meet the acceptance criteria will be evaluated in the corrective action program to determine the impact on the operability of the emergency power paths. The Keowee Watt/Var meter, frequency relays, and governor magnetic speed switch will be calibrated prior to the performance of this surveillance.
3. This surveillance will verify that the Keowee Hydro units response to a load rejection is bounded by the design criteria used to develop the Keowee operating restrictions. A maximum dual unit load rejection as defined by the operating conditions for the day of the test will be included in this surveillance. In addition, a revision of the operating restrictions will require that a maximum dual unit load rejection test be performed prior to implementing the revision. The Keowee Watt/Var meter, frequency relays, and governor magnetic speed switch will be calibrated prior to the performance of this surveillance.

#### REFERENCES:

1. Calculation KC-UNIT1-2-0106
2. 04/19/95 letter from J. W. Hampton to the NRC, "Response to NRC Questions on the Proposed Emergency Power Modification Action Plan."
3. 03/15/95 letter from J. W. Hampton to the NRC, "Proposed Emergency Power Modification Action Plan."

4. '08/15/95 letter from the NRC to J. W. Hampton, "Issuance of Amendments"

STATION MANAGER APPROVAL: B. L. Peele Date: 9-30-96

B. L. Peele