

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9312080185 DOC.DATE: 93/11/30 NOTARIZED: NO DOCKET #
 FACIL:50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269
 50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

AUTH.NAME AUTHOR AFFILIATION
 HAMPTON,J.W. Duke Power Co.
 RECIP.NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Discusses info re 931102 telcon between NRC & util
 requesting addl info re administrative controls that will be
 placed on use of central switchyard through CT-5.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
 TITLE: OR Submittal: General Distribution

NOTES:

RECIPIENT ID CODE/NAME	COPIES		RECIPIENT ID CODE/NAME	COPIES	
	LTTR	ENCL		LTTR	ENCL
PD2-3 LA	1	1	PD2-3 PD	1	1
WIENS,L	2	2			
INTERNAL: ACRS	6	6	NRR/DE/EELB	1	1
NRR/DORS/OTSB	1	1	NRR/DRCH/HICB	1	1
NRR/DRPW	1	1	NRR/DSSA/SPLB	1	1
NRR/DSSA/SRXB	1	1	NUDOCS-ABSTRACT	1	1
OGC/LRDCB	1	0	OGC/HDS2	1	0
REG FILE 01	1	1			

EXTERNAL: NRC PDR 1 1 NSIC 1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 20

R
I
D
S
/
A
D
D
S
/
A
D
D
S

Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax



DUKE POWER

November 30, 1993

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Administrative Controls for use of Central
Switchyard through CT-5

During a telephone call between the NRC and Duke on November 2, 1993, the NRC requested additional information pertaining to the administrative controls that will be placed on the use of the Central switchyard through CT-5. These administrative controls are incorporated in the revision to Technical Specification 3.7 that is currently under review by the NRC.

The purpose of the CT-5 Degraded Grid Protection System (DGPS) is to ensure adequate voltage is available during an ES actuation concurrent with a loss of offsite power (LOOP) or degraded voltage from the 230kV switchyard. The CT-5 Degraded Grid Protection system consists of three voltage sensing relays and two channels of actuation logic. With any Oconee unit above cold shutdown and the Central Switchyard energizing the standby buses, three voltage sensing relays and two channels of actuation logic for the CT-5 Degraded Grid Protection system shall be operable.

If one voltage sensing relay or one channel of actuation logic is inoperable, a Limited Condition of Operation (LCO) shall be entered that will allow 7 days for restoration of the equipment to an operable status. The 7 day completion time is based on engineering judgement taking into consideration the remaining operable undervoltage relays or channel of actuation logic, the availability of the 230kV switchyard, the infrequency of actual Grid system voltage degradation, the low probability of a simultaneous ES actuation and loss of the 230kV switchyard, and the time required to restore the equipment to operable status.

When the equipment cannot be returned to an operable status within the required completion time of 7 days, then an LCO shall be entered that requires the separation of the standby buses from the Central switchyard within 1 hour. This can be accomplished by opening both SL breakers or energizing both

9312080185 931130
PDR ADOCK 05000269
PDR

Printed on recycled paper



A001
11

standby buses by a Lee Combustion Turbine. When the standby buses are energized by a Lee Combustion Turbine, the 100kV transmission circuit shall be electrically separated from the system grid and all offsite loads. The 1 hour completion time is based on engineering judgement taking into consideration the availability of the 230kV switchyard, the infrequency of actual grid system voltage degradation, the low probability of simultaneous ES actuation and loss of the 230kV switchyard, and the time required to separate the standby buses from the Central switchyard.

If both channels of actuation logic or more than one voltage sensing relay is inoperable, then an LCO shall be entered that requires the separation of the standby buses from the Central switchyard within 1 hour. This can be accomplished by opening both SL breakers or energizing both standby buses by a Lee Combustion Turbine. When the standby buses are energized by a Lee Combustion Turbine, the 100kV transmission circuit shall be electrically separated from the system grid and all offsite loads. The 1 hour completion time is based on engineering judgement taking into consideration the availability of the 230kV switchyard, the infrequency of actual grid system voltage degradation, the low probability of simultaneous ES actuation and loss of the 230kV switchyard, and the time required to separate the standby buses from the Central switchyard.

Surveillance requirements shall consist of a channel test of the DGPS on a refueling frequency. The surveillance verifies the logic of the CT-5 DGPS. Test circuitry is used to demonstrate that indication of degraded voltage by any 2 of 3 voltage sensing relays will satisfy the actuation logic. Also, system continuity through the relays is verified by the installed monitoring circuitry. Verification of the timer setpoints is performed during this surveillance. Based on operating experience, the refueling frequency for this surveillance was determined to be adequate to ensure reliability without excessive equipment cycling for testing.

Two separate levels of undervoltage monitoring are provided for the DGPS. The first of these levels, which is the two-out-of-three arrangement, provides the annunciator alarm after a nine (9) second time delay. Also, the first level "arms" the SL1 and SL2 trip logic which results in immediate breaker tripping anytime the lower level setpoint is reached and the trip interlock defeat switches are positioned to the "Central" position. The higher level undervoltage setpoint is based on a value of .95pu (on a 102.5kV basis). This setpoint resolves to a 4160V bus voltage of 4171.29V. If CT-5 was supplying the main feeder buses and a LOCA/LOOP DBE were to occur, the setpoint voltage indicates a voltage level where bus voltage

Document Control Desk
Page 3
November 30, 1993

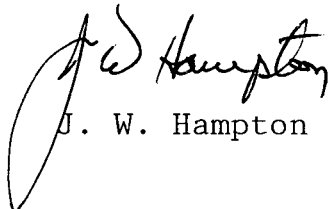
could decrease to values which threaten proper equipment operation.

The second level undervoltage protection trip, which is derived from a one-out-of-two relay arrangement, prevents equipment exposure to less than adequate voltage. The second level of undervoltage protection is based on a value of .9312pu (on a 102.5kV basis). This setpoint corresponds to a 4160V bus voltage of 3889.29V. If the higher level of protection has been at or below its setpoint for nine (9) seconds or longer, then the second level of protection actuates an automatic trip of the two SL breakers. This second level of protection is considered to be the logic which provides degraded grid protection to connected components when supplied from the 100kV system via the Central Tie Switchyard.

The Oconee electrical power system has been evaluated for many postulated events and conditions. Most of the calculations were performed using a Duke developed computer program. Verification of this analytical method via comparison between measured and calculated conditions have been performed and are documented in calculation OSC-1612. The comparison has shown the analytical methods to be valid. Also, the analytical method has been reviewed and determined to be acceptable by the NRC in the SER dated March 21, 1983 for the review of adequacy of Station Electric Distribution system voltages. The analysis documenting the adequacy of the Central degraded grid setpoints (calculation OSC-4513) was performed using the same analytical method that was validated in OSC-1612. As indicated above, the validity of the analytical method has been documented; therefore, no further measurements are deemed necessary.

For additional information, please contact Mark E. Patrick at (803) 885-3292 or Michael E. Bailey at (803) 885-4390.

Very truly yours,



J. W. Hampton

cc: Mr. S. D. Ebnetter, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II

Mr. L. A. Wiens, Project Manager
Office of Nuclear Reactor Regulation

Document Control Desk

Page 4

November 30, 1993

Mr. P. E. Harmon
Senior Resident Inspector
Oconee Nuclear Site