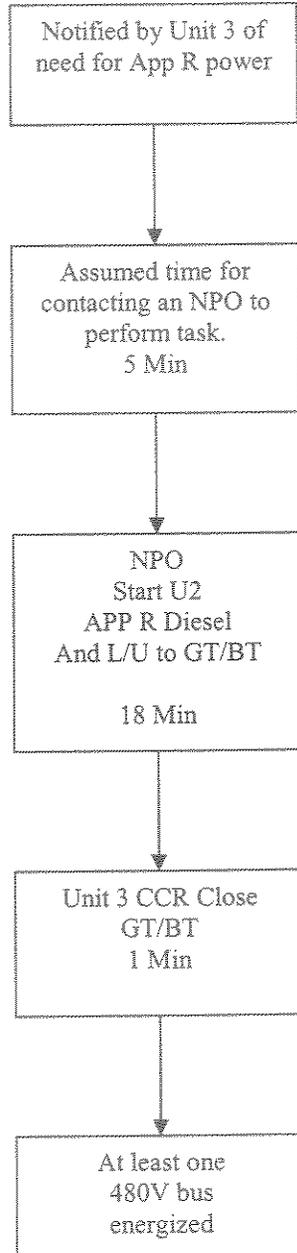


Unit 3 SBO Event:
Time line to energize Unit 3
Bus from App R diesel via
GT/BT

Operator simulated walkthrough
times as indicated

Total time is 24 minutes.

Unit 3 is assumed to be racking in
GT/BT in parallel to Unit 2 steps
and the breaker will be ready to
close when U2 App R power is
available.



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4.6.10.1 UW-854

4.6.10.2 UW-855

4.6.11 ENSURE the door opened in Step 4.5.2.3 is CLOSED.

4.6.12 ENSURE the Lube Oil Supply Reservoir is refilled with the proper grade of oil. (SAE 15W – 40)

4.6.13 TURN the 0/MANUAL/AUTO switch to the AUTO position.

4.7 Engine Start (Supply Unit 3 SBO / ASS Loads)

NOTE

- This section is written for emergency operation. If one of the steps can NOT be met the Supervisor in charge must evaluate continued action.
- If DC control power is not available for breaker operation, breakers may be operated manually using Section 4.9, Manual Breaker and Transfer Switch Operation.
- The starting of the Appendix R DG should not be delayed.
- SO Phone Number: (212) 580-6789
- DO Phone Number: (212) 580-6754

NOTE

- Opening The Tool Room Roll up door may affect Centac operation. CCR permission is required prior to opening the Tool Room Roll-up door.
- The design maximum temperatures for the Unit 2 Appendix R DG are:
104 °F for the electrical distribution equipment
122 °F for the Diesel Generator air intake

4.7.1 PERFORM the following as necessary to prevent exceeding design maximum temperatures:

4.7.1.1 ENSURE the Delay Gate is Closed

Ø 4.7.1.2 IF the Tool Room Roll-up door will be opened, THEN REQUEST permission from the CCR to open the Tool Room Roll-up door.

Ø 4.7.1.3 ENSURE one of the following is Open:

- MA • The Maintenance Loading Bay overhead door (15' Elevation)
- Ø • Tool Room Roll-up door (15 'Elevation)

Ø 4.7.2 ENSURE the following Appendix R Diesel Generator Fuel Oil Day Tank Indications are Illuminated:

- Ø • System Ready Yellow LED flashing
- Ø • Power Available Green LED illuminated

Ø 4.7.2.1 CHECK NO abnormal condition exists as indicated by a LED in a flashing ON state and horn sounding.

Ø 4.7.3 ENSURE that breaker SBO/ASS is OPEN. (SBO/APP R Diesel Generator Switchgear)

3 min Ø 4.7.4 ENSURE that breaker ASS is OPEN. (SBO/APP. R Switchgear 13.8KV Bus)

Ø 4.7.5 ENSURE that breaker GT/25 is OPEN.

Ø 4.7.6 ENSURE that breaker GT/26 is OPEN.

Ø 4.7.7 ENSURE that breaker GT/BT is OPEN.

Ø 4.7.8 CLOSE breaker OSP.

Ø 4.7.9 CLOSE breaker SBOL.

Ø 4.7.10 CLOSE breaker SBOH.

Ø 4.7.11 ENSURE the following at the Appendix R DG Switch Panel (Control Panel):

Ø 4.7.11.1 Shutdown Status indicator – Extinguished

Ø 4.7.11.2 Warning Status indicator – Extinguished

Ø 4.7.12 PLACE the UNIT-PARALLEL switch in UNIT. (SBO/ APP R Switchgear 13.8KV Bus)

Ø 4.7.13 At the Appendix R DG Switch Panel (Control Panel) PRESS and HOLD the Panel Lamp/Lamp Test button for at least 3 Seconds

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- 0 4.7.13.1 CHECK all control panel LEDs illuminate
- 0 4.7.13.2 RELEASE Panel Lamp/Lamp Test button
- 0 4.7.14 IF City Water will be the cooling source, THEN ALIGN City Water to The Appendix R DG as follows:
- 0 4.7.14.1 OPEN the following:
- 0 a) UW-854
- 0 b) UW-855
- 0 4.7.14.2 ADJUST Cooling Water flow as follows:
- 0 a) THROTTLE UW-840 to achieve approximately 90 gpm as indicated by FI-7980, Aftercooler Water Flow.
- 0 b) THROTTLE UW-836 to achieve approximately 120 gpm as indicated by FI-7979, Jacket Water Flow.

CAUTION

When Service Water is aligned to supply cooling to the Appendix R DG Heat Exchangers, placing Service Water in service slowly ensures flow will NOT adversely affect the operation of the conventional Service Water header.

- NA 4.7.15 IF Conventional Service Water is available AND the CRS gives permission to use it as the cooling source, THEN ALIGN Conventional Service Water to The Appendix R DG as follows:
- NA 4.7.15.1 OPEN SWT-837
- NA 4.7.15.2 ADJUST Cooling Water flow as follows:
- NA a) THROTTLE UW-840 to achieve approximately 137 gpm as indicated by FI-7980, Aftercooler Water Flow.
- NA b) THROTTLE UW-836 to achieve approximately 160 gpm as indicated by FI-7979, Jacket Water Flow.

NOTE

- There is no time delay when starting the engine in manual mode.
- The default starting sequence is 3 start cycles, comprised of 10 seconds of cranking and 10 seconds of rest.
- When the coolant reaches operating temperature OR the warm-up at idle time is completed, the generator will ramp up to rated speed and voltage.

Ø 4.7.16 TURN the 0/MANUAL/AUTO switch to the MANUAL position.

Ø 4.7.17 PRESS AND HOLD the Manual Run/Stop button for a minimum of 3 seconds

Ø 4.7.17.1 RELEASE the Manual Run/Stop button.

NOTE

- The _ momentary pushbutton on Menu A of the Operator Panel is used to close and open breaker SBO/ASS.
 - _ indicates breaker SBO/ASS is open, PUSH to close
 - - indicates breaker SBO/ASS is closed, PUSH to open
- When using the _ momentary pushbutton, breaker SBO/ASS will close only when set-up conditions allow (i.e. dead bus OR generator synchronized with bus).

nr 4.7.18 IF Manually closing breaker SBO/ASS,
THEN PRESS the Manual Close Button on the front of the Breaker.

Ø 4.7.19 CLOSE breaker SBO/ASS as follows:

Ø 4.7.19.1 PRESS AND HOLD the _ momentary pushbutton until the symbol indicates - (breaker SBO/ASS closed).

Ø 4.7.19.2 RELEASE the momentary pushbutton.

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NOTE

- A fault that could result in engine damage, causes an immediate engine shutdown.
- All other faults allow the engine to run during the cool-down sequence before engine shutdown.
- Warning alarms will not cause a shutdown but may indicate abnormal operation.

10 min
↓

NA

4.7.20 IF a Warning Condition occurs (Warning Status Indicator illuminates yellow), THEN PERFORM the following:

_____ 4.7.20.1 IF the Alarm Module warning horn annunciated, THEN momentarily PUSH the PUSH TO SILENCE HORN button.

_____ 4.7.20.2 REFER to the following for assistance in correcting the condition:

- _____ • ATTACHMENT 2, WARNING AND SHUTDOWN FAULT CODES
- _____ • ATTACHMENT 3, APPENDIX R DG TROUBLESHOOTING PROCEDURES

_____ 4.7.20.3 WHEN the condition is corrected, THEN the Warning Status Indicator may be reset as follows:

- _____ a) PRESS the front panel FAULT ACKNOWLEDGE button

NOTE

If a shutdown condition occurs the Shutdown Status Indicator will illuminate red and the engine will shutdown immediately or on a cool-down timer at any time an abnormal condition is sensed:

NA

4.7.21 IF a shutdown condition occurs (Shutdown Status Indicator illuminates red), THEN PERFORM the following:

_____ 4.7.21.1 IF the Alarm Module warning horn annunciated, THEN momentarily PUSH the PUSH TO SILENCE HORN button.

_____ 4.7.21.2 REFER to the following for assistance in correcting the condition:

N/A

- ATTACHMENT 2, WARNING AND SHUTDOWN FAULT CODES

- ATTACHMENT 3, APPENDIX R DG TROUBLESHOOTING PROCEDURES

4.7.21.3 PERFORM the following to reset the shutdown condition:

- IF the EMERGENCY STOP button was pressed, THEN PULL the EMERGENCY STOP button out
- PLACE the 0/MANUAL/AUTO switch in 0
- PRESS the front panel FAULT ACKNOWLEDGE button
- PLACE the 0/MANUAL/AUTO switch in AUTO

Ø

4.7.22 IF desired to ALIGN the Appendix R DG Auxiliaries MCC to the Appendix R DG THEN PERFORM the following:

Ø

4.7.22.1 CHECK the Appendix R DG Auxiliary Transfer Switch is aligned as follows:

Ø

- Source 2 Available (Yellow Light illuminated)

Ø

4.7.22.2 ROTATE and HOLD the Appendix R DG Auxiliaries Normal/Standby Switch in the NORMAL position (Aligned to the Appendix R DG Output) (Appendix R DG Auxiliaries MCC)

Ø

- WHEN the CHECK Source 2 Connected (Red Light) illuminates, THEN RELEASE the switch

Ø

4.7.23 CHECK that the DG Area Fan is running

Ø

4.7.24 ENSURE that breaker SBO/ASS is Closed. (SBO/APP R Diesel Generator Switchgear)

Ø

4.7.25 ADJUST cooling water throttle valves to maintain normal cooling temperatures.

Ø

- UW-836

Ø

- UW-840

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NOTE

One set of data should be taken, even if engine is operated for less than an hour.

- NA 4.7.26 IF time permits, THEN RECORD Appendix R DG parameters once per hour using ATTACHMENT 1, APPENDIX R DG DATA SHEETS.

NOTE

When the Appendix R DG Day Tank is operating in AUTO, the The Appendix R DG Day Tank Level should be maintained between 7/8 and Full.

- Ø 4.7.27 MONITOR Appendix R DG Day Tank Level.
- Ø 4.7.28 MONITOR Lube Oil Supply Reservoir gauge glass level.
- Ø 4.7.28.1 WHEN gauge glass level indicates less than 1/4 full, THEN REFILL Lube Oil Supply Reservoir with proper grade of oil. (SAE 15W – 40)
- Ø 4.7.29 CHECK the engine systems for leakage
- NA 4.7.29.1 IF leakage is observed, THEN INITIATE a WRT as necessary:
- Ø 4.7.30 ENSURE breaker SBO/ASS is Closed (SBO/APP R Diesel Generator Switchgear)

NOTE

- The Appendix R Diesel Generator's maximum continuous load is 2045 kW. During an emergency, maximum generator load is 2700 kW for 25 hours/yr.
- When starting equipment, coordination with UNIT 3 will be necessary to ensure adequate generator capacity is available.

- Ø 4.7.31 INFORM the CCR that the Appendix R DG is energized up to GT/BT and ready to be loaded.

18 min