

July 12, 2004

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

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
Supplement 7 to the License Amendment Request
(LAR) for Temporary Extension to the Completion
Times for One and Two Keowee Hydro Units
Inoperable
Technical Specification Change (TSC) Number
2002-05

In a submittal dated August 22, 2002, and supplemented by letters dated September 12, 2003, and February 4, February 16, March 23, April 28, and June 17, 2004, Duke proposed 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. The amendment would temporarily extend Technical Specification (TS) 3.8.1 Required Action Completion Times when in the Conditions for one or two Keowee Hydro Units (KHU) inoperable to allow significant maintenance and upgrades to be performed.

Since the June 17, 2004, Supplement, Duke identified a necessary revision to make the proposed TS change apply as intended. The revised proposed TS change is described in Attachment 1.

During a June 22, 2004, conference call between Duke and NRC, Duke agreed to notify the NRC via the Emergency Notification System (ENS) should grid or weather related criteria be met that requires Duke to evaluate the need to exit the dual KHU outage.

During a June 25, 2004, telephone call between Duke and NRC, Duke agreed to provide an additional contingency

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measure to address the unlikely scenario where all offsite power (Switchyard, Jocassee, and Lee Combustion Turbines) and the Standby Shutdown Facility (SSF) becomes unavailable during the dual KHU outages. Duke will provide backup power capability for the Turbine Driven Emergency Feedwater Pump (TDEFWP) controls and valves to allow the pumps to continue feeding the Steam Generators on each Oconee Unit beyond the station battery life until a KHU can be restored. Portable generators will be staged for the TDEFWPs along with the necessary equipment/cables and appropriate guidance for connection should the unlikely scenario described above occur.

Attachment 2 and 3 provide revised TS retyped pages and markup pages that reflect the changes proposed in Attachment 1. For completeness Attachment 2 and 3 also include all the changes associated with the LAR. Attachment 4 provides a revised list of NRC commitments.

The additional proposed changes do not affect the conclusions of the No Significant Hazards Consideration included in the August 22, 2002 LAR.

Pursuant to 10 CFR 50.91, a copy of this proposed license amendment is being sent to the State of South Carolina.

If there are any questions regarding this submittal, please contact Boyd Shingleton at (864) 885-4716.

Very truly yours,



Henry B. Barron
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Oath and Affirmation

I affirm that I, Henry B. Barron, am the person who subscribed my name to the foregoing, and that all the matters and facts set forth herein are true and correct to the best of my knowledge.

Henry B Barron

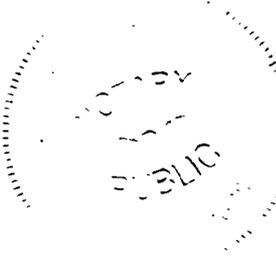
Henry B. Barron

Subscribed and sworn to before me this 12th day of July, 2004.

Betty Sharpe Gregory
Notary Public

My Commission Expires:

March 9, 2009
Date



Attachment 1

Revision to Proposed Change to the Technical Specifications

In a submittal dated August 22, 2002, and supplemented by letters dated September 12, 2003, and February 4, February 16, March 23, April 28, and June 17, 2004, Duke proposed extending the Completion Time (CT) for restoring one Keowee Hydro Unit (KHU) to operable status when two are inoperable. Duke also proposed extending the 45 day CT of Required Action (RA) C.2.2.5 for restoring a KHU associated with the overhead emergency power path by 17 days and the 72 hour CTs of RA D.3 for restoring a KHU associated with the underground emergency power path.

Since submittal of the last supplement, Duke identified a non technical problem that would preclude using the 45 day CT of Technical Specification (TS) 3.8.1 RA C.2.2.5 when in Condition H greater than 72 hours. It would also preclude entering Condition H again when the Oconee Units have been in Condition C for > 72 hours (45 day CT of TS 3.8.1 RA C.2.2.5 in effect). Currently, TS 3.8.1, RA C.2.2.3 requires verifying administratively that the remaining KHU and its required underground power path are OPERABLE within 72 hours as a condition for using the 45 day CT of RA C.2.2.5. RA C.2.2.4 requires verification of alternate power source capability by performing Surveillance Requirement (SR) 3.8.1.16 within 72 hours as another condition for using the 45 day CT. SR 3.8.1.16 is an administrative verification that the KHU associated with the underground emergency power path can be automatically or manually aligned to the overhead emergency power path. RA C.2.2.3 also requires verifying that Limiting Condition for Operation (LCO) 3.3.21 is met prior to exceeding the 72 hour CT. LCO 3.3.21 requires the Keowee Emergency Start Function be OPERABLE. While this requirement can be met, there is no reason for the requirement when also in Condition H since neither KHU would be available to automatically start. Since these aspects of RA C.2.2.3 and RA C.2.2.4 can not be performed or met after exceeding 72 hours while in Condition H, Condition L would apply. Condition L requires compliance with RA C.2.2.3 and C.2.2.4 be restored within 4 hours or entry into Condition M (shutdown requirement).

This LAR supplement proposes to add a Note indicating that RA C.2.2.3 is not applicable to the remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform Keowee Refurbishment Upgrades. The KHU associated with the underground emergency power path is not OPERABLE while in Condition H; therefore, administrative verification of OPERABILITY is not possible. OPERABILITY of that KHU will be demonstrated prior to returning to service. When in Condition H there is no need to verify LCO 3.3.21 is met since the function serves no purpose when both KHUs are inoperable. The proposed change also adds a Note to RA

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C.2.2.4 indicating that it is not applicable when in Condition H to perform Keowee Refurbishment Upgrades since the KHU associated with the underground emergency power path is not OPERABLE while in Condition H. The alternate power source capability will be verified after returning a KHU to service. These proposed changes allow the 45 day CT of RA C.2.2.5 to be used while in Condition H to perform Keowee Refurbishment Upgrades and makes the proposed change apply as intended. The justification provided in the initial submittal and subsequent supplements are applicable to this proposed change. As such, no further justification is provided.

Attachments 2 and 3 provide the revised TS pages and markup pages that reflect the change described above.

Attachment 2
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ATTACHMENT 2
TECHNICAL SPECIFICATION

Remove Page

3.8.1-4 - 8

B 3.8.1-1 - 25

Insert Page

3.8.1-4 - 8

B 3.8.1-1 - 26

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2.2.3 -----NOTE----- Not applicable to remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform Keowee Refurbishment Upgrades. -----</p> <p>Verify by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and LCO 3.3.21, "EPSL Keowee Emergency Start Function" are met.</p> <p><u>AND</u></p>	<p>72 hours</p> <p>(continued)</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2.2.4 -----NOTE----- Not applicable when in Condition H to perform Keowee Refurbishment Upgrades. -----</p> <p>Verify alternate power source capability by performing SR 3.8.1.16.</p> <p><u>AND</u></p>	<p>72 hours</p> <p><u>AND</u></p> <p>Every 31 days thereafter</p>
	<p>C.2.2.5 Restore KHU and its required overhead emergency power path to OPERABLE status.</p>	<p>28 days when Condition due to an inoperable Keowee main step-up transformer</p> <p><u>AND</u></p> <p>-----NOTE----- An additional 17 days is allowed when Condition entered to perform KHU Refurbishment Upgrades prior to April 30, 2005 except during March, April, May or June -----</p> <p>45 days from discovery of initial inoperability when Condition due to an inoperable KHU if not used for that KHU in the previous 3 years</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. KHU or its required underground power path inoperable.</p>	<p>D.1 Perform SR 3.8.1.4 for OPERABLE KHU.</p>	<p>1 hour if not performed in previous 12 hours</p>
	<p><u>AND</u></p> <p>D.2 Energize either standby bus from LCT via isolated power path.</p>	<p>24 hours</p> <p><u>AND</u></p> <p>1 hour from subsequent discovery of deenergized required standby bus</p>
	<p><u>AND</u></p> <p>D.3 Restore KHU and its required underground emergency power path to OPERABLE status.</p>	<p>-----NOTE----- The extended Completion Time of Required Action H.2 is applicable in lieu of these Completion Times when in Condition H to isolate, test and unisolate the KHUs during each of the two KHU Refurbishment Outages. -----</p> <p>72 hours</p> <p><u>AND</u></p> <p>72 hours from discovery of inoperable KHU</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. Required Action and associated Completion Time not met for Required Action D.2.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 5.</p>	<p>12 hours for one unit</p> <p><u>AND</u></p> <p>24 hours for other unit(s)</p> <p>84 hours</p>
<p>F. Zone overlap protection circuitry inoperable when overhead electrical disconnects for KHU associated with the underground power path are closed.</p>	<p>F.1 Restore zone overlap protection circuitry to OPERABLE status.</p> <p><u>OR</u></p> <p>F.2 Open overhead electrical disconnects for KHU associated with the underground power path.</p>	<p>72 hours</p> <p>72 hours</p>
<p>G. Both emergency power paths inoperable due to one inoperable E breaker and one inoperable S breaker on the same main feeder bus.</p>	<p>G.1 Restore one breaker to OPERABLE status.</p>	<p>24 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>H. -----NOTE----- Condition may be entered only when both required offsite sources are verified by administrative means to be OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating;" LCO 3.8.6, "Vital Inverters-Operating;" LCO 3.8.8, "Distribution Systems-Operating;" LCO 3.3.17, "EPSL Automatic Transfer Function;" LCO 3.3.18, "EPSL Voltage Sensing Circuits;" LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," are verified by administrative means to be met.</p> <p>-----</p> <p>Both KHUs or their required emergency power paths inoperable for planned maintenance or test with both standby buses energized from LCT via isolated power path.</p>	<p>H.1 Energize both standby buses from LCT via isolated power path.</p> <p><u>AND</u></p> <p>H.2 Restore one KHU and its required emergency power path to OPERABLE status.</p>	<p>1 hour from discovery of deenergized standby bus</p> <p>-----NOTE----- An additional cumulative 120 hours is allowed when Condition entered to isolate, test and un-isolate the KHUs during each of the two KHU Refurbishment Outages prior to April 30, 2005 provided the following conditions are met: 1) period of use not in March, April, May or June; 2) the SSF, EFW System and LCTs are verified OPERABLE prior to entering Condition, 3) RCS inventory is not reduced, 4) the SSF is manned, 5) a Jocassee Hydro Unit is verified available to provide power prior to entering Condition, 6) a 2 hour SSF DG operability test is performed prior to the start of the first dual unit outage, and 7) the Completion Time is only extended twice during each KHU Refurbishment Outage.</p> <p>-----</p> <p>60 hours</p>

(continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources – Operating

BASES

BACKGROUND

The AC Power System consists of the offsite power sources (preferred power) and the onsite standby power sources, Keowee Hydro Units (KHU). This system is designed to supply the required Engineered Safeguards (ES) loads of one unit and safe shutdown loads of the other two units and is so arranged that no single failure can disable enough loads to jeopardize plant safety. The design of the AC Power System provides independence and redundancy to ensure an available source of power to the ES systems (Ref. 1). The KHU turbine generators are 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 licensee (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.

The preferred power source is provided from offsite power to the red or yellow bus in the 230 kV switchyard to the units startup transformer and the E breakers. The 230 kV switchyard is electrically connected to the 525 kV switchyard via the autobank transformer. Emergency power is provided using two emergency power paths, an overhead path and an underground path. The underground emergency power path is from one KHU through the underground feeder circuit, transformer CT-4, the CT-4 incoming breakers (SK breakers), standby bus and the standby breakers (S breakers). The standby buses may also receive offsite power from the 100 kV transmission system through transformer CT-5 and the CT-5 incoming breakers (SL breakers). The overhead emergency power path is from the other KHU through the startup transformer and the startup incoming breakers (E breakers). In addition to supplying emergency power for Oconee, the KHUs provide peaking power to the generation system. During periods of commercial power generation, the KHUs are operated within the acceptable region of the KHU operating restrictions. This ensures that the KHUs are able to perform their emergency power functions from an initial condition of commercial power generation. The KHU operating restrictions for commercial power generation are contained in UFSAR Chapter 16, (Ref. 2). The standby buses can also

BASES

BACKGROUND
(continued)

receive power from a combustion turbine generator at the Lee Steam Station through a dedicated 100 kV transmission line, transformer CT-5, and both SL breakers. The 100 kV transmission line can be supplied from a Lee combustion turbine (LCT) and electrically separated from the system grid and offsite loads. The minimum capacity available from any of the multiple sources of AC power is 22.4MVA (limited by CT-4 and CT-5 transformer capacities).

APPLICABLE
SAFETY ANALYSIS

The initial conditions of design basis transient and accident analyses in the UFSAR Chapter 6 (Ref. 4) and Chapter 15 (Ref. 5) assume ES systems are OPERABLE. The AC power system is designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ES systems so that the fuel, reactor coolant system, and containment design limits are not exceeded.

Consistent with the accident analysis assumptions of a loss of offsite power (LOOP) and a single failure of one onsite emergency power path, two onsite emergency power sources are required to be OPERABLE.

AC Sources – Operating are part of the primary success path and function to mitigate an accident or transient that presents a challenge to the integrity of a fission product barrier. As such, AC Sources – Operating satisfies the requirements of Criterion 3 of 10 CFR 50.36 (Ref. 3).

LCO

Two sources on separate towers connected to the 230 kV switchyard to a unit startup transformer and one main feeder bus are required to be OPERABLE. Two KHUs with one capable of automatically providing power through the underground emergency power path to both main feeder buses and the other capable of automatically providing power through the overhead emergency power path to both main feeder buses are required to be OPERABLE. The Keowee Reservoir level is required to be ≥ 775 feet above sea level to support OPERABILITY of the KHUs. The zone overlap protection circuitry is required to be OPERABLE when the overhead electrical disconnects for the KHU associated with the underground power path are closed to provide single failure protection for the KHUs. The zone overlap protection circuitry includes the step-up transformer lockout, the underground KHU lockout, the Keowee emergency start signal, and the underground breaker for the overhead KHU to ensure the zone overlap protection circuitry logic is OPERABLE.

BASES

LCO
(continued)

Operable offsite sources are required to be "physically independent" (separate towers) prior to entering the 230 kV switchyard. Once the 230 kV lines enter the switchyard, an electrical pathway must exist through OPERABLE power circuit breakers (PCBs) and disconnects such that both sources are available to energize the Unit's startup transformer either automatically or with operator action. Once within the boundary of the switchyard, the electrical pathway may be the same for both independent offsite sources. In addition, at least one E breaker must be available to automatically supply power to a main feeder bus from the energized startup transformer. The voltage provided to the startup transformer by the two independent offsite sources must be sufficient to ensure ES equipment will operate. Two of the following offsite sources are required:

- 1) Jocassee (from Jocassee) Black or White,
- 2) Dacus (from North Greenville) Black or White,
- 3) Oconee (from Central) Black or White,
- 4) Calhoun (from Central) Black or White,
- 5) Autobank transformer fed from either the Asbury (from Newport), Norcross (from Georgia Power), or Katoma (from Jocassee) 525 kV line.

An OPERABLE KHU and its required emergency power path are required to be able to provide sufficient power within specified limits of voltage and frequency within 23 seconds after an emergency start initiate signal and includes its required emergency power path, required instrumentation, controls, auxiliary and DC power, cooling and seal water, lubrication and other auxiliary equipment necessary to perform its safety function. Two emergency power paths are available. One emergency power path consists of an underground circuit while the other emergency power pathway uses an overhead circuit through the 230 kV switchyard.

BASES

LCO
(continued)

An OPERABLE KHU and its required overhead emergency power path must be capable of automatically supplying power from the KHU through the KHU main step-up transformer, the 230 kV yellow bus, the Unit startup transformer and both E breakers to both main feeder buses. At least one channel of switchyard isolation (by actuation from degraded grid voltage protection) is required to be OPERABLE to isolate the 230 kV switchyard yellow bus. If closed, each N breaker must be capable of opening using either of its associated breaker trip circuits. Either of the following combinations provides an acceptable KHU and required overhead emergency power path:

<u>Keowee Hydro Unit</u>		<u>Keowee Hydro Unit</u>	
1A)	Keowee Unit 1 generator,	1B)	Keowee Unit 2 generator,
2A)	Keowee ACB 1 (enabled by one channel of Switchyard Isolate Complete),	2B)	Keowee ACB 2 (enabled by one channel of Switchyard Isolate Complete),
3A)	Keowee auxiliary transformer 1X, Keowee ACB 5, Keowee Load Center 1X,	3B)	Keowee auxiliary transformer 2X, Keowee ACB 6, Keowee Load Center 2X,
4A)	Keowee MCC 1XA,	4B)	Keowee MCC 2XA,
5A)	Keowee Battery #1, Charger #1 or Standby Charger, and Distribution Center 1DA,	5B)	Keowee Battery #2, Charger #2 or Standby Charger, and Distribution Center 2DA,
6A)	ACB-1 to ACB-3 interlock,	6B)	ACB-2 to ACB-4 interlock,
7)	Keowee reservoir level \geq 775 feet above sea level,		

Overhead Emergency Power Path

- 8) Keowee main step-up transformer,
- 9) PCB 9 (enabled by one channel of Switchyard Isolate Complete),
- 10) The 230kV switchyard yellow bus capable of being isolated by one channel of Switchyard Isolate,
- 11) A unit startup transformer and associated yellow bus PCB (CT-1 / PCB 18, CT-2 / PCB 27, CT-3 / PCB 30),
- 12) Both E breakers.

BASES

LCO
(continued)

An OPERABLE KHU and its required underground emergency power path must be capable of automatically supplying power from the KHU through the underground feeder, transformer CT-4, both standby buses, and both Unit S breakers to both main feeder buses. If closed, each N breaker and each SL breaker must be capable of opening using either of its associated breaker trip circuits. Either of the following combinations provides an acceptable KHU and required underground emergency power path:

- | <u>Keowee Hydro Unit</u> | <u>Keowee Hydro Unit</u> |
|--|--|
| 1A) Keowee Unit 1 generator, | 1B) Keowee Unit 2 generator, |
| 2A) Keowee ACB 3, | 2B) Keowee ACB 4, |
| 3A.1) Keowee auxiliary transformer CX, Keowee ACB 7, Keowee Load Center 1X, | 3B.1) Keowee auxiliary transformer CX, Keowee ACB 8, Keowee Load Center 2X, |
| 3A.2) One Oconee Unit 1 S breaker capable of feeding switchgear 1TC, | 3B.2) One Oconee Unit 1 S breaker capable of feeding switchgear 1TC, |
| 3A.3) Switchgear 1TC capable of feeding Keowee auxiliary transformer CX, | 3B.3) Switchgear 1TC capable of feeding Keowee auxiliary transformer CX, |
| 4A) Keowee MCC 1XA, | 4B) Keowee MCC 2XA, |
| 5A) Keowee Battery #1, Charger #1 or Standby Charger, and Distribution Center 1DA, | 5B) Keowee Battery #2, Charger #2 or Standby Charger, and Distribution Center 2DA, |
| 6A) ACB-1 to ACB-3 interlock, | 6A) ACB-2 to ACB-4 interlock, |
| 7) Keowee reservoir level \geq 775 feet above sea level, | |

Underground Emergency Power Path

- 8) The underground feeder,
- 9) Transformer CT-4,
- 10) Both SK breakers,
- 11) Both standby buses,
- 12) Both S breakers, and
- 13) ACB-3 to ACB-4 interlock.

BASES

LCO
(continued)

This LCO is modified by three Notes. Note 1 indicates that a unit startup transformer may be shared with a unit in MODES 5 and 6. Note 2 indicates that the requirements of Specification 5.5.18, "KHU Commercial Power Generation Testing Program," shall be met for commercial KHU power generation. Note 3 indicates that the requirements of Specification 5.5.19, "Lee Combustion Turbine Testing Program," shall be met when a Lee Combustion Turbine (LCT) is used to comply with Required Actions.

APPLICABILITY

The AC power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

- a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of accidents and transients, and
- b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated accident.

AC source requirements during MODE 5 and 6 are covered in LCO 3.8.2, AC Sources-Shutdown.

ACTIONS

The ACTIONS are modified by a Note. The Note excludes the MODE change restriction of LCO 3.0.4 when both standby buses are energized from an LCT via an isolated power path to comply with Required Actions. This exception allow entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a unit shutdown. This exception is acceptable due to the additional capabilities afforded when both standby buses are energized from an LCT via an isolated power path.

A.1, A.2, A.3.1, and A.3.2

In the event a startup transformer becomes inoperable, it effectively causes the emergency overhead power path and both of the offsite sources to be inoperable. A KHU and its required underground power path remain available to ensure safe shutdown of the unit in the event of a transient or accident without a single failure.

BASES

ACTIONSA.1, A.2, A.3.1, and A.3.2 (continued)

Operation may continue provided the KHU and its required underground emergency power path are tested using SR 3.8.1.3 within one hour if not performed in the previous 12 hours. This Required Action provides assurance that no undetected failures have occurred in the KHU and its required underground emergency power path. Since Required Action A.1 only specifies "perform," a failure of SR 3.8.1.3 acceptance criteria does not result in a Required Action not met. However, if the KHU and its required underground emergency path fails SR 3.8.1.3, both emergency power paths and both required offsite circuits are inoperable, and Condition I for both KHUs and their required emergency power paths inoperable for reasons other than Condition G and H is entered concurrent with Condition A.

If available, another Unit's startup transformer should be aligned to supply power to the affected Unit's auxiliaries so that offsite power sources and the KHU and its required overhead emergency power path will also be available if needed. Although this alignment restores the availability of the offsite sources and the KHU and its required overhead emergency power path, the shared startup transformer's capacity and voltage adequacy could be challenged under certain DBA conditions. The shared alignment is acceptable because the preferred mode of Unit shutdown is with reactor coolant pumps providing forced circulation and due to the low likelihood of an event challenging the capacity of the shared transformer during a 72 hour period to bring a Unit to MODE 5. Required Action A.3.1 requires that the unit startup transformer be restored to OPERABLE status and normal startup bus alignment in 36 hours or Required Action 3.2 requires designating one unit sharing the startup transformer, to be shutdown. For example, if Unit 1 and 2 are operating and CT-2 becomes inoperable, Unit 2 may align CT-1 to be available to the Unit 2 main feeder buses and continue operating for up to 36 hours. At that time, if CT-2 has not been restored to OPERABLE status, one Unit must be "designated" to be shutdown. The designated Unit must be shut down per ACTION B. Note that with one Unit in MODES 1, 2, 3 or 4 and another Unit in a condition other than MODES 1, 2, 3, or 4, the units may share a startup transformer indefinitely provided that the loads on the unit not in MODES 1, 2, 3 or 4 are maintained within acceptable limits. For example, if Unit 1 is in MODE 5 and CT-2 becomes inoperable, Unit 2 may align CT-1 to the Unit 2 main feeder buses and continue operation indefinitely.

BASES

ACTIONS
(continued)

B.1 and B.2

When a unit is designated to be shutdown due to sharing a unit startup transformer per Required Action A.3.2, the unit must be brought to a MODE in which the LCO does not apply, since the shared unit startup transformer's capacity could be challenged under certain DBA conditions. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5

With the KHU or its required overhead emergency power path inoperable due to reasons other than an inoperable startup transformer (Condition A), sufficient AC power sources remain available to ensure safe shutdown of the unit in the event of a transient or accident. Operation may continue if the OPERABILITY of the remaining KHU and its required underground emergency power path is determined by performing SR 3.8.1.3 within 1 hour if not performed in the previous 12 hours and once every 7 days thereafter. This demonstration assures the remaining emergency power path is not inoperable due to a common cause or other failure. Testing on a 7 day Frequency is acceptable since both standby buses must be energized from an LCT via an isolated power path when in Condition C for > 72 hours. When the standby buses are energized by an LCT via an isolated power path, the likelihood that the OPERABLE KHU and its required underground emergency power path will be required is decreased. Since Required Action C.1 only specifies "perform," a failure of SR 3.8.1.3 acceptance criteria does not result in a Required Action not met. SR 3.8.1.3 is only required to be performed when the KHU associated with the underground emergency power path is OPERABLE.

If the KHU and its required underground emergency path fails SR 3.8.1.3, both KHUs and their required emergency power paths are inoperable, and Condition I (Both KHUs or their required emergency power paths inoperable for reasons other than Condition G or H) is entered concurrent with Condition C.

BASES

ACTIONS

C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

If the inoperable KHU or its required overhead emergency power path are not restored to OPERABLE status within 72 hours as required by Required Action C.2.1, a controlled shutdown must be initiated as required by the Required Actions for Condition M unless the extended Completion Times of Required Action C.2.2.5 are applicable. The second Completion Time for Required Action C.2.1 establishes a limit on the maximum time allowed for a KHU to be inoperable during any single contiguous occurrence of having a KHU inoperable. If Condition C is entered as a result of switching an inoperable KHU from the underground to the overhead emergency power path, it may have been inoperable for up to 72 hours. This could lead to a total of 144 hours since the initial failure of the KHU. The second Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time the KHU become inoperable, instead of at the time Condition C was entered.

The extended Completion Times of Required Action C.2.2.5 apply when the KHU or its required overhead emergency power path is inoperable due to an inoperable Keowee main step-up transformer or an inoperable KHU (if not used for that KHU in the previous 3 years). In order to use the extended Completion Times, within 72 hours of entering Condition C both standby buses must be energized from an LCT (Required Action C.2.2.1), KHU generation to the grid except for testing must be suspended (Required Action C.2.2.2), the remaining KHU and its required underground emergency power path and both required offsite sources must be verified OPERABLE, the LCOs indicated in Required Action C.2.2.3 must be verified to be met, and alternate power source capability must be verified by performing SR 3.8.1.16.

Required Action C.2.2.5 permits maintenance and repair of a Keowee main step-up transformer which requires longer than 72 hours. Transformer replacement is rare but is time extensive. A 28 day Completion Time is permitted by Required Action C.2.2.5 to restore the KHU and its overhead power path to OPERABLE status when inoperable due to an inoperable Keowee main step-up transformer. This allows a reasonable period of time for transformer replacement.

Required Action C.2.2.5 also permits maintenance and repair of a KHU which requires longer than 72 hours. The primary long term maintenance items are expected to be hydro turbine runner and discharge ring welding

BASES

ACTIONS

C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

repairs which are estimated to be necessary every six to eight years. Also, generator thrust and guide bearing replacements are necessary. Other items which manifest as failures are expected to be rare and may be performed during the permitted maintenance periods. As such, the 45 day restoration time of Required Action C.2.2.5 is allowed only once in a three year period for each KHU. This Completion Time is 45 days from discovery of initial inoperability of the KHU. This effectively limits the time the KHU can be inoperable to 45 days from discovery of initial inoperability rather than 45 days from entry into Condition C and precludes any additional time that may be gained as a result of switching an inoperable KHU from the underground to the overhead emergency power path. The 45 day Completion Time is modified by a note indicating that an additional 17 days is allowed when Condition C is entered to perform KHU Refurbishment Upgrades prior to April 30, 2005, except during March, April, May, or June. These upgrades include, but are not limited to, hydro turbine runner and discharge ring weld repair, governor, exciter and battery replacement, and an out-of-tolerance logic circuit modification. The additional 17 days is allowed to be used once for each KHU for upgrade work performed prior to April 30, 2005.

Required Actions C.2.2.1, C.2.2.2, C.2.2.3, and C.2.2.4 must be met in order to allow the longer restoration times of Required Action C.2.2.5. Required Action C.2.2.1 requires that both standby buses be energized using an LCT through the 100 kV transmission circuit. With this arrangement (100 kV transmission circuit electrically separated from the system grid and all offsite loads), a high degree of reliability for the emergency power system is provided. In this configuration, the LCT is serving as a second emergency power source, however, since the 100 kV transmission circuit is vulnerable to severe weather a time limit is imposed. The second Completion Time of Required Action C.2.2.1 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost. Required Action C.2.2.2 requires suspension of KHU generation to the grid except for testing. The restriction reduces the number of possible failures which could cause loss of the underground emergency power path. Required Action C.2.2.3 requires verifying by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE. This provides additional assurance that offsite power will be available. In addition, this assures that the KHU and its required underground emergency power path are available.

Required Action C.2.2.3 also requires verifying by administrative means that the requirements of the following LCOs are met:

BASES

ACTIONS C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

LCO 3.8.3, "DC Sources – Operating;"

LCO 3.8.6, "Vital Inverters – Operating;"

LCO 3.8.8, "Distribution Systems – Operating;"

LCO 3.3.17, "EPSL Automatic Transfer Function;"

LCO 3.3.18, "EPSL Voltage Sensing Circuits;"

LCO 3.3.19, "EPSL 230 kV Switchyard DGVP;" and

LCO 3.3.21, "EPSL Keowee Emergency Start Function."

This increases the probability, even in the unlikely event of an additional failure, that the DC power system and the 120 VAC Vital Instrumentation power panelboards will function as required to support EPSL, power will not be lost to ES equipment, and EPSL will function as required.

Required Action C.2.2.3 is modified by a Note indicating that it is not applicable to the remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform Keowee Refurbishment Upgrades. Administrative verification is not required when in the Completion Time of Condition H since the KHU associated with the underground emergency power path is not OPERABLE while in Condition H. OPERABILITY of that KHU will be demonstrated prior to returning to service. When in Condition H there is no need to verify LCO 3.3.21 is met since the function serves no purpose when both KHUs are inoperable.

Verifying by administrative means allows a check of logs or other information to determine the OPERABILITY status of required equipment in place of requiring unique performance of Surveillance Requirements. If the AC Source is subsequently determined inoperable, or an LCO stated in Required Action C.2.2.3 is subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

Required Action C.2.2.4 requires verifying alternate power source capability by performing SR 3.8.1.16. This confirms that entry into Condition C is due only to an inoperable main step-up transformer or an inoperable KHU, as applicable. If SR 3.8.1.16 is subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L. This Required Action is modified by a Note

BASES

ACTIONS
(continued)

C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

indicating that it is not applicable when in Condition H to perform Keowee Refurbishment Upgrades since the KHU associated with the underground emergency power path is not OPERABLE while in Condition H. The alternate power source capability will be verified prior to returning the KHU to service.

D.1, D.2 and D.3

With the KHU or its required underground emergency power path inoperable, sufficient AC power sources remain available to ensure safe shutdown of the unit in the event of a transient or accident. Operation may continue for 72 hours if the remaining KHU and its required overhead emergency power path are tested using SR 3.8.1.4 within one hour if not performed in the previous 12 hours. SR 3.8.1.4 is only required to be performed when the KHU associated with the overhead emergency power path is OPERABLE. This Required Action provides assurance that no undetected failures have occurred in the overhead emergency power path. Since Required Action D.1 only specifies "perform," a failure of SR 3.8.1.4 acceptance criteria does not result in a Required Action not met. However, if the KHU and its required overhead emergency path fails SR 3.8.1.4, both KHUs and their required emergency power paths are inoperable, and Condition I for both KHUs and their emergency power paths inoperable for reasons other than Condition G or H is entered concurrent with Condition D. This demonstration is to assure that the remaining emergency power path is not inoperable due to a common cause or due to an undetected failure. For outages of the KHU and its required underground emergency power path in excess of 24 hours, an LCT (using the 100 kV transmission circuit electrically separated from the grid and offsite loads) must energize a standby bus prior to the outage exceeding 24 hours. This ensures the availability of a power source on the standby buses when the KHU and its required underground emergency power path are out of service in excess of 24 hours. The second Completion Time of Required Action D.2 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost.

The second Completion Time for Required Action D.3 establishes a limit on the maximum time allowed for a KHU to be inoperable during any single contiguous occurrence of having a KHU inoperable. If Condition D is entered as a result of switching an inoperable KHU from the overhead to the underground emergency power path, it may have been inoperable for up to 72 hours. This could lead to a total of 144 hours since the initial failure of the KHU. The second Completion Time allows for an exception

BASES

ACTIONS

D.1, D.2 and D.3 (continued)

to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time the KHU become inoperable, instead of at the time Condition D was entered.

The first and second Completion Time for Required Action D.3 is modified by a Note indicating that the extended Completion Time of Required Action H.2 is applicable in lieu of these Completion Times when in Condition H to isolate, test and unisolate the KHUs during each of the two KHU Refurbishment Outages. This Note complements the H.2 Note and is necessary to allow continued operation in Condition D while in Condition H. Otherwise, the Completion Time for one inoperable KHU would expire before the Completion Time for two KHUs inoperable and entry into Condition M would be required.

E.1 and E.2

If the Required Action and associated Completion Time for Required Action D.2 are not met, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours for one Oconee unit and 24 hours for other Oconee unit(s) and to MODE 5 within 84 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1 and F.2

With the zone overlap protection circuitry inoperable when the overhead electrical disconnects for the KHU associated with the underground power path are closed, the zone overlap protection circuitry must be restored to OPERABLE status or the overhead electrical disconnects must be opened within 72 hours. In this Condition, both KHUs and their required emergency power paths are OPERABLE, however a single failure could result in the loss of both KHUs.

G.1

With both emergency power paths inoperable due to an E breaker and S breaker inoperable on the same main feeder bus, one breaker must be restored to OPERABLE status. In this Condition, both emergency power paths can still provide power to the remaining main feeder bus.

BASES

ACTIONS
(continued)

H.1 and H.2

With both KHUs or their required emergency power paths inoperable for planned maintenance or test with both standby buses energized from an LCT via an isolated power path, the KHU must be restored to OPERABLE status within 60 hours. The 60 hour Completion Time is modified by a Note indicating that an additional cumulative 120 hours is allowed when Condition entered to isolate, test and un-isolate the KHUs during each of the two KHU Refurbishment Upgrades prior to April 30, 2005 provided the following conditions are met: 1) period of use not in March, April, May or June; 2) the SSF, EFW System and LCTs (4C, 5C, and 6C) are verified OPERABLE prior to entering Condition; 3) RCS inventory is not reduced (RCS < 50" on LT-5); 4) the SSF is manned; 5) a Jocassee Hydro Unit is verified available to provide power prior to entering Condition; 6) a 2 hour SSF DG operability test is performed prior to the start of the first dual unit outage; and 7) the Completion Time shall only be extended twice during each KHU Refurbishment Outage. For example, if 140 hours (an additional 80 hours) is required to isolate the KHUs then 100 hours (an additional 40 hours) is allowed to unisolate and test the KHU. If one of the systems/components in Item 2 (SSF, EFW System and LCTs) above becomes inoperable or in Item 5 above becomes unavailable after entering the condition, immediate action should be taken to restore the equipment to OPERABLE/available status. The Keowee Refurbishment Upgrades include, but are not limited to, hydro turbine runner and discharge ring weld repair, governor, exciter and battery replacement, and an out-of-tolerance logic circuit modification. Operation with both KHUs and their required power paths inoperable is permitted for 60 hours or the modified Completion Time allowed by the note provided that both standby buses are energized using an LCT through the 100 kV transmission circuit and the requirements of the Note to the Condition are met. The Note to the Condition indicates that it may only be entered when both offsite sources are verified by administrative means to be OPERABLE and the requirements of the following LCOs are verified by administrative means to be met:

LCO 3.8.3, "DC Sources – Operating;"

LCO 3.8.6, "Vital Inverters – Operating;"

LCO 3.8.8, "Distribution Systems – Operating;"

LCO 3.3.17, "EPSL Automatic Transfer Function;"

LCO 3.3.18, "EPSL Voltage Sensing Circuits;" and

LCO 3.3.19, "EPSL 230 kV Switchyard DGVP."

BASES

ACTIONS

H.1 and H.2 (continued)

This increases the probability, even in the unlikely event of an additional failure, that the DC power system and the 120 VAC Vital Instrumentation power panelboards will function as required to support EPSL, power will not be lost to ES equipment, and EPSL will function as required.

Verifying by administrative means allows a check of logs or other information to determine the OPERABILITY status of required equipment in place of requiring unique performance of Surveillance Requirements. If the AC Source is subsequently determined inoperable, or an LCO stated in the Note to Condition H is subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

With both standby buses energized from an LCT via an isolated power path (100 kV transmission circuit electrically separated from the system grid and all offsite loads), a high degree of reliability for the emergency power system is provided. In this configuration, the LCT is serving as a second emergency power source, however, since the Oconee Units are vulnerable to a single failure of the 100 kV transmission circuit a time limit of 60 hours is imposed. Required Action H.1 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost.

If both emergency power paths are restored, unrestricted operation may continue. If only one power path is restored, operation may continue per ACTIONS C or D.

I.1, I.2, and I.3

With both KHUs or their required emergency power paths inoperable for reasons other than Conditions G and H, insufficient standby AC power sources are available to supply the minimum required ES functions. In this Condition, the offsite power system is the only source of AC power available for this level of degradation. The risk associated with continued operation for one hour without an emergency power source is considered acceptable due to the low likelihood of a LOOP during this time period, and because of the potential for grid instability caused by the simultaneous shutdown of all three units. This instability would increase the probability of a total loss of AC power. Operation with both KHUs or their required power paths inoperable is permitted for 12 hours provided that Required Actions I.1 and I.2 are met. Required Action I.1 requires that both standby buses be energized using an LCT via an isolated power

BASES

ACTIONS

1.1, 1.2, and 1.3 (continued)

path. With this arrangement (100 kV transmission circuit electrically separated from the system grid and all offsite loads), a high degree of reliability for the emergency power system is provided. In this configuration, the LCT is serving as a second emergency power source, however, since the Oconee Units are vulnerable to a single failure of the 100 kV transmission circuit a time limit of 12 hours is imposed. The second Completion Time of Required Action 1.1 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost. Required Action 1.2 requires that the OPERABILITY status of both offsite sources be determined by administrative means and that the OPERABILITY status of equipment required by the following LCOs be determined by administrative means:

LCO 3.8.3, "DC Sources – Operating;"

LCO 3.8.6, "Vital Inverters – Operating;"

LCO 3.8.8, "Distribution Systems – Operating;"

LCO 3.3.17, "EPSL Automatic Transfer Function;"

LCO 3.3.18, "EPSL Voltage Sensing Circuits;" and

LCO 3.3.19, "EPSL 230 kV Switchyard DGVP."

This increases the probability, even in the unlikely event of an additional failure, that the DC power system and the 120 VAC Vital Instrumentation power panelboards will function as required to support EPSL, power will not be lost to ES equipment, and EPSL will function as required.

Determining by administrative means allows a check of logs or other information to determine the OPERABILITY status of required equipment in place of requiring unique performance of Surveillance Requirements. If the AC Source is initially or subsequently determined inoperable, or an LCO stated in Required Action 1.2 is initially or subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

If both emergency power paths are restored, unrestricted operation may continue. If only one power path is restored, operation may continue per ACTIONS C or D.

BASES

ACTIONS
(continued)

J.1, J.2, and J.3

With one or both required offsite sources inoperable for reasons other than Condition A, sufficient AC power sources are available to supply necessary loads in the event of a DBA. However, since the AC power system is degraded below the Technical Specification requirements, a time limit on continued operation is imposed. With only one of the required offsite sources OPERABLE, the likelihood of a LOOP is increased such that the Required Actions for all required offsite circuits inoperable are conservatively followed. The risk associated with continued operation for one hour without a required offsite AC source is considered acceptable due to the low likelihood of a LOOP during this time period, and because of the potential for grid instability caused by the simultaneous shutdown of all three units.

Operation with one or both required offsite sources inoperable is permitted for 24 hours provided that Required Actions J.1 and J.2 are met. Required Action J.1 requires that both standby buses be energized using an LCT via an isolated power path. With this arrangement (100 kV transmission circuit electrically separated from the system grid and all offsite loads), a high degree of reliability for the emergency power system is provided. In this configuration, the LCT is serving as an emergency power source, however, since the Oconee units are vulnerable to a single failure of the 100 kV transmission circuit a time limit is imposed. The second Completion Time of Required Action J.1 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost. Required Action J.2 requires that the OPERABILITY status of both KHUs and their required emergency power paths be determined by administrative means and that the OPERABILITY status of equipment required by the following LCOs be determined by administrative means:

LCO 3.8.3, "DC Sources – Operating;"

LCO 3.8.6, "Vital Inverters – Operating;"

LCO 3.8.8, "Distribution Systems – Operating;"

LCO 3.3.17, "EPSL Automatic Transfer Function;"

LCO 3.3.18, "EPSL Voltage Sensing Circuits;"

LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and

LCO 3.3.21, "EPSL Keowee Emergency Start Function."

BASES

ACTIONS

J.1, J.2, and J.3 (continued)

This increases the probability, even in the unlikely event of an additional failure, that the DC power system and the 120 VAC Vital Instrumentation power panelboards will function as required to support EPSL, power will not be lost to ES equipment, and EPSL will function as required.

Determining by administrative means allows a check of logs or other information to determine the OPERABILITY status of required equipment in place of requiring unique performance of Surveillance Requirements. If the AC Source is initially or subsequently determined inoperable, or an LCO stated in Required Action J.2 is initially or subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

K.1

The two trip circuits for each closed N and SL breakers are required to ensure both breakers will open. An N breaker trip circuit encompasses those portions of the breaker control circuits necessary to trip the associated N breaker from the output of the 2 out of 3 logic matrix formed by the auxiliary transformer's undervoltage sensing circuits up to and including an individual trip coil for the associated N breaker. The undervoltage sensing channels for the auxiliary transformer are addressed in LCO 3.3.18, "Emergency Power Switching Logic (EPSL) Voltage Sensing Circuits." An SL breaker trip circuit encompasses those portions of the breaker control circuits necessary to trip the SL breaker from the output of both 2 out of 3 logic matrices formed by each standby bus's undervoltage sensing circuits up to and including an individual trip coil for the associated SL breaker. The undervoltage sensing channels for the CT- 5 transformer are addressed in LCO 3.3.18, "Emergency Power Switching Logic (EPSL) Voltage Sensing Circuits." With one trip circuit inoperable a single failure could cause an N or SL breaker to not open. This could prevent the transfer to other available sources. Therefore, 24 hours is allowed to repair the trip circuit or open the breaker (opening the breaker results in exiting the Condition). The Completion Time is based on engineering judgement taking into consideration the time required to complete the required action and the availability of the remaining trip circuit.

A Note modifies the Condition, indicating that separate Condition Entry is permitted for each breaker. Thus, Completion Times are tracked separately for the N1, N2, SL1, and SL2 breaker.

BASES

ACTIONS
(continued)

L.1, L.2, and L.3

With an AC Source inoperable or LCO not met, as stated in Note for Condition H entry; or with an AC Source inoperable or LCO not met, as stated in Required Action C.2.2.3 when in Condition C for > 72 hours; or with an AC Source inoperable or LCO not met, as stated in Required Action I.2 or J.2 when in Conditions I or J for > 1 hour; or with SR 3.8.1.16 not met, Required Action L.1, L.2 and L.3 requires restoration within four hours. Condition L is modified by a Note indicating that separate Condition entry is permitted for each inoperable AC Source, and LCO or SR not met. The Required Action is modified by a Note that allows the remaining OPERABLE KHU and its required emergency power path to be made inoperable for up to 12 hours if required to restore both KHUs and their required emergency power paths to OPERABLE status. This note is necessary since certain actions such as dewatering the penstock may be necessary to restore the inoperable KHU although these actions would also cause both KHUs to be inoperable.

The purpose of this Required Action is to restrict the allowed outage time for an inoperable AC Source or equipment required by an LCO when in Conditions C, H, I or J. For Conditions I and J when the LCOs stated are initially not met, the maximum Completion Time is four hours or the remaining Completion Time allowed by the stated LCO, whichever is shorter.

M.1 and M.2

If a Required Action and associated Completion Time for Condition C, F, G, H, I, J, K or L are not met; or if a Required Action and associated Completion Time are not met for Required Action D.1 or D.3, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours and to MODE 5 within 84 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

**SURVEILLANCE
REQUIREMENTS**

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are

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**SURVEILLANCE
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SR 3.8.1.1 (continued)

connected to their power source, and that appropriate separation of offsite sources is maintained. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.1.2

This SR verifies adequate battery voltage when the KHU batteries are on float charge. This SR is performed to verify KHU battery OPERABILITY. The Frequency of once per 7 days is consistent with manufacturers recommendations and IEEE-450 (Ref. 8).

SR 3.8.1.3

This SR verifies the availability of the KHU associated with the underground emergency power path to start automatically and energize the underground power path. Utilization of either the auto-start or emergency start sequence assures the control function OPERABILITY by verifying proper speed control and voltage. Power path verification is included to demonstrate breaker OPERABILITY from the KHU onto the standby buses. This is accomplished by closing the Keowee Feeder Breakers (SK) to energize each deenergized standby bus. The 31 day Frequency is adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

SR 3.8.1.4

This surveillance verifies the availability of the KHU associated with the overhead emergency power path. Utilization of either the auto-start or emergency start sequence assures the control function OPERABILITY by verifying proper speed control and voltage. The ability to supply the overhead emergency power path is satisfied by demonstrating the ability to synchronize (automatically or manually) the KHU with the grid system. The SR also requires that the underground power path be energized after removing the KHU from the overhead emergency power path. This surveillance can be satisfied by first demonstrating the ability of the KHU associated with the underground emergency path to energize the underground path then synchronizing the KHU to the overhead emergency power path. The SR is modified by a Note indicating that the requirement to energize the underground emergency power path is not

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**SURVEILLANCE
REQUIREMENTS**

SR 3.8.1.4 (continued)

applicable when the overhead disconnects are open for the KHU associated with the underground emergency power path or 2) when complying with Required Action D.1. The latter exception is necessary since Required Action D.1 continues to be applicable when both KHUs are inoperable.

The 31 day Frequency for this Surveillance was determined to be adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

SR 3.8.1.5

This surveillance verifies OPERABILITY of the trip functions of each closed SL and each closed N breaker. Neither of these breakers have any automatic close functions; therefore, only the trip coils require verification. Cycling of each breaker demonstrates functional OPERABILITY and the coil monitor circuits verify the integrity of each trip coil. The 31 day frequency is based on operating experience.

This SR modified by a Note that states it is not required to be performed for an SL breaker when its standby bus is energized from a LCT via an isolated power path. This is necessary since the standby buses are required to be energized from a LCT by several Required Actions of Specification 3.8.1 and the breakers must remain closed to energize the standby buses from a LCT.

SR 3.8.1.6

Infrequently used source breakers are cycled to ensure OPERABILITY. The Standby breakers are to be cycled one breaker at a time to prevent inadvertent interconnection of two units through the standby bus breakers. Cycling the startup breakers verifies OPERABILITY of the breakers and associated interlock circuitry between the normal and startup breakers. This circuitry provides an automatic, smooth, and safe transfer of auxiliaries in both directions between sources. The 31 day Frequency for this Surveillance was determined to be adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

This SR is modified by a Note which states the SR is not required to be performed for an S breaker when its standby bus is energized from a LCT via an isolated power path. This is necessary since the standby

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**SURVEILLANCE
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SR 3.8.1.6 (continued)

buses are required to be energized from a LCT by several Required Actions of Specification 3.8.1 and cycling the S breakers connects the standby buses with the main feeder buses which are energized from another source.

SR 3.8.1.7

The KHU tie breakers to the underground path, ACB3 and ACB4, are interlocked to prevent cross-connection of the KHU generators. The safety analysis utilizes two independent power paths for accommodating single failures in applicable accidents. Connection of both generators to the underground path compromises the redundancy of the emergency power paths. Installed test logic is used to verify a circuit to the close coil on one underground ACB does not exist with the other underground ACB closed. The 12 month Frequency for this surveillance is adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

SR 3.8.1.8

Each KHU tie breaker to the underground emergency power path and tie breaker to the overhead emergency path, are interlocked to prevent the unit associated with the underground circuit from automatically connecting to the overhead emergency power path. The safety analysis utilizes two independent power paths for accommodating single failures in applicable accidents. Connection of both generators to the overhead emergency power path compromises the redundancy of the emergency power paths. Temporary test instrumentation is used to verify a circuit to the close coil on the overhead ACB does not exist with the Underground ACB closed. The 12 month Frequency for this Surveillance was determined to be adequate based on operating experience to provide reliability verification without excessive equipment cycling for testing.

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. Since the only available loads of adequate magnitude for simulating a accident

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SR 3.8.1.9 (continued)

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.

This SR is modified by a Note that allows the upper limits on KHU frequency and voltage to not be met until the NRC issues an amendment which removes this Note, with the license amendment request to be submitted no later than April 5, 2001. delays the implementation of the surveillance requirement until the KHU digital governor modification is implemented. The acceptance testing for the modification will verify that the limits in the SR are met.

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.

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REQUIREMENTS**
(continued)

SR 3.8.1.12

Verification of cell to cell connection cleanliness, tightness, and proper coating with anti-corrosion grease provides an indication of any abnormal condition, and assures continued OPERABILITY of the battery. The 12 month frequency is based on engineering judgement and operational experience and is sufficient to detect cell connection degradation when it is properly coupled with other surveillances more frequently performed to detect abnormalities.

SR 3.8.1.13

The KHU underground ACBs have a control feature which will automatically close the KHU, that is pre-selected to the overhead path, into the underground path upon an electrical fault in the zone overlap region of the protective relaying. This circuitry prevents an electrical fault in the zone overlap region of the protective relaying from locking out both emergency power paths during dual KHU grid generation. In order to ensure this circuitry is OPERABLE, an electrical fault is simulated in the zone overlap region and the associated underground ACBs are verified to operate correctly. This surveillance is required on a 12 month Frequency. The 12 month Frequency is based on engineering judgement and provides reasonable assurance that the zone overlap protection circuitry is operating properly.

This SR is modified by a Note indicating the SR is only applicable when the overhead disconnects to the underground KHU are closed. When the overhead disconnects to the underground KHU are open, the circuitry preventing the zone overlap protective lockout of both KHUs is not needed.

SR 3.8.1.14

This surveillance verifies OPERABILITY of the trip functions of the SL and N breakers. This SR verifies each trip circuit of each breaker independently opens each breaker. Neither of these breakers have any automatic close functions; therefore, only the trip circuits require verification. The 18 month Frequency is based on engineering judgement and provides reasonable assurance that the SL and N breakers will trip when required.

The SR is modified by a Note indicating that the SR is not required for an SL breaker when its standby bus is energized by a LCT via an isolated power path. This is necessary since the standby buses are required to

BASES

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SR 3.8.1.14 (continued)

be energized from a LCT by several Required Actions of Specification 3.8.1 and the breakers must remain closed to energize the standby buses from a LCT.

SR 3.8.1.15

This surveillance verifies proper operation of the 230 kV switchyard circuit breakers upon an actual or simulated actuation of the Switchyard Isolation circuitry. This test causes an actual switchyard isolation (by actuation of degraded grid voltage protection) and alignment of KHUs to the overhead and underground emergency power paths. An 18 month Frequency minimizes the impact to the Station and the operating Units which are connected to the 230 kV switchyard. The effect of this SR is not significant because the generator red bus tie breakers and feeders from the Oconee 230 kV switchyard red bus to the system grid remain closed. Either Switchyard Isolation Channel causes full system realignment, which involves a complete switchyard realignment. To avoid excessive switchyard circuit breaker cycling, realignment and KHU emergency start functions, this SR need be performed only once each SR interval.

This SR is modified by a Note. This Note states the redundant breaker trip coils shall be verified on a STAGGERED TEST BASIS. Verifying the trip coils on a STAGGERED TEST BASIS precludes unnecessary breaker operation and minimizes the impact to the Station and the operating Units which are connected to the 230 kV switchyard.

SR 3.8.1.16

This SR verifies by administrative means that one KHU provides an alternate manual AC power source capability by manual or automatic KHU start with manual synchronize, or breaker closure, to energize its non-required emergency power path. That is, when the KHU to the overhead emergency power path is inoperable, the SR verifies by administrative means that the overhead emergency power path is OPERABLE. When the overhead emergency power path is inoperable, the SR verifies by administrative means that the KHU associated with the overhead emergency power path is OPERABLE.

This SR is modified by a Note indicating that the SR is only applicable when complying with Required Action C.2.2.4.

BASES (continued)

- REFERENCES
1. UFSAR, Section 3.1.39
 2. UFSAR, Chapter 16
 3. 10 CFR 50.36
 4. UFSAR, Chapter 6
 5. UFSAR, Chapter 15
 6. Regulatory Guide 1.32
 7. Regulatory Guide 1.129
 8. IEEE-450-1980
 9. UFSAR, Section 6.3.3.3
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Attachment 3
July 12, 2004

ATTACHMENT 3
MARKUP OF TECHNICAL SPECIFICATION

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. (continued)</p> <div data-bbox="57 489 548 791" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>-----NOTE----- Not applicable to remaining KHU and its required emergency underground power path or LCO 3.3.21 when in Condition H to perform Keowee Refurbishment Upgrades. -----</p> </div> <div data-bbox="24 1217 502 1410" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>-----NOTE----- Not applicable when in Condition H to perform Keowee Refurbishment Upgrades. -----</p> </div>	<p>C.2.2.3 Verify by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and LCO 3.3.21, "EPSL Keowee Emergency Start Function" are met.</p> <p><u>AND</u></p> <p>C.2.2.4 Verify alternate power source capability by performing SR 3.8.1.16.</p> <p><u>AND</u></p>	<p>72 hours</p> <p>72 hours</p> <p><u>AND</u></p> <p>Every 31 days thereafter</p> <p>(continued)</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2.5 Restore KHU and its required overhead emergency power path to OPERABLE status.	28 days when Condition due to an inoperable Keowee main step-up transformer <u>AND</u> 45 days from discovery of initial inoperability when Condition due to an inoperable KHU if not used for that KHU in the previous 3 years

(continued)

-----NOTE-----
 An additional 17 days is allowed when Condition entered to perform KHU Refurbishment Upgrades prior to April 30, 2005 except during March, April, May or June

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. KHU or its required underground power path inoperable.</p> <div data-bbox="16 702 578 1276" style="border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px 0;"> <p>-----NOTE----- The extended Completion Time of Required Action H.2 is applicable in lieu of these Completion Times when in Condition H to isolate, test and unisolate the KHUs during each of the two KHU Refurbishment Outages. -----</p> </div>	<p>D.1 Perform SR 3.8.1.4 for OPERABLE KHU.</p>	<p>1 hour if not performed in previous 12 hours</p>
	<p><u>AND</u></p> <p>D.2 Energize either standby bus from LCT via isolated power path.</p>	<p>24 hours</p> <p><u>AND</u></p> <p>1 hour from subsequent discovery of deenergized required standby bus</p>
	<p><u>AND</u></p> <p>D.3 Restore KHU and its required underground emergency power path to OPERABLE status.</p>	<p>72 hours</p> <p><u>AND</u></p> <p>72 hours from discovery of inoperable KHU</p>
<p>E. Required Action and associated Completion Time not met for Required Action D.2.</p>	<p>E.1 Be in MODE 3.</p>	<p>12 hours for one unit</p> <p><u>AND</u></p> <p>24 hours for other unit(s)</p>
	<p><u>AND</u></p> <p>E.2 Be in MODE 5.</p>	<p>84 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>H. -----NOTE----- Condition may be entered only when both required offsite sources are verified by administrative means to be OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating;" LCO 3.8.6, "Vital Inverters-Operating;" LCO 3.8.8, "Distribution Systems-Operating;" LCO 3.3.17, "EPSL Automatic Transfer Function;" LCO 3.3.18, "EPSL Voltage Sensing Circuits;" LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," are verified by administrative means to be met.</p> <p>-----</p> <p>Both KHUs or their required emergency power paths inoperable for planned maintenance or test with both standby buses energized from LCT via isolated power path.</p>	<p>H.1 Energize both standby buses from LCT via isolated power path.</p> <p><u>AND</u></p> <p>H.2 Restore one KHU and its required emergency power path to OPERABLE status.</p>	<p>1 hour from discovery of deenergized standby bus</p> <p>60 hours</p> <div data-bbox="660 829 1437 1404" style="border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px auto; width: 80%;"> <p>-----NOTE-----</p> <p>An additional cumulative 120 hours is allowed when Condition entered to isolate, test and un-isolate the KHUs during each of the two KHU Refurbishment Outages prior to April 30, 2005 provided the following conditions are met: 1) period of use not in March, April, May or June; 2) the SSF, EFW System and LCTs are verified OPERABLE prior to entering Condition, 3) RCS inventory is not reduced, 4) the SSF is manned, 5) a Jocassee Hydro Unit is verified available to provide power prior to entering Condition, 6) a 2 hour SSF DG operability test is performed prior to the start of the first dual unit outage, and 7) the Completion Time is only extended twice during each KHU Refurbishment Outage.</p> <p>-----</p> </div>

(continued)

BASES

The 45 day Completion Time is modified by a note indicating that an additional 17 days is allowed when Condition C is entered to perform KHU Refurbishment Upgrades prior to April 30, 2005, except during March, April, May, or June. These upgrades include, but are not limited to, hydro turbine runner and discharge ring weld repair, governor, exciter and battery replacement, and an out-of-tolerance logic circuit modification. The additional 17 days is allowed to be used once for each KHU for upgrade work performed prior to April 30, 2005.

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C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

repairs which are estimated to be necessary every six to eight years. Also, generator thrust and guide bearing replacements are necessary. Other items which manifest as failures are expected to be rare and may be performed during the permitted maintenance periods. As such, the 45 day restoration time of Required Action C.2.2.5 is allowed only once in a three year period for each KHU. This Completion Time is 45 days from discovery of initial inoperability of the KHU. This effectively limits the time the KHU can be inoperable to 45 days from discovery of initial inoperability rather than 45 days from entry into Condition C and precludes any additional time that may be gained as a result of switching an inoperable KHU from the underground to the overhead emergency power path.

Required Actions C.2.2.1, C.2.2.2, C.2.2.3, and C.2.2.4 must be met in order to allow the longer restoration times of Required Action C.2.2.5. Required Action C.2.2.1 requires that both standby buses be energized using an LCT through the 100 kV transmission circuit. With this arrangement (100 kV transmission circuit electrically separated from the system grid and all offsite loads), a high degree of reliability for the emergency power system is provided. In this configuration, the LCT is serving as a second emergency power source, however, since the 100 kV transmission circuit is vulnerable to severe weather a time limit is imposed. The second Completion Time of Required Action C.2.2.1 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost. Required Action C.2.2.2 requires suspension of KHU generation to the grid except for testing. The restriction reduces the number of possible failures which could cause loss of the underground emergency power path. Required Action C.2.2.3 requires verifying by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE. This provides additional assurance that offsite power will be available. In addition, this assures that the KHU and its required underground emergency power path are available. Required Action C.2.2.3 also requires verifying by administrative means that the requirements of the following LCOs are met:

LCO 3.8.3, "DC Sources – Operating;"

LCO 3.8.6, "Vital Inverters – Operating;"

LCO 3.8.8, "Distribution Systems – Operating;"

BASES

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C.1, C.2.1, C.2.2.1, C.2.2.2, C.2.2.3, C.2.2.4, and C.2.2.5 (continued)

Required Action C.2.2.3 is modified by a Note indicating that it is not applicable to the remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform Keowee Refurbishment Upgrades. Administrative verification is not required when in the Completion Time of Condition H since the KHU associated with the underground emergency power path is not OPERABLE while in Condition H. OPERABILITY of that KHU will be demonstrated prior to returning to service. When in Condition H there is no need to verify LCO 3.3.21 is met since the function serves no purpose when both KHUs are inoperable.

- LCO 3.3.17, "EPSL Automatic Transfer Function;"
- LCO 3.3.18, "EPSL Voltage Sensing Circuits;"
- LCO 3.3.19, "EPSL 230 kV Switchyard DGVP;" and
- LCO 3.3.21, "EPSL Keowee Emergency Start Function."

This increases the probability, even in the unlikely event of an additional failure, that the DC power system and the 120 VAC Vital Instrumentation power panelboards will function as required to support EPSL, power will not be lost to ES equipment, and EPSL will function as required.

Verifying by administrative means allows a check of logs or other information to determine the OPERABILITY status of required equipment in place of requiring unique performance of Surveillance Requirements. If the AC Source is subsequently determined inoperable, or an LCO stated in Required Action C.2.2.3 is subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

Required Action C.2.2.4 requires verifying alternate power source capability by performing SR 3.8.1.16. This confirms that entry into Condition C is due only to an inoperable main step-up transformer or an inoperable KHU, as applicable. If SR 3.8.1.16 is subsequently determined not met, continued operation up to a maximum of four hours is allowed by ACTION L.

D.1, D.2 and D.3

With the KHU or its required underground emergency power path inoperable, sufficient AC power sources remain available to ensure safe shutdown of the unit in the event of a transient or accident. Operation may continue for 72 hours if the remaining KHU and its required overhead emergency power path are tested using SR 3.8.1.4 within one hour if not performed in the previous 12 hours. SR 3.8.1.4 is only required to be performed when the KHU associated with the overhead emergency power path is OPERABLE. This Required Action provides assurance that no undetected failures have occurred in the overhead emergency power path. Since Required Action D.1 only specifies

This Required Action is modified by a Note indicating that it is not applicable when in Condition H to perform Keowee Refurbishment Upgrades since the KHU associated with the underground emergency power path is not OPERABLE while in Condition H. The alternate power source capability will be verified prior to returning the KHU to service.

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D.1, D.2 and D.3 (continued)

"perform," a failure of SR 3.8.1.4 acceptance criteria does not result in a Required Action not met. However, if the KHU and its required overhead emergency path fails SR 3.8.1.4, both KHUs and their required emergency power paths are inoperable, and Condition I for both KHUs and their emergency power paths inoperable for reasons other than Condition G or H is entered concurrent with Condition D. This demonstration is to assure that the remaining emergency power path is not inoperable due to a common cause or due to an undetected failure. For outages of the KHU and its required underground emergency power path in excess of 24 hours, an LCT (using the 100 kV transmission circuit electrically separated from the grid and offsite loads) must energize a standby bus prior to the outage exceeding 24 hours. This ensures the availability of a power source on the standby buses when the KHU and its required underground emergency power path are out of service in excess of 24 hours. The second Completion Time of Required Action D.2 permits the standby buses to be re-energized by an LCT within 1 hour in the event this source is subsequently lost.

The second Completion Time for Required Action D.3 establishes a limit on the maximum time allowed for a KHU to be inoperable during any single contiguous occurrence of having a KHU inoperable. If Condition D is entered as a result of switching an inoperable KHU from the overhead to the underground emergency power path, it may have been inoperable for up to 72 hours. This could lead to a total of 144 hours since the initial failure of the KHU. The second Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time the KHU become inoperable, instead of at the time Condition D was entered.

E.1 and E.2

If the Required Action and associated Completion Time for Required Action D.2 are not met, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours for one Oconee unit and 24 hours for other Oconee unit(s) and to MODE 5 within 84 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

The first and second Completion Time for Required Action D.3 is modified by a Note indicating that the extended Completion Time of Required Action H.2 is applicable in lieu of these Completion Times when in Condition H to isolate, test and unisolate the KHUs during each of the two KHU Refurbishment Outages. This Note complements the H.2 Note and is necessary to allow continued operation in Condition D while in Condition H. Otherwise, the Completion Time for one inoperable KHU would expire before the Completion Time for two KHUs inoperable and entry into Condition M would be required.

BASES

ACTIONS
(continued)

The 60 hour Completion Time is modified by a Note indicating that an additional cumulative 120 hours is allowed when Condition entered to isolate, test and unisolate the KHUs during each of the two KHU Refurbishment Upgrades prior to April 30, 2005 provided the following conditions are met: 1) period of use not in March, April, May or June; 2) the SSF, EFW System and LCTs (4C, 5C, and 6C) are verified OPERABLE prior to entering Condition; 3) RCS inventory is not reduced (RCS < 50" on LT-5); 4) the SSF is manned; 5) a Jocassee Hydro Unit is verified available to provide power prior to entering Condition; 6) a 2 hour SSF DG operability test is performed prior to the start of the first dual unit outage; and 7) the Completion Time is only extended twice during each KHU Refurbishment Outage. For example, if 140 hours (an additional 80 hours) is required to isolate the KHUs then 100 hours (an additional 40 hours) is allowed to unisolate and test the KHU. If one of the systems/components in Item 2 (SSF, EFW System and LCTs) above becomes inoperable or in Item 5 above becomes unavailable after entering the condition, immediate action should be taken to restore the equipment to OPERABLE/available status. The Keowee Refurbishment Upgrades include, but are not limited to, hydro turbine runner and discharge ring weld repair, governor, exciter and battery replacement, and an out-of-tolerance logic circuit modification.

F.1 and F.2

With the zone overlap protection circuitry inoperable when the overhead electrical disconnects for the KHU associated with the underground power path are closed, the zone overlap protection circuitry must be restored to OPERABLE status or the overhead electrical disconnects must be opened within 72 hours. In this Condition, both KHUs and their required emergency power paths are OPERABLE, however a single failure could result in the loss of both KHUs.

G.1

With both emergency power paths inoperable due to an E breaker and S breaker inoperable on the same main feeder bus, one breaker must be restored to OPERABLE status. In this Condition, both emergency power paths can still provide power to the remaining main feeder bus.

H.1 and H.2

With both KHUs or their required emergency power paths inoperable for planned maintenance or test with both standby buses energized from an LCT via an isolated power path, the KHU must be restored to OPERABLE status within 60 hours. Operation with both KHUs and their required power paths inoperable is permitted for 60 hours provided that both standby buses are energized using an LCT through the 100 kV transmission circuit and the requirements of the Note to the Condition are met. The Note to the Condition indicates that it may only be entered when both offsite sources are verified by administrative means to be OPERABLE and the requirements of the following LCOs are verified by administrative means to be met:

- LCO 3.8.3, "DC Sources – Operating;"
- LCO 3.8.6, "Vital Inverters – Operating;"
- LCO 3.8.8, "Distribution Systems – Operating;"
- LCO 3.3.17, "EPSL Automatic Transfer Function;"
- LCO 3.3.18, "EPSL Voltage Sensing Circuits;" and
- LCO 3.3.19, "EPSL 230 kV Switchyard DGVP."

or the modified Completion Time allowed by the note

List of Regulatory Commitments

The following table identifies those actions committed to by Duke Energy Corporation (Duke) in this letter, the initial August 22, 2002 License Amendment Request (LAR), and subsequent Supplements (September 12, 2003, February 4, February 16, March 23, April 28, and June 17, 2004). Any other statements in these submittals were provided for informational purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Boyd Shingleton at (864) 885-4716.

REGULATORY COMMITMENTS	Due Date/Event
Keowee Refurbishment Work will be controlled by a Critical Evolution Plan (CEP)	Keowee Refurbishment Outages
The compensatory measures committed to by the License Amendment Request (LAR) and its Supplements will be captured in the CEP for each Keowee Refurbishment Outage	Keowee Refurbishment Outages
The Lee Combustion Turbines (LCTs) not energizing the standby buses will be on standby should the required LCT become inoperable	Keowee Refurbishment Outages
A LCT will be aligned to energize the standby bus before the emergency power paths are removed from service	Keowee Refurbishment Outages
During periods when both KHUs are inoperable, one of the two standby LCTs will be running.	Keowee Refurbishment Outages
No discretionary maintenance or testing will be performed on the Standby Shutdown Facility, Emergency Feedwater System, and AC Power System	Keowee Refurbishment Outages
Work on the 230 kV switchyard and transformer yards, and other ORAM-sentinel risk significant systems associated with AC power availability will be restricted during the single and dual KHU outages.	Keowee Refurbishment Outages
To the extent practical, maintenance and testing in the switchyard is to be scheduled outside the time period of the upgrade.	Keowee Refurbishment Outages
Any maintenance on the Duke system that could affect the Oconee switchyard is being re-scheduled outside the Keowee outage time frame.	Keowee Refurbishment Outages
The 30 mile Lee Electrical Transmission Right of Way line segment will receive danger tree maintenance work for trees located outside the defined R/W width.	Keowee Refurbishment Outages
The CEP will include criteria related to weather and grid conditions that must be satisfied prior to the start of the overall Keowee Refurbishment Outage and each of the dual KHU outages	Keowee Refurbishment Outages
The criteria will include a check of the short range weather forecast and grid conditions	Keowee Refurbishment Outages
The CEP will also specifically address the need to monitor weather and grid conditions and include appropriate actions based on those conditions and the status of the Keowee units.	Keowee Refurbishment Outages
The CEP will include steps to verify the RTCA computer program is available prior to the start of a dual KHU outage.	Keowee Refurbishment Outages
The CEP will include criteria to determine weather or grid conditions that would require returning a Keowee unit to service.	Keowee Refurbishment Outages
Duke will have provisions in place to return a KHU to service should termination criteria in the CEP be met.	Keowee Refurbishment Outages
Duke will have provisions in place to allow the return of one KHU to service should Keowee be without auxiliary power as a result of a loss of power	Keowee Refurbishment Outages
The SSF Pressurizer Heater Capacity modification will be completed prior to the KHU Refurbishment Outages	Complete

REGULATORY COMMITMENTS	Due Date/Event
Duke will verify the system electrical grid status is Yellow or Green and is expected to remain so for the next three days within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will verify the electrical system reserves are Adequate, Good, or Excellent and are expected to remain so for the next three days within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will verify there are a minimum of 4 independent power paths (offsite power lines) into the ONS switchyard within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will verify there are no tornado watches or warnings in the Oconee/Pickens county area and none are forecast for the next three days within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will verify there are no tropical storms or hurricanes forecasted to affect the Oconee/Pickens county area for the next three days within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will verify there are no ice storms or conditions that could produce ice storms in the Oconee/Pickens county area forecasted for the next three days that could produce a radial ice accumulation of ½ inch on power lines within 2 hours of the start of a dual KHU outage.	Keowee Refurbishment Outages
Duke will immediately evaluate the need to exit a dual KHU outage if the system electrical status is expected to change to Orange or Red, the electrical system reserves are expected to degrade below Adequate, or less than 4 offsite lines are available prior to the end of the outage.	Keowee Refurbishment Outages
Duke will immediately evaluate the need to exit a dual KHU outage if a tropical storm, hurricane, or frontal system that could produce damaging winds or tornados is forecasted for the Oconee/Pickens county area prior to the end of the outage.	Keowee Refurbishment Outages
Duke will immediately evaluate the need to exit a dual KHU outage if an ice storm that could produce ¼ inch of radial ice accumulation on conductors with 30 mph winds or ½ inch of radial ice accumulation with no winds is forecasted for the Oconee/Pickens county area prior to the end of the outage.	Keowee Refurbishment Outages
Duke will notify the NRC via the Emergency Notification System (ENS) should grid or weather related criteria be met that requires Duke to evaluate the need to exit the dual KHU outage.	Keowee Refurbishment Outages
Duke will provide backup power capability for the Turbine Driven Emergency Feedwater Pump (TDEFWP) controls and valves to allow the pumps to continue feeding the Steam Generators on each Oconee Unit beyond the station battery life until a KHU can be restored.	Keowee Refurbishment Outages