T. PRESTON GILLESPIE, JR.
Vice President
Oconee Nuclear Station

Duke Energy
ON01VP / 7800 Rochester Hwy.
Seneca, SC 29672

864-873-4478
864-873-4208 fax
T.Gillespie@duke-energy.com

April 24, 2012

U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station
Docket Numbers 50-269, 50-270, and 50-287
Technical Specification Bases (TSB) Changes

Pursuant to Technical Specification 5.5.15, Technical Specifications (TS) Bases Control Program, please find attached the latest change to the Oconee Technical Specification Bases.

On April 10, 2012, Station Management approved a revision to TSB 3.3.20, EPSL CT-5 Degraded Grid Voltage Protection (DGVP) to reflect the correct required voltage for operation of emergency equipment with each Unit's auxiliary power aligned to Central Switchyard via CT-5.

Attachment 1 contains the new TSB pages, Attachment 2 contains the marked up version of the TSB pages.

If any additional information is needed, please contact Kent Alter at 864-873-3255.

Sincerely,

TP Gillespie
T. Preston Gillespie, Jr.
Vice President
Oconee Nuclear Station

A001
NRR

cc: John Boska
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 8 C2
Washington, DC 20555

Victor McCree
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Ga. 30303-1257

Andy Sabisch
Senior Resident Inspector
Oconee Nuclear Station

Susan E. Jenkins, Manager
Radioactive & Infectious Waste Management
SC Dept. of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

Attachment 1

TSB revision

B 3.3 INSTRUMENTATION

B 3.3.20 Emergency Power Switching Logic (EPSL) CT-5 Degraded Grid Voltage Protection (DGVP)

BASES

BACKGROUND

Two levels of protection are provided for the standby buses to assure that degradation of voltage from the 100 kV transmission system does not adversely impact the function of safety related systems and components. The first level of protection is provided by the EPSL CT-5 Degraded Grid Protection System. The second level of protection is provided by undervoltage relaying on the standby buses (reference LCO 3.3.18, "EPSL Voltage Sensing Circuits") which protects from loss of voltage.

Three undervoltage sensing relays provide common input to two channels of actuating logic. In addition to the three phase undervoltage sensing relays, each channel includes one time-delay relay, one auxiliary relay, and one associated single phase undervoltage sensing relay. Each channel trip signal passes through a selector switch, which either allows or inhibits the trip signal, to actuate one trip coil in each SL breaker. Inoperability of any voltage sensing channel reduces the logic for the voltage sensing function to a two-out-of-two. Loss of two or more voltage sensing relays results in inoperability of both channels of actuation logic.

APPLICABLE SAFETY ANALYSES

The EPSL CT-5 Degraded Grid Voltage Protection function is required to ensure adequate voltage is available during an ES actuation concurrent with a loss of offsite power or degraded voltage from the 230 kV switchyard when ES loads are supplied by the standby buses (Ref.1). The minimum voltage that will ensure proper operation of loads during ES actuation is 3858 V as documented in site calculations.

This system is only required to be OPERABLE when the unit is in MODES 1, 2, 3, and 4 and the standby buses are energized without being electrically separated from the grid and offsite loads. System design is to provide protection for ES components caused by voltage droop due to inrush as the unit connects to the standby buses. The system is not a substitute for the dedicated line from Lee Gas Turbines.

The Lee Feeder breakers (SL) have no automatic close functions. However, this system does provide additional flexibility for the Station electrical system and operators in available power source options.

The EPSL CT-5 Degraded Grid Voltage Protection satisfies Criterion 3 of 10 CFR 50.36 (Ref. 2).

BASES (continued)

LCO

Three CT-5 degraded grid voltage sensing relay channels are required to be OPERABLE. Failure of one channel reduces the reliability of the function. The requirement for three channels to be OPERABLE ensures that two channels will remain OPERABLE if a failure has occurred in one channel. The remaining voltage sensing channels can perform the safety function.

Two channels of the CT-5 Degraded Grid Voltage Protection Actuation Logic function are required to be OPERABLE. The requirement for two channels to be OPERABLE ensures that one channel will remain OPERABLE if a failure has occurred in one channel. The remaining channel can perform the safety function.

APPLICABILITY

The CT-5 DGPS functions are required to be OPERABLE in MODES 1, 2, 3, and 4 when standby buses are energized without being electrically separated from the grid and offsite loads to ensure adequate voltage protection should a unit be transferred to the standby bus during an event requiring an ES actuation.

The EPSL CT-5 DGVP functions are not required to be OPERABLE in MODES 5 and 6 since more time is available for the operator to respond to a loss of power event.

ACTIONS

A.1

If one CT-5 DGVP voltage sensing relay channel is inoperable, the channel must be placed in trip within 72 hours. Tripping the affected channel places the function in a one-out-of-two configuration. Operation in this configuration may continue indefinitely since the DGVP function is capable of performing its DGVP function in the presence of any single random failure. With one channel inoperable, the remaining voltage sensing channels are capable of providing the DGVP function. The 72 hour completion time is based on engineering judgement taking into consideration the infrequency of actual grid system voltage degradation, and the probability of an event requiring an ES actuation.

B.1

If one CT-5 DGVP actuation logic channel is inoperable, the actuation logic channel must be restored to OPERABLE status within 72 hours. With one actuation logic channel inoperable, the remaining actuation logic channel is

BASES

ACTIONS

B.1 (continued)

capable of providing the CT-5 DGVP function. The 72 hour completion time is based on engineering judgement taking into consideration the infrequency of actual grid system voltage degradation and the probability of an event requiring an ES actuation.

C.1 and C.2

If two or more voltage sensing relay channels or two actuation logic channels are inoperable, automatic protection from degraded grid voltage for the standby buses powered from the 100 kV transmission system is not available. Continued operation is allowed provided that the SL breakers are opened within one hour.

Additionally, with the Required Action and associated Completion Time of Condition A or B not met, the SL breakers must be opened within one hour. This arrangement provides a high degree of reliability for the emergency power system. The one hour Completion Time is based on engineering judgement taking into consideration the infrequency of actual grid system voltage degradation and the probability of an event requiring an ES actuation.

SURVEILLANCE REQUIREMENTS

SR 3.3.20.1

A CHANNEL FUNCTIONAL TEST is performed on each CT-5 DGVP voltage sensing channel and each CT-5 DGVP actuation logic channel to ensure the entire channel will perform its intended function. Any setpoint adjustments shall be consistent with the assumptions of the setpoint analysis. The Frequency of 18 months is based on engineering judgment and operating experience that determined testing on an 18 month interval provides reasonable assurance that the circuitry is available to perform its safety function.

SR 3.3.20.2

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.20.2 (continued)

between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint analysis.

The Frequency is justified by the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

REFERENCES

1. UFSAR, Chapter 8.
2. 10 CFR 50.36.

Attachment 2

Markup of current TSB

B 3.3 INSTRUMENTATION

B 3.3.20 Emergency Power Switching Logic (EPSL) CT-5 Degraded Grid Voltage Protection (DGVP)

BASES

BACKGROUND

Two levels of protection are provided for the standby buses to assure that degradation of voltage from the 100 kV transmission system does not adversely impact the function of safety related systems and components. The first level of protection is provided by the EPSL CT-5 Degraded Grid Protection System. The second level of protection is provided by undervoltage relaying on the standby buses (reference LCO 3.3.18, "EPSL Voltage Sensing Circuits") which protects from loss of voltage.

Three undervoltage sensing relays provide common input to two channels of actuating logic. In addition to the three phase undervoltage sensing relays, each channel includes one time-delay relay, one auxiliary relay, and one associated single phase undervoltage sensing relay. Each channel trip signal passes through a selector switch, which either allows or inhibits the trip signal, to actuate one trip coil in each SL breaker. Inoperability of any voltage sensing channel reduces the logic for the voltage sensing function to a two-out-of-two. Loss of two or more voltage sensing relays results in inoperability of both channels of actuation logic.

APPLICABLE SAFETY ANALYSES

The EPSL CT-5 Degraded Grid Voltage Protection function is required to ensure adequate voltage is available during an ES actuation concurrent with a loss of offsite power or degraded voltage from the 230 kV switchyard when ES loads are supplied by the standby buses (Ref.1). ~~Based on calculations, 4.155 kV is~~ The minimum voltage that will ensure proper operation of loads during ES actuation is 3858 V as documented in site calculations.

This system is only required to be OPERABLE when the unit is in MODES 1, 2, 3, and 4 and the standby buses are energized without being electrically separated from the grid and offsite loads. System design is to provide protection for ES components caused by voltage droop due to inrush as the unit connects to the standby buses. The system is not a substitute for the dedicated line from Lee Gas Turbines.

The Lee Feeder breakers (SL) have no automatic close functions. However, this system does provide additional flexibility for the Station electrical system and operators in available power source options.

The EPSL CT-5 Degraded Grid Voltage Protection satisfies Criterion 3 of 10 CFR 50.36 (Ref. 2).

BASES REVISION DATED XX/XX/XX
~~Amendment Nos. 300, 300, & 300~~

BASES (continued)

LCO

Three CT-5 degraded grid voltage sensing relay channels are required to be OPERABLE. Failure of one channel reduces the reliability of the function. The requirement for three channels to be OPERABLE ensures that two channels will remain OPERABLE if a failure has occurred in one channel. The remaining voltage sensing channels can perform the safety function.

Two channels of the CT-5 Degraded Grid Voltage Protection Actuation Logic function are required to be OPERABLE. The requirement for two channels to be OPERABLE ensures that one channel will remain OPERABLE if a failure has occurred in one channel. The remaining channel can perform the safety function.

APPLICABILITY

The CT-5 DGPS functions are required to be OPERABLE in MODES 1, 2, 3, and 4 when ~~standby buses are energized~~ without being electrically separated from ~~grid or loads~~ to ensure adequate voltage protection should a unit be transferred to the standby bus during an event requiring an ES actuation. the grid and offsite loads

The EPSL CT-5 DGVP functions are not required to be OPERABLE in MODES 5 and 6 since more time is available for the operator to respond to a loss of power event.

ACTIONS

A.1

If one CT-5 DGVP voltage sensing relay channel is inoperable, the channel must be placed in trip within 72 hours. Tripping the affected channel places the function in a one-out-of-two configuration. Operation in this configuration may continue indefinitely since the DGVP function is capable of performing its DGVP function in the presence of any single random failure. With one channel inoperable, the remaining voltage sensing channels are capable of providing the DGVP function. The 72 hour completion time is based on engineering judgement taking into consideration the infrequency of actual grid system voltage degradation, and the probability of an event requiring an ES actuation.

B.1

If one CT-5 DGVP actuation logic channel is inoperable, the actuation logic channel must be restored to OPERABLE status within 72 hours. With one actuation logic channel inoperable, the remaining actuation logic channel is

BASES REVISION DATED xx/xx/xx
~~Amendment Nos. 300, 300, & 300~~