WISCONSIN PUBLIC SERVICE CORPORATION Kewaunee Nuclear Power Plant PLANT MODIFICATION/TEST PROCEDURE	NO. 1195-349 TITLE: 480V NORMAL FEEDER (CIRCUIT BREAKERS 13304) & PRESSURIZER HEATERS BACK-UP GROUP 1A DATE / PAGE 1-555 THRU 1-560

MWR # 40-21651

PREPARED BY Matthew R. Shemluck by DAO
Fluor Engineers Inc. Power Division

DATE 3-11-83

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TESTING ENGINEER David A. Ozarowicz (Signature) David A. Ozarowicz (Printed) DAO (Initials) DATE 5-1-83

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OPERATIONS SUPERINTENDENT _____ (Signature) CLARK STEINHARDT (Printed) 5-2-83 Date

PLANT MANAGER _____ (Signature) D. C. HINTZ (Printed) 5/2/83 Date

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REVIEWED BY: David A. Czarnecki AUD REVISED BY:	APPROVED BY

MWR # 40-2165)

1.0 PURPOSE/PLANT INITIAL CONDITIONS

1.1 Purpose

This test is performed to ensure proper operation of 480V Normal Feeder (Circuit Breaker 13304) for pressurizer backup group 1A, the ground detection circuit for MCC 3352 and to ensure proper operation of pressurizer heaters back-up group 1A 1-555 thru 1-560.

1.2 Initial Conditions

1.2.1 Verify installation procedure 1195-049 is complete. DAC

1.2.2 Verify bus 1-33 is energized. DAC

1.2.3 Plant is in shutdown. DAC

1.2.4 Pressurizer water level is above 20%. (N/A)

2.0 PRECAUTIONS

2.1 Kewaunee Nuclear Power Plant Tech Specs must be followed.

3.0 GENERAL INSTRUCTIONS

3.1 The following reference drawings should be available at time test is run:

3.1.1 Logics

237127A-E2039

3.1.2 Metering and Relaying/Circuit Diagrams

237127A-E228, E240, E262

3.1.3 Schematic Diagrams

237127A-E1070

3.1.4 Wiring Diagrams

237127A-E538, E621, E3139, E3173, E564

3.2 Test Equipment

3.2.1 Multimeter DAD

3.2.2 Phase rotation meter DAD

3.2.3 Amprobe DAD

3.2.4 1 jumper (NOTE: Jumpers should be obtained through normal plant procedures). DAD

3.3 Test Overview

3.3.1 Normal feeder for pressurizer heater backup group 1A and normal/alternate transfer will be cycled to verify 480V power is available at MCC 3552.

3.3.2 Phase leads will be shorted to ground and ground detection indicating lights and annunciater will be observed for proper operation.

3.3.3 MCC 3352 circuit breakers will be cycled and pressurizer heater current readings will be read and recorded.

3.3.4 Test personnel should be stationed at MCC 1-3352 and the control room and communication be established between them.

4.0 PROCEDURE

4.1 Shift Supervisor authorization to run pre-op test.

4.2 Test Setup

4.2.1 Trip all circuit breakers in MCC 1-3352. DAD

4.2.2 Transfer switch RD116 is in the normal source position. DAD

4.2.3 Obtain permission and have a control room operator temporarily lift the following Hold tags:

4.2.3.1 Control room ON/AUTO/OFF control switch for pressurizer HTR Backup Group 1A DAD

4.2.3.2 Auxiliary Feedwater Area Panel Normal Feeder for Pressurizer Heater Backup Group 1A Breaker No. 13304. DAD

4.2.3.3 At circuit Breaker 13304. DAD

4.3 Test

4.3.1 Turn the control room control switch for 480V normal feeder for pressurizer heater backup group 1A to the on position. (Indicator light near transfer switch RD116 for BRKR 1-3304 will light). DAO

4.3.2 Verify A, B, and C phase indicating lights are lit at ground panel RD117. DAO

4.3.3 Verify control room annunciator 4702245 does not alarm. DAO

4.3.4 Verify the NORMAL/ALTERNATE Indicator Lights mounted near the transfer switch RD116 is Lit for BRKR 1-3304. DAO

4.3.5 Read and record bus voltage at MCC 3352. ABØ 497 V, ACØ 495 V, BCØ 497 V

4.3.6 Verify all voltages read in step 4.3.5 are 480VAC ± 20V. DAO

1CDL

4.3.7 Close circuit breaker in cubicle 1CDL of MCC 1-3352. DAO

4.3.8 Verify A, B, and C phase indicating lights are lit at ground detector panel RD117. DAO

4.3.9 Verify control room annunciator 470245 does not alarm. DAO

4.3.10 Install an amprobe on wire 1-555L1 and record reading. (Reading should be 45 ± 3 amps). 45.9 AMPS DAO

4.3.11 Install an amprobe on wire 1-555L2 and record reading. (Reading should be 45 ± 3 amps). 46.0 AMPS DAO

4.3.12 Install an amprobe on wire 1-555L3 and record reading. (Reading should be 45 ± 3 amps). 46.2 AMPS DAO

4.3.13 Open Circuit Breaker in Cubicle 1CDL. DAO

AØ

CAUTION: If a phase other than the one being tested is grounded, closing the circuit breaker with the jumper installed will result in a phase to phase fault and the 1CDL breaker will trip.

4.3.14 Connect jumper from ground bus to Lug 1-555L1 (A phase) of circuit breaker in cubicle 1CDL in MCC 3352. DAD WMB

4.3.15 Q.C. verification of step 4.3.14. P&V

4.3.16 Close circuit breaker 1CDL in MCC 3352. DAD

4.3.17 Verify A phase indicating light is not lit at ground detector panel RD117. DAD

4.3.18 Verify B and C phase indicating lights are lit at ground detector pane RD117. DAD

4.3.19 Verify control room annunciator 4702245 alarms. DAD

4.3.20 Open circuit breaker and clear alarm. DAD

4.3.21 Remove jumper installed in step 4.3.14. DAD

4.3.22 Q.C. verification of step 4.3.21. P&V

BØ

4.43 Connect jumper from ground bus to Lug 1-555L2 (B phase) of circuit breaker in cubicle 1CDL in MCC 3352. DAD WMB

4.44 Q.C. verification of step 4.3.23. P&V

4.45 Close circuit breaker 1CDL in MCC 3352. DAD

4.46 Verify B phase indicating light is not lit at ground detector panel RD117. DAD

4.47 Verify A and C phase indicating lights are lit at ground detector panel RD117. DAD

4.48 Verify control room annunciator 4702245 alarms. DAD

4.49 Open circuit breaker and clear alarm. DAD

4.50 Remove jumper installed in step 4.3.32. DAD

4.51 Q.C. verification of step 4.3.39 P&V

CØ

4.3.32	Connect jumper from ground bus to Lug 1-555L3 (C phase) of circuit breaker in cubicle 1CDL in MCC 3352.	DAO WMB
4.3.33	Q.C. verification of step 4.52.	PHG
4.3.34	Close circuit breaker 1CDL in MCC 3352.	DAO
4.3.35	Verify C phase indicating light is not lit at ground detector panel RD117.	DAO
4.3.36	Verify A and B phase indicating lights are lit at ground detector panel RD117.	DAO
4.3.37	Verify control room annunciator 4702245 alarms.	DAO
4.3.38	Open circuit breaker and clear alarm.	DAO
4.3.39	Remove jumper installed in step 4.3.32	DAO
4.3.40	Q.C. verification of step 4.3.39	PHG

4.3.41	Using a phase rotation meter read and record the phase rotation at MCC 3352.	DAO
	PHASE ROTATION	ABC

1CDR

4.3.42	Close circuit breaker in cubicle 1CDR of MCC 1-3352.	DAO
4.3.43	At ground detector cabinet RD117 verify indicating lights for A, B, and C phases are lit.	DAO
4.3.44	Verify control room annunciator 4702245 does not alarm.	DAO
4.3.45	Install an amprobe on wire 1-556L1 and record reading. (Reading should be 45 $\pm$ 3 amps).	47.1 AMPS DAO
4.3.46	Install an amprobe on wire 1-556L2 and record reading. (Reading should be 45 $\pm$ 3 amps).	46.6 AMPS DAO
4.3.47	Install an amprobe on wire 1-556L3 and record reading. (Reading should be 45 $\pm$ 3 amps).	47.0 AMPS DAO
4.3.48	Open Circuit Breaker 1CDR.	DAO

1EFL

4.3.49	Close circut breaker in cubicle 1EFL of MCC 1-3352.	DAO
4.3.50	At ground detector cabinet RD117 verify indicating lights for A, B, and C phases are lit.	DAO
4.3.51	Verify control room annunciator 4702245 does not alarm.	DAO
4.3.52	Install an amprobe on wire 1-557L1 and record reading. (Reading should be 45 $\pm$ 3 amps).	45.9 AMPS DAO
4.3.53	Install an amprobe on wire 1-557L2 and record reading. (Reading should be 45 $\pm$ 3 amps).	46.2 AMPS DAO
4.3.54	Install an amprobe on wire 1-557L3 and record reading. (Reading should be 45 $\pm$ 3 amps).	46.2 AMPS DAO
4.3.55	Open Circuit Breaker 1EFL.	DAO

1EFR

4.3.56	Close circut breaker in cubicle 1EFR of MCC 1-3352.	DAO
4.3.57	At groun detector cabinet RD117 verify indicating lights for A, B, and C phases are lit.	DAO
4.3.58	Verify control room annunciator 4702245 does not alarm.	DAO
4.3.59	Install an amprobe on wire 1-558L1 and record reading. (Reading should be 45 $\pm$ 3 amps).	46.2 AMPS DAO
4.3.60	Install an amprobe on wire 1-558L2 and record reading. (Reading should be 45 $\pm$ 3 amps).	46.0 AMPS DAO
4.3.61	Install an amprobe on wire 1-558L3 and record reading. (Reading should be 45 $\pm$ 3 amps).	45.9 AMPS DAO
4.3.62	Open Circuit Breaker 1EFR.	DAO

1GHL

4.3.63 Close circuit breaker in cubicle 1GHL of MCC 1-3352. DAO

4.3.64 At ground detector cabinet RD117 verify indicating lights for A, B, and C phases are lit. DAO

4.3.65 Verify control room annunciator 4702245 does not alarm. DAO

4.3.66 Install an amprobe on wire 1-559L1 and record reading. (Reading should be 45 $\pm$ 3 amps). 46.4 AMPS DAO

4.3.67 Install an amprobe on wire 1-559L2 and record reading. (Reading should be 45 $\pm$ 3 amps). 46.6 AMPS DAO

4.3.68 Install an amprobe on wire 1-559L3 and record reading. (Reading should be 45 $\pm$ 3 amps). 45.3 AMPS DAO

4.3.69 Open Circuit Breaker 1GHL. DAO

1GHR

4.3.70 Close circuit breaker in cubicle 1GHR of MCC 1-3352. DAO

4.3.71 At ground detector cabinet RD117 verify indicating lights for A, B, and C phases are lit. DAO

4.3.72 Verify control room annunciator 4702245 does not alarm. DAO

4.3.73 Install an amprobe on wire 1-560L1 and record reading. (Reading should be 45 $\pm$ 3 amps). 45.9 AMPS DAO

4.3.74 Install an amprobe on wire 1-560L2 and record reading. (Reading should be 45 $\pm$ 3 amps). 45.4 AMPS DAO

4.3.75 Install an amprobe on wire 1-560L3 and record reading. (Reading should be 45 $\pm$ 3 amps). 45.3 AMPS DAO

4.3.76 Open Circuit Breaker 1GHL. DAO

4.3.77 Close all circuit breakers in MCC 3352. DAO

4.3.78 Verify A, B, and C phase indicating lights are lit at ground detector panel RD117. DAO

4.3.79 Verify control room annunciator 4702245 does not alarm. DAO

4.3.80 Trip all circuit breakers in MCC 1-3352. DAO

4.3.81 Turn the control room control switch for 480V normal feeder for pressurizer heater backup group 1A to the off position. DAO

4.3.82 Read and verify all bus voltages at MCC 3352 are zero volts AC.

ABØ 0 V
ACØ 0 V
BCØ 0 V
DAO

4.3.83 Verify the NORMAL/ALTERNATE Indicator light for BRKR 1-3304, mounted near the transfer switch RD116 is not lit. DAO

4.3.84 Position transfer switch RD116 to the alternate source position. DAO

4.3.85 Turn the control room control switch for 480V normal feeder for pressurizer heater backup group 1A to the on position. DAO

4.3.86 Read, record and verify all voltages at MCC 3352 are 0 VAC.

ABØ 0 V
ACØ 0 V
BCØ 0 V
DAO

4.3.87 Turn the control room control switch for 480V normal feeder for pressurizer heater backup group 1A to the off position. DAO

4.3.88 Return transfer switch RD16 to the normal source position.. DAO

Delete — DAO 5-1-83

4.3.89 ~~Have a control room operator replace the Hold tags lifted in step 4.2.3.~~ N/A

4.3.90 Test Engineer review the procedure to assure complete. DAO

5-01-83

4.3.91 Shift Supervisor acknowledgement of pre-op test completion. The 480V circuit breaker 13304 and pressurizer heater backup group 1A will be available for plant control at the completion of pre-op test 1195-350.

CRS 5-2-83

Persons In Test

Signature	Print Name	Company/Title	Initials
David A. Ozarowicz	David A. Ozarowicz	WPS/EE	DAO
	WILLIAM R. WAGNER	WPS/SS	WRW
Paul H. Van Den Heuvel	PAUL H VAN DEN HEUVEL	WPS/QC	PHVH
Wayne Bemis	Wayne Bemis	WPS/Elec.	WMB
Glenn W. Hoppe	Glenn W. Hoppe	WPS/Shift Supv.	GWH

Equipment Used

Type	Model Number		Serial Number	
Keithley	131 Digital Multimeter		92080	
Phase Sequence Indicator	Model 45	90-700V 60CPS	92029	K-406-2
Amprobe	Model ACD-2	848972	Co #92020	