

Date  
5-16-89

NUCLEAR OPERATIONS



Georgia Power

Unit 2

13427-2  
Revision No. 5  
Page No. 1 of 18

FOR INFORMATION ONLY

05-22-90

4160V AC 1E ELECTRICAL DISTRIBUTION SYSTEM

1.0 PURPOSE

This procedure provides the necessary instructions for energizing, operating and paralleling power sources of the 4160V AC 1E Electrical Distribution System. Instructions are included in the following sections:

- 4.1.1 Energizing 4160V Bus 2AA02(2BA03) From RAT
- 4.2.1 Paralleling Diesel Generator To 4160V Bus
- 4.2.2 Paralleling RAT To 4160V Bus Being Supplied From Diesel Generator
- 4.3.1 De-energizing 4160V Bus 2AA02(2BA03) When Supplied From RAT
- 4.4.1 Energizing 4160V Bus 2AA02(2BA03) From The Emergency Incoming Offsite Source
- 4.4.2 Feed Of 4160V 1E Switchgear 2AA02 (2BA03) Through The Emergency Incoming Breaker
- 4.4.3 Transferring 4160V Bus 2AA02(2BA03) From Emergency Incoming Offsite Source To Normal Incoming Offsite Source

2.0 PRECAUTIONS AND LIMITATIONS

2.1 PRECAUTIONS

During unit shutdown, (Modes 5 and 6, only), both Class 1E 4.16kV buses may be manually connected to the same offsite power source (RAT) by administrative control provided that all the Non-Class 1E buses (13.8 and 4.16kV) powered by that source are shed and the automatic bus transfer schemes are disabled.

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## 2.2 LIMITATIONS

- 2.2.1 The 4160V 1E electrical buses shall be energized in Modes 1 thru 4 per Technical Specification 3.8.3.1.
- 2.2.2 The 4160V 1E electrical buses shall be energized in Modes 5 and 6 per Technical Specification 3.8.3.2.
- 2.2.3 The incoming feeder breaker shall be closed while sync scope rotation is between the eleven and one o'clock positions on the sync scope.
- 2.2.4 When the Diesel Generator (DG) is in parallel with the offsite system, the kVAR should be maintained positive and no more than half of the kW load.

## 3.0 PREREQUISITES OR INITIAL CONDITIONS

- 3.1 The Reserve Auxiliary Transformers are energized.
- 3.2 125V DC electrical power is available to supply breaker control power.

## 4.0 INSTRUCTIONS

### 4.1 STARTUP

- 4.1.1 Energizing 4160V Bus 2AA02 (2BA03) From RAT
  - 4.1.1.1 ENSURE the Normal Incoming Breaker Transfer Control 2-HS-2AA0205B (2-HS-2BA0301B) is in the CONTROL ROOM position.
  - 4.1.1.2 If required, ALIGN the 4160V bus to be energized per the applicable section of 11427-2, "4160V AC 1E Electrical Distribution System Alignment".

### NOTE

Unless otherwise noted, all switch manipulations are to be performed at the Control Room Panel QEAB.

- 4.1.1.3 VERIFY the Bus 2AA02 (2BA03) Normal Incoming Voltage across all three phases to be approximately 4160V.
- 4.1.1.4 VERIFY the Bus 2AA02 (2BA03) Voltage across all three phases to be approximately zero volts.
- 4.1.1.5 PLACE the Breaker 2AA0205 (2BA0301) Synchronization Switch to ON.

- 4.1.1.6 CLOSE the NORM INCM BRKR 2AA0205 (2BA0301).
- 4.1.1.7 If Diesel Generator Output Breaker did not close on a bus loss of power and offsite power is available, then at the Sequencer Manual Test Cabinet momentarily DEPRESS the Sequencer Reset Pushbutton.
- 4.1.1.8 VERIFY the white potential lights are illuminated for Switchgear 2AA02 (2BA03).
- 4.1.1.9 VERIFY the Bus 2AA02 (2BA03) Voltage across all three phases to be approximately 4160V; independent verification required.
- 4.1.1.10 PLACE the Breaker 2AA0205 (2BA0301) Synchronization Switch to OFF.
- 4.1.1.11 At the switchgear, RESET the applicable relay targets.

## CAUTION

When the Sequencer is energized, a voltage transient on 120V AC Panel 2AY2A (2BY2B) will occur which may:

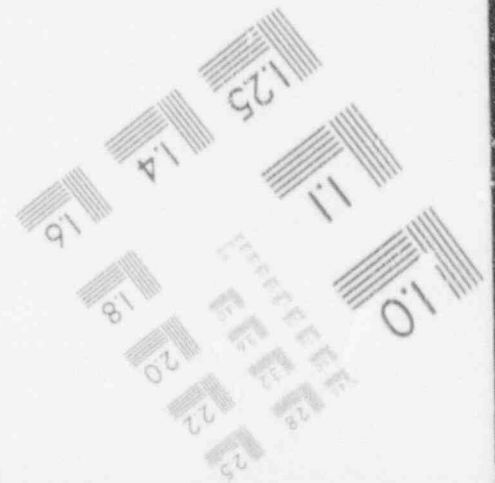
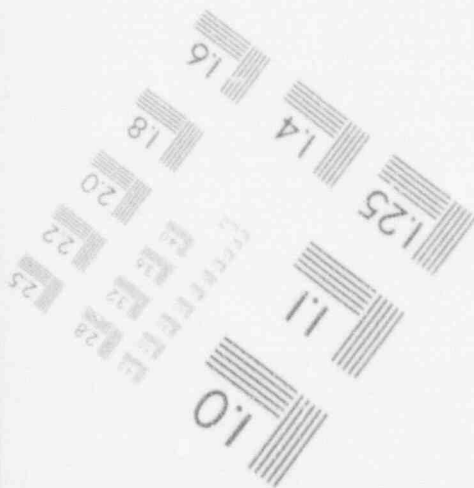
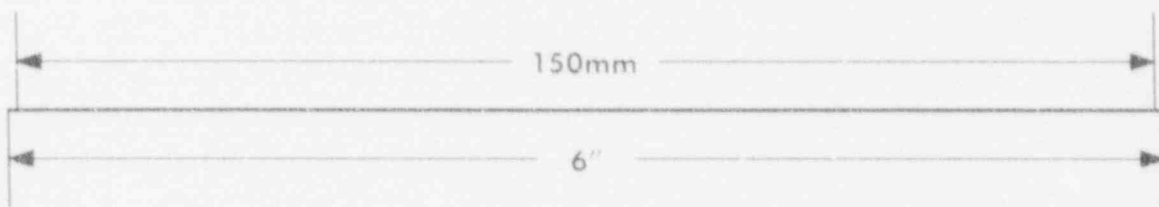
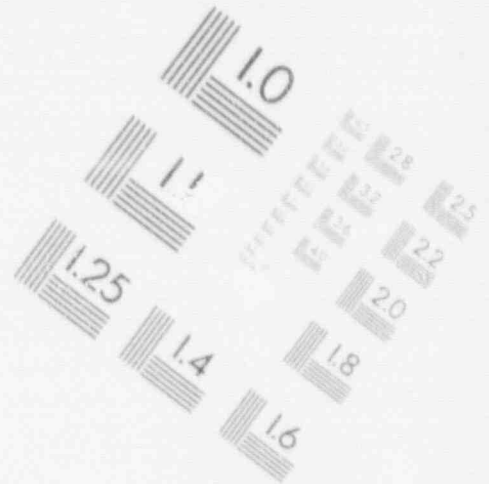
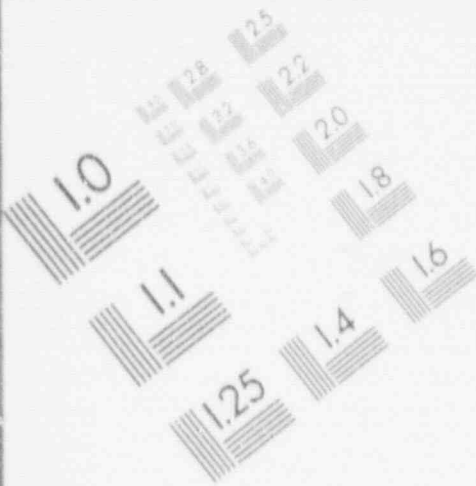
- a. actuate Containment Ventilation Isolation (CVI) initiated by RE-0002 (RE-0003).
  - b. actuate Control Room Isolation (CRI) initiated by RE-12116 (RE-12117) and Fuel Handling Building Isolation (FHBI) actuated by RE-2532 (RE-2533) unless blocked per Checklist 1.
- 4.1.1.12 If required, ENERGIZE Sequencer A (B) as follows:
- a. PERFORM Steps 1 and 2 of Checklist 1,
  - b. In the manual test cabinet, PLACE the Sequencer Power Switch to ON,
  - c. ALLOW the sequencer circuits to charge for 10 seconds,
  - d. If not running, in the card rack cabinet, RESET the ATI-1 Module,
  - e. If the ATI-1 Module is not stepping, REPEAT Step 4.1.1.12c,

- f. In the card rack cabinet, DEPRESS the illuminated card reset lights to reset the Undervoltage Bistable Cards,
  - g. In the manual test cabinet, DEPRESS the Undervoltage Alarm Light to reset the Undervoltage Alarm,
  - h. In the manual test cabinet, DEPRESS the Logic Failure Alarm Light to reset the Sequencer Logic Failure Alarm,
  - i. COMPLETE Checklist 1,
  - j. If an ESFAS actuation occurred, INITIATE 11886-2, "Recovery From ESF Actuation".
- 4.1.1.13 If required, PREPARE Diesel Generator 2A (2B) for automatic operation per 13145-2, "Diesel Generators".
- 4.1.1.14 If required, RESTORE power to the following switchgear:
- a. Train A
    - (1) 2AA02-10 FDR TO SWGR 2AB15,
    - (2) 2AA02-21 FDR TO SWGR 2AB05,
    - (3) 2AA02-20 FDR TO SWGR 2AB04,
    - (4) 2AA02-22 FDR TO SWGR 2NB01.
  - b. Train B
    - (1) 2BA03-18 FDR TO SWGR 2NB10,
    - (2) 2BA03-06 FDR TO SWGR 2BB06,
    - (3) 2BA03-04 FDR TO SWGR 2BB07,
    - (4) 2BA03-09 FDR TO SWGR 2BB16.



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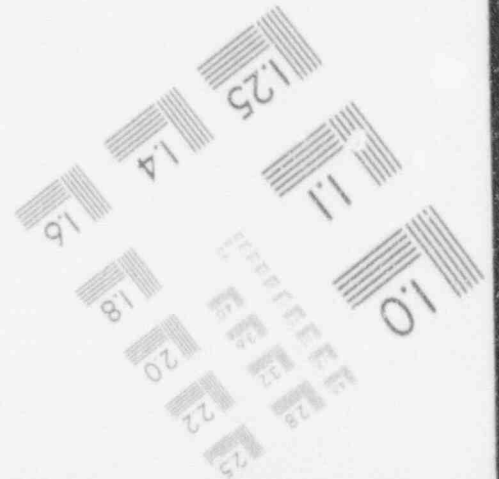
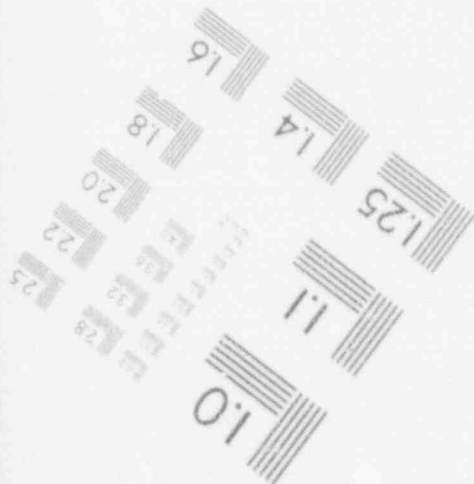
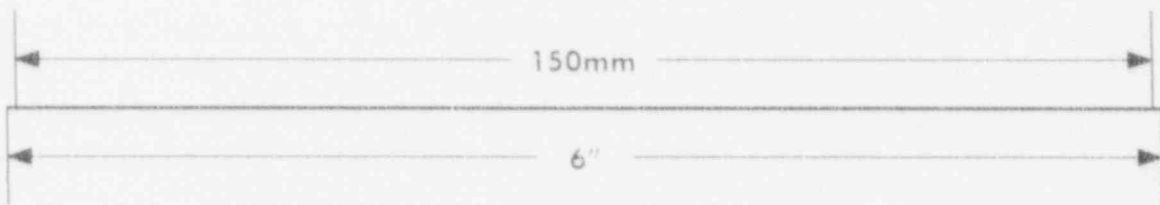
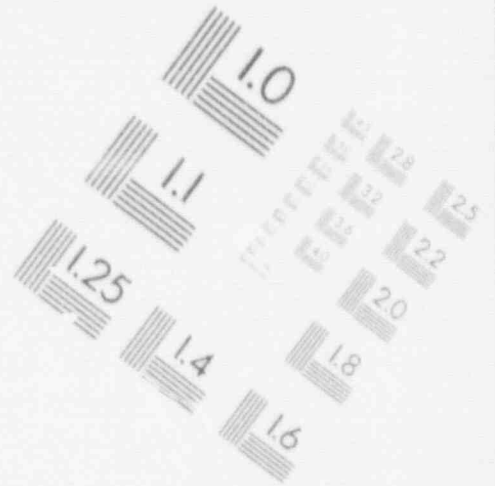
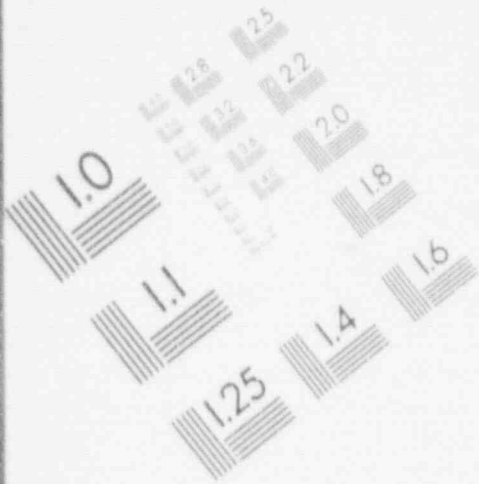
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770 BASKET ROAD  
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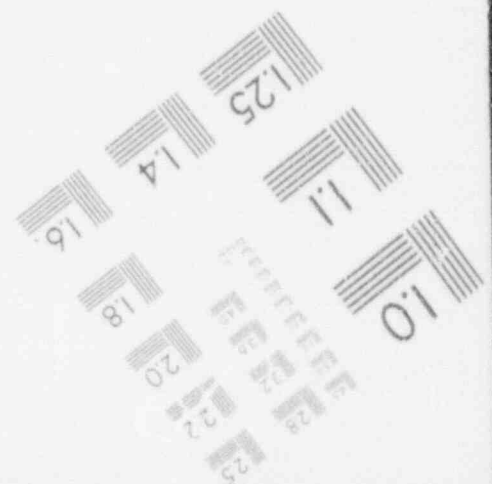
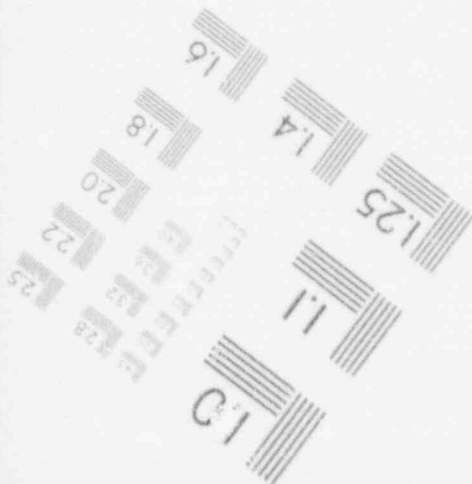
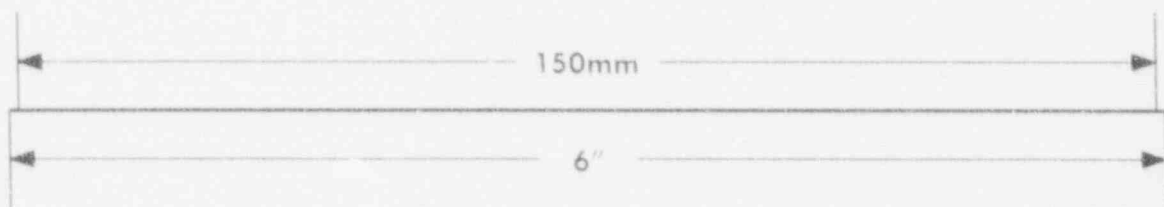
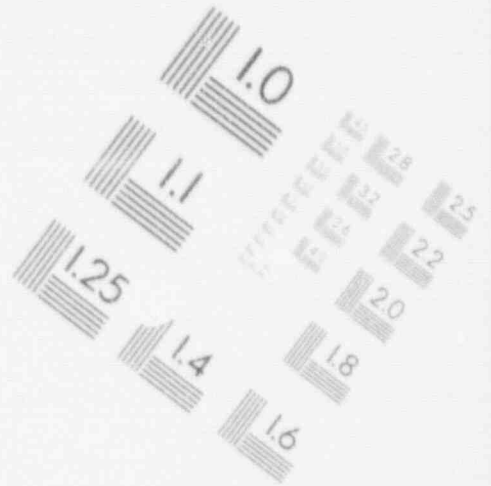
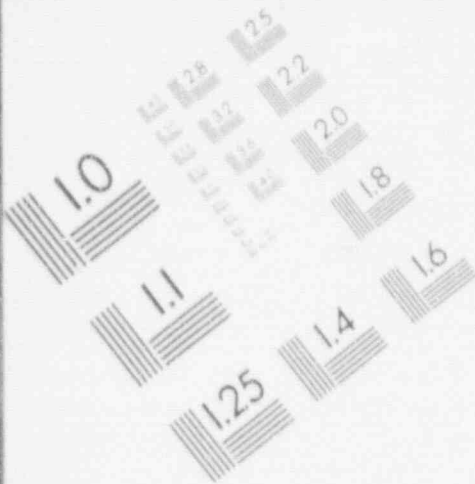
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## 4.2 SYSTEM OPERATION

## 4.2.1 Paralleling Diesel Generator To 4160V Bus

## CAUTION

Never transfer the Local-Remote Switch 2-HS-4516 (4517) on PDG1 (3) to LOCAL position while the Diesel Generator is being operated in the Parallel mode as this will take governor and voltage regulator out of the droop mode.

- 4.2.1.1 DISPATCH an operator to locally monitor Diesel Generator 2A (2B) during startup and loading.
- 4.2.1.2 START Diesel Generator 2A (2B) from the Control Room per 13145-2, "Diesel Generators".

## NOTE

Unless otherwise noted, all switch manipulations are to be performed at the Control Room Panel QEAB.

- 4.2.1.3 ENSURE the Diesel Generator 2A (2B) Sync Mode Selector Switch TS-DG2A (TS-DG2B) is in AUTO.
- 4.2.1.4 PLACE the Breaker 2AA0219 (2BA0319) Synchronization Switch to ON.
- 4.2.1.5 Momentarily PLACE the Unit/Parallel Switch 2-HS-4414B (2-HS-4452B) to PARALLEL and OBSERVE that the DROOP MODE light is on.
- 4.2.1.6 OBSERVE 4160V Bus 2AA02 (2BA03) voltage on the RUNNING Voltmeter and Diesel Generator 2A (2B) voltage on the INCOMING Voltmeter.
- 4.2.1.7 VERIFY that the Sync Scope Meter is rotating and that the Synchronizing Lights are bright at the 6 o'clock position and dark at the 12 o'clock position.
- 4.2.1.8 ADJUST generator voltage as necessary to slightly lead the bus voltage (maximum of 50V).
- 4.2.1.9 While observing the Sync Scope, ADJUST the generator speed until the Sync Scope needle is rotating slowly in the clockwise (FAST) direction (8 to 10 second rotation). The SYNC PERMISSIVE red light should come on near the 12 o'clock position.



- 4.2.1.10 When the Sync Scope needle reaches the 11 o'clock position, DEPRESS and HOLD the Diesel Generator 2A (2B) Auto Sync Permissive Pushbutton: PB-DG2A (PB-DG2B).
- 4.2.1.11 VERIFY that the DG2A (2B) OUTPUT BRKR 2AA0219 (2BA0319) closes when the Sync Scope reaches the 12 o'clock position.
- 4.2.1.12 ADJUST generator load using the Speed Control Pushbuttons until 1000kW is indicated on the KW Meter.
- 4.2.1.13 ADJUST generator voltage slightly to MAINTAIN generator kVAR Meter positive and above zero.
- 4.2.1.14 PLACE the Breaker 2AA0219 (2BA0319) Synchronization Switch to OFF.

## NOTE

The Diesel Generator is now paralleled with the preferred normal power source.

- 4.2.1.15 RECORD Diesel Generator data required in 11885-C, "Diesel Generator Operating Log".
- 4.2.1.16 If desired, CONTINUE parallel operation of the Diesel Generator and the Normal Incoming power source.

## NOTES

- a. If continued paralleled operation and loading of the Diesel Generator is to be performed, the Generator should be step loaded in increments of approximately 1000 kW and 500 kVAR in time increments of 3 - 4 minutes between load changes.
- b. As the generator voltage is adjusted, the kVAR should be maintained positive and no more than half of the kW load.
- 4.2.1.17 IF desired, DISCONTINUE parallel operation by removing the Normal Incoming power source from the bus as follows:

## NOTES

- a. As generator load is adjusted in the following step, generator voltage should be adjusted concurrently to maintain positive kVAR and no more than half of the kW load.

- b. The generator should be unloaded in increments of approximately 1000 kW and 500 kVAR in time increments of 3 - 4 minutes between load changes.
  - a. While observing 4160V Bus 2AA02 (2BA03) Ammeter, slowly ADJUST Diesel Generator 2A (2B) load until the Bus Ammeter reads zero,
  - b. TRIP the NORM INCM BRKR 2AA0205 (2BA0301),
  - c. ADJUST the Diesel Generator Voltage and Speed to maintain 4160 Volts and 60 Hertz.
- 4.2.1.18 If desired, DISCONTINUE parallel operation by removing the Diesel Generator from the bus as follows.

## NOTE

As generator load is reduced in the following step, generator voltage should be adjusted concurrently to maintain a minimum positive kVAR.

- a. REDUCE the Diesel Generator 2A (2B) load to 200kW,
  - b. TRIP the DG 2A (2B) OUTPUT BRKR 2AA0219 (2BA0319),
  - c. STOP Diesel Generator 2A (2B) per 13145-2, "Diesel Generator".
- 4.2.2 Paralleling RAT To 4160V Bus Being Supplied From Diesel Generator

## NOTE

The following steps assume that the 4160V Class 1E Bus is being supplied solely by its respective Diesel Generator.

- 4.2.2.1 PLACE the Breaker 2AA0205 (2BA0301) Synchronization Switch to ON.
- 4.2.2.2 OBSERVE the RAT 2NXRA (2NXRB) Secondary Voltage on the INCOMING Voltmeter and 4160V Bus 2AA02 (2BA03) Voltage on the RUNNING Voltmeter.
- 4.2.2.3 VERIFY that the Sync Scope needle is rotating and that the Synchronizing Lights are bright at the 6 o'clock position and dark at the 12 o'clock position.

## CAUTION

The Diesel Generator speed and frequency will drop about 1 to 1.5 Hertz when the Unit/Parallel Switch is taken to PARALLEL in the following step. The operator should be ready to adjust Diesel Generator speed as necessary to prevent tripping the Diesel Generator on underfrequency.

- 4.2.2.4 If in UNIT mode CHANGE the Diesel Generator mode of operation from UNIT to PARALLEL as follows:
- RAISE the Diesel Generator 2A (2B) speed to approximately 61 Hertz,
  - PLACE the Diesel Generator 2A (2B) Unit/Parallel Switch 2-HS-4414B (4452B) momentarily to PARALLEL and OBSERVE that the DROOP MODE Light is on.
  - ADJUST Diesel Generator speed to  $60 \pm 0.2$  Hertz using the Diesel Generator 2A (2B) Speed Control.
- 4.2.2.5 Using the Diesel Generator 2A (2B) Voltage Control Pushbutton ADJUST generator voltage until it is slightly higher than the transformer secondary voltage.

## NOTE

Since transformer secondary frequency cannot be adjusted, the following steps will change the Diesel Generator speed to match the frequency with the transformer secondary.

- 4.2.2.6 While observing the Sync Scope, ADJUST Diesel Generator speed using the Diesel Generator 2A (2B) Speed Control Pushbuttons until the Sync Scope needle is rotating slowly in a counterclockwise (SLOW) direction (8 to 10 second rotation).
- 4.2.2.7 When the Sync Scope needle reaches 12 o'clock, CLOSE the Preferred Normal Incoming Breaker 2AA0205 (2BA0301); independent verification required.
- 4.2.2.8 RECORD Diesel Generator data required in 11885-C, "Diesel Generator Operating Log".

## NOTE

As generator load is reduced in the following step, generator voltage should be adjusted concurrently to maintain a minimum positive kVAR.

- 4.2.2.9 REDUCE the Diesel Generator 2A (2B) load to 200kW.
- 4.2.2.10 TRIP the DG 2A (2B) OUTPUT BRKR 2AA0219 (2BA0319).
- 4.2.2.11 STOP the Diesel Generator 2A (2B) per 13145-2, "Diesel Generators".
- 4.2.2.12 PLACE the Breaker 2AA0205 (2BA0301) Synchronization Switch to OFF.
- 4.2.2.13 PREPARE Diesel Generator 2A (2B) for automatic operation per 13145-2, "Diesel Generators".
- 4.3 SHUTDOWN
  - 4.3.1 De-energizing 4160V 2AA02 (2BA03) Bus When Supplied From RAT
    - 4.3.1.1 VERIFY the Unit is in Mode 5 or 6 prior to de-energizing a 4160V 1E Bus.
    - 4.3.1.2 REVIEW the equipment loads that are powered from the switchgear.
    - 4.3.1.3 DETERMINE which systems are required to be operating to support current plant conditions.
    - 4.3.1.4 SHIFT the operation of those systems to components powered from an alternate source per the applicable system operating procedure.
    - 4.3.1.5 SHUT DOWN the equipment of systems not essential for current plant operating conditions.
    - 4.3.1.6 VERIFY the breakers, associated with the bus to be de-energized, identified in Table 1 are OPEN.
    - 4.3.1.7 PLACE the Local/Remote Switch 2-HS-4516 (4517) at PDG1 (3) in the LOCAL position.
    - 4.3.1.8 DEPRESS the Diesel Generator 2A (2B) Maintenance Mode Pushbutton 2-HS-4577 (4578) at the Diesel Generator 2A (2B) Engine Control Panel PDG2 (4).



- 4.3.1.9 PLACE the DG 2A (2B) OUTPUT BRKR 2AA0219 (2BA0319) to PULL TO LOCK.

CAUTION

The associated sequencer panel should be removed from service prior to de-energizing the 4160V bus to prevent an undervoltage signal from locking in when the bus is returned to service.

- 4.3.1.10 DE-ENERGIZE the Sequencer A (B) by placing the Sequencer Power Switch to OFF.
- 4.3.1.11 TRIP the NORM INCM BRKR 2AA0205 (2BA0301).
- 4.3.1.12 VERIFY the Bus 2AA02 (2BA03) Voltage across all three phases to be approximately zero volts.
- 4.4 NON PERIODIC OPERATION
- 4.4.1 Energizing 4160V Bus 2AA02 (2BA03) From The Emergency Incoming Offsite Source

NOTE

Sub-subsection 4.4.1 of this procedure shall be performed only if the preferred normal power source, the standby power source and the redundant 1E 4160V bus are all lost simultaneously.

- 4.4.1.1 OBTAIN permission from the OSOS to energize the bus from the preferred alternate source.
- 4.4.1.2 RACK-OUT the NORM INCM BRKR 2AA0205 (2BA0301).
- 4.4.1.3 TRANSFER the circuit breaker to the Emergency Incoming Breaker Cubicle.
- 4.4.1.4 RACK-IN the EMERGENCY INCOMING BRKR 2AA0201 (2BA0305).
- 4.4.1.5 PLACE the Breaker 2AA0201 (2BA0305) Synchronization Switch to ON.
- 4.4.1.6 CLOSE the EMERGENCY INCOMING BRKR 2AA0201 (2BA0305).
- 4.4.1.7 VERIFY the white potential lights are illuminated for switchgear 2AA02 (2BA03).
- 4.4.1.8 VERIFY the Bus 2AA02 (2BA03) Voltage across all three phases to be approximately 4160V; independent verification required.
- 4.4.1.9 PLACE the Breaker 2AA0201 (2BA0305) Synchronization Switch to OFF.
- 4.4.1.10 At the switchgear, RESET the applicable relay targets.

4.4.2 Feed Of 4160V 1E Switchgear 2AA02 (2BA03) Through The  
Emergency Incoming Breaker

CAUTIONS

- a. The Unit is in Mode 5 or 6 and only one circuit of Offsite Electrical Power Source and one Class 1E Standby Power Source is required per Technical Specification 3.8.1.2.
- b. To prevent automatic transfer of the Non-Class 1E 4160V and 13.8kV busses to the energized Reserve Auxiliary Transformer (RAT), the associated Bus Feeder Breakers on the Non-Class 1E 4160V and 13.8kV busses will be racked out and tagged under a clearance.

NOTES

- a. This sub-subsection provides instructions for feeding the 4160V Class 1E Switchgear from the Alternate Reserve Auxiliary Transformer using the Emergency Incoming Breaker.
- b. This method of feeding the 4160V 1E Class Switchgear parallels both 4160V Class 1E Busses on to the same RAT, without interruption of power to the 4160V Bus.
- c. The maximum load allowed on a RAT is as follows:
  - (1) Primary windings rated at 67,200kVA at 65°C rise.
  - (2) Secondary windings (13.8kV) rated at 39,200kVA at 65°C rise.
  - (3) Secondary windings (4160V) rated at 28,000kVA at 65°C rise.

- d. Station service loads of the 13.8kV and 4160V Non-1E Buses are being fed from the Main Step-up Transformer through the Unit Auxiliary Transformers per 13417-2, "Main And Unit Auxiliary Transformer Backfeed To The 2NA and 2NAO Buses".
- 4.4.2.1 ENSURE that the following Non-class 1E 4160V and 13.8kV Breaker(s) are open and tagged under a clearance from the RAT that is to feed both Class 1E 4160V Buses:
- a. RAT 2NXRA, Breakers 2NA0101 and 2NA0501,
  - b. RAT 2NXRA, Breaker 2NAA01,
  - c. RAT 2NXRB, Breaker 2NA0401,
  - d. RAT 2NXRB, Breaker 2NAB01.
- 4.4.2.2 SYNCHRONIZE the Diesel Generator Train A (B) to the 4160V Class 1E Bus to be fed from the Emergency Incoming Breaker per Sub-subsection 4.2.1 of this procedure.
- 4.4.2.3 DISCONTINUE parallel operation by opening the Preferred Normal Incoming Breaker per Sub-subsection 4.2.1 of this procedure.
- 4.4.2.4 RACK-OUT the NORM INCM BRKR 2AA0205 (2BA0301) per 13435-C, "Circuit Breaker Racking Procedure".
- 4.4.2.5 REMOVE the 4160V Breaker from Compartment 2AA0205 (2BA0301) and PLACE in Compartment 2AA0201 (2BA0305).
- 4.4.2.6 RACK-IN the breaker in Compartment 2AA0201 (2BA0305) per 13435-C, "Circuit Breaker Racking Procedure".
- 4.4.2.7 VERIFY the following:
- a. The green light is lit and the amber light is out on 2-HS-2AA0201 (2-HS-2BA0305),
  - b. The Transfer Control Switch located on the associated 4160V Class 1E Switchgear is in the CONTROL ROOM position on 2AA0201 (2BA0305).



## NOTE

The following step will require substituting the Emergency Incoming Feeder Breaker 2AA0201 (2BA0305) for the Normal Incoming Feeder Breaker 2AA0205 (2BA0301).

- 4.4.2.8 SYNCHRONIZE the RAT INXRA (2NXRB) to the 4160V Bus 2AA02 (2BA03) being supplied from the Diesel Generator per Sub-subsection 4.2.2 of this procedure.
- 4.4.2.9 OBSERVE loading on the RAT supplying the Train A and Train B 4160V Class 1E Buses to be within the limits of Note c above.
- 4.4.3 Transferring 4160V Bus 2AA02 (2BA03) From Emergency Incoming Offsite Source To Normal Incoming Offsite Source
- 4.4.3.1 TRANSFER the 4160V Bus 2AA02 (2BA03) from RAT 2NXRB (2NXRA) to the Diesel Generator 2A (2B) per Sub-subsection 4.2.1 Steps 4.2.1.1 through 4.2.1.14 of this procedure.

## NOTE

As the generator load is raised in the following step, generator voltage should be adjusted concurrently to maintain positive kVAR.

- 4.4.3.2 While observing 4160V Bus 2AA02 (2BA03) Ammeter, slowly ADJUST the Diesel Generator 2A (2B) load until the Bus Ammeter reads zero.
- 4.4.3.3 TRIP the EMERGENCY INCOMING BRKR 2AA0201 (2BA0305).
- 4.4.3.4 ADJUST generator voltage to maintain 4160 Volts.
- 4.4.3.5 ADJUST Diesel Generator speed to maintain 60 Hertz.
- 4.4.3.6 RACK-OUT the EMERGENCY INCOMING BRKR 2AA0201 (2BA0305).
- 4.4.3.7 TRANSFER the circuit breaker to the Normal Incoming Feeder Breaker Cubicle.
- 4.4.3.8 RACK-IN the NORM INCM BRKR 2AA0205 (2BA0301) per 13415-C, "Circuit Breaker Racking Procedure".

- 4.4.3.9 TRANSFER the 4160V Bus 2AA02 (2BA03) from Diesel Generator 2A (2B) to RAT 2NXRA (2NXRB) per Sub-subsection 4.2.2 of this procedure.

## NOTE

The 4160V 1E Bus is now in its normal electrical alignment.

## 5.0

REFERENCES

## 5.1

## ONE LINE DIAGRAMS

- 5.1.1 2X3D-AA-A01A MAIN ONE LINE UNIT 2  
 5.1.2 2X3D-AA-B05A UNIT AUX SYSTEM SYNCHRONIZATION  
 5.1.3 2X3D-AA-D02A 4160V SWGR 2AA02  
 5.1.4 2X3D-AA-D02B 4160V SWGR 2AA02  
 5.1.5 2X3D-AA-D03A 4160V SWGR 2BA03  
 5.1.6 2X3D-AA-D03B 4160V SWGR 2BA03

## 5.2

## ELEMENTARY DIAGRAMS

- 5.2.1 2X3D-BA-D02B 4160V SWGR 2AA02 NORM INC BKR  
 5.2.2 2X3D-BA-D02C 4160V SWGR 2AA02 EMERGENCY INC BKR  
 5.2.3 2X3D-BA-D02D 4160V SWGR 2AA02 DG 1A OUTPUT BKR  
 5.2.4 2X3D-BA-D02E 4160V SWGR 2AA02 P.T. CUBICLE  
 5.2.5 2X3D-BA-D03B 4160V SWGR 2BA03 NORM INC BKR  
 5.2.6 2X3D-BA-D03C 4160V SWGR 2BA03 EMERGENCY INC BKR  
 5.2.7 2X3D-BA-D03D 4160V SWGR 2BA03 DG 1B OUTPUT BKR  
 5.2.8 2X3D-BA-D03E 4160V SWGR 2BA03 P.T. CUBICLE

## 5.3

## LOGIC DIAGRAMS

- 5.3.1 2X3D-BA-X03A 4160V SWGR CLASS 1E BKR  
 5.3.2 2X3D-BA-X03B 4160V SWGR UNDERVOLTAGE DETECTION  
 5.3.3 2X3D-BA-X09A 4160V SWGR EMER CLASS 1E BKR

- 5.4 FSAR SECTION 8.3
- 5.5 TECHNICAL SPECIFICATIONS 3.8.1 AND 3.8.3
- 5.6 PROCEDURES
- 5.6.1 11427-2 "4160V AC 1E Electrical Distribution  
Alignment For Startup And Normal  
Operation"
- 5.6.2 13145-2 "Diesel Generators"

END OF PROCEDURE TEXT

TABLE 1

## 4160V AC 1E SWITCHGEAR LOAD LIST

1. BUS 2AA02
- 2AA02-03 COMPONENT COOLING WTR PMP MTR P4-001
  - 2AA02-04 NUCLEAR SERVICE COOLING WTR PMP MTR P4-001
  - 2AA02-06 CTB ESF CHILLER MTR C7-001
  - 2AA02-07 COMPONENT COOLING WTR PMP MTR P4-003
  - 2AA02-08 NUCLEAR SERVICE COOLING WTR PMP MTR P4-003
  - 2AA02-09 RHR PMP MTR P6-001
  - 2AA02-11 SPARE COMPONENT COOLING WTR PMP MTR P4-005
  - 2AA02-12 SPARE NUCLEAR SERVICE COOLING WTR PMP MTR P4-005
  - 2AA02-13 CVCS CENTRIFUGAL CHARGING PMP MTR P6-002
  - 2AA02-14 CTB SPRAY PMP MTR P6-001
  - 2AA02-15 AUX COMPONENT COOLING WATER PMP MTR P4-001
  - 2AA02-16 SAFETY INJECTION PMP MTR P6-003
  - 2AA02-17 AUX FEED WTR PMP MTR P4-003
2. BUS 2BA03
- 2BA03-07 NUCLEAR SERVICE COOLING WTR PMP MTR P4-002
  - 2BA03-08 COMPONENT COOLING WTR PMP MTR P4-002
  - 2BA03-10 RHR PMP MTR P6-002
  - 2BA03-11 NUCLEAR SERVICE COOLING WTR PMP MTR P4-004
  - 2BA03-12 COMPONENT COOLING WTR PMP MTR P4-004
  - 2BA03-13 CVCS CENTRIFUGAL CHARGING PMP MTR P6-003
  - 2BA03-14 CTB SPRAY PMP MTR P6-002
  - 2BA03-15 SPARE NUCLEAR SERVICE COOLING WTR PMP MTR P4-006
  - 2BA03-16 SPARE COMPONENT COOLING WTR PMP MTR P4-006
  - 2BA03-17 SAFETY INJECTION PMP MTR P6-004
  - 2BA03-20 SPARE AUX. COMPONENT COOLING WTR PMP MTR P4-002
  - 2BA03-21 AUX FEED WTR PMP MTR P4-002
  - 2BA03-22 CTB ESF CHILLER MTR C7-002



## CHECKLIST 1

## Sequencer A(B) Energization

## NOTES

- a. This checklist is written for Sequencer A. Handswitches for Sequencer B are in parenthesis.
  - b. The handswitches are located at Panel QESF.
  - c. An LCO action should be entered when removing ESFAS equipment from service.
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1. To block Control Room isolation, PLACE Control Switch 2-HS-12195C to TEST/BLOCK:
    - a. For Seq A PLACE to TEST/BLOCK CHAN I,
    - b. For Seq B PLACE to TEST/BLOCK CHAN II.
  2. To block Fuel Handling Building isolation, PLACE Control Switch A-HS-2532C to TEST BLOCK.
    - a. For Seq A PLACE to TEST/BLOCK CHAN I,
    - b. For Seq B PLACE to TEST/BLOCK CHAN II.
  3. When the sequencer has been re-energized, NOTIFY Chemistry to reset the Radiation Monitors 2-RE-0002 (2-RE-0003), 2-RE-2532 (2-RE-2533) and 2-RE-12116 (2-RE-12117).
  4. When notified that the Radiation Monitors have been restored and no high radiation alarms exist,
    - a. PLACE 2-HS-12195C to OFF. Independent verification required,
    - b. PLACE A-HS-2532C to BLOCK LOW PRESS. Independent verification required.