GEORGIA POWER
POWER GENERATION DEPARTMENT
VOGTLE ELECTRIC GENERATING PLANT

INSTRUCTIONAL UNIT

TITLE:	MANUALLY STOP THE EMERGENCY DIESEL GENERATOR LOCALLY	NUMBER: NL-IU-11205-004-01-C
PROGRAM:	OUTSIDE AREA OPERATOR	REVISION: 1
AUTHOR:	G. D. STONE	DATE: 7/31/89
APPROVED:	[signature]	DATE: 8/29/89

REFERENCES:

VOGTLE PROCEDURE 13145-1, DIESEL GENERATOR (REV 17)
13427-1, 4160V AC 1E ELECTRICAL DISTRIBUTION SYSTEM (REV 10)

NL-IU-11205-004-01-C; Manually Stop Diesel Generator Locally

PERFORMANCE OBJECTIVE

Given a directive from the control room, manually stop the diesel generator locally.

The diesel generator must be stopped and system parameters must be monitored. The procedure checklist must be completed, initialled, and returned to the Shift Supervisor. The fuel oil day tank must be sampled for water and the applicable cylinder moisture checks must be performed. All communication and activities must be performed in accordance with current, approved procedures.

INFORMATION

This task is performed after a local start of the diesel generator, for test runs after maintenance, or when instructed by the control room operator.

When given instructions from the control room that the generator is running locally and unloaded, and the required procedure, manually stop the diesel generator locally under these conditions:

1. Stop is after an automatic start due to a safety injection actuation signal (SIAS)

   NOTE: The diesel is running unloaded.

2. The diesel is running unloaded after a normal (non-emergency) start

It is important to be aware of the conditions under which the diesel generator was started, as this can make a difference as to how the diesel generator will be shut down.

Expect to perform a normal stop locally if the diesel was started locally. If the control room started the diesel, it will usually be stopped from the control room. (The mode control will be in the REMOTE position.) Be prepared to shut down the diesel generator after an emergency start (manual or safety injection signal start), when directed by the control room operator.

RECEIVE A DIRECTIVE TO SHUT DOWN THE DIESEL GENERATOR LOCALLY

The control room operator will issue a directive to stop the diesel generator manually from the diesel generator building. Proceed to the PDG1(3) generator control panel.

The control room operator will inform the OAO of one of the following conditions:

NL-IU-11205-004-01-C; Manually Stop Diesel Generator Locally

1. Stop is after an automatic start due to a safety injection actuation signal (SIAS).

2. The diesel is running after a normal (non-emergency) start.

Refer to the Appendix for specific responses to LOCA conditions.

ENSURE THAT THE REMOTE/LOCAL SWITCH IS IN THE LOCAL POSITION
Ensure that the 1-HS-4515(4517) REMOTE/LOCAL switch is in the LOCAL position. The red light above the switch will be lit when in LOCAL. The engine cannot be stopped using the STOP pushbutton locally unless this switch is in the LOCAL position. If the DG was loaded, do not change the position of the REMOTE/LOCAL switch. The control room operator must unload the DG and open its output breaker before directing a change of the REMOTE/LOCAL switch.

PUSH THE STOP PUSHBUTTON
Notify the control room that the engine is being stopped. Push the 1-HS-4571A(4572A) pushbutton on the PDG2(4) engine control panel. The engine will stop in approximately three to five seconds.

Verify that the red STOPPING lamp has illuminated. Note the time and inform the control room that the engine has stopped. A normal start attempt while this light is lit will only waste starting air.

MOMENTARILY PLACE THE UNIT/PARALLEL SWITCH IN THE UNIT POSITION
Momentarily place the 1-HS-4414A(4415A) UNIT/PARALLEL switch in the UNIT position.

Communicate with the control room operator and verify that the UNIT/PARALLEL switch in the control room is in the UNIT position.

PLACE THE REMOTE/LOCAL SWITCH IN THE REMOTE POSITION
Return the REMOTE/LOCAL switch to the REMOTE position. The red light above the handswitch will go out. Independent verification is required.

The diesel generator cannot be started under a SIAS or loss of off-site power, or manually from the control room, if the switch is in the LOCAL position.

VERIFY THE FOLLOWING AT 480V MCC 1NB1(1NB2):
1. The generator space heater red indicating lamp is illuminated.
2. The jacket water keep warm pump red indicating lamp is illuminated, and the pump is running.
3. The lube oil keep warm pump red indicating lamp is illuminated, and the pump is running.

VERIFY THAT THE UNIT AVAILABLE LIGHT IS ILLUMINATED

NL-IU-11205-004-01-C; Manually Stop Diesel Generator Locally

Verify that the blue UNIT AVAILABLE light illuminated within two minutes after the STOP button was depressed.

If the UNIT AVAILABLE light does not illuminate, notify the control room. The control room operator will issue a directive to check the following indications:

1. The POWER AVAILABLE status lights are illuminated.
   There are three white potential lights on the engine control panel. Inform the control room operator which, if any, of the three lights are illuminated. They are labeled as follows:
   A POWER AVAILABLE
   B POWER AVAILABLE
   C POWER AVAILABLE
2. Generator differential relay lockout switch 186A reset.
   Verify that a 186 differential relay for phases A, B, and/or C has not tripped on the generator relay panel. The generator relay panel is located to the right of the generator control panel. An orange target flag will appear on the relay if a 187 relay has tripped. Inform the control room which, if any, of the relays has tripped.

   The control room operator may instruct resetting of the relay. Always inform the operator of tripped lockout relays, and of relay target flags showing, and never reset either until issued a directive to do so.
   a. Push the RELAY TARGET RESET button on the right side of the relay panel.
   b. Push the lever below the casing of the relay upwards.
   c. Turn the RESET/TRIP handle clockwise to the RESET position.
3. EMERGENCY STOP signal reset if directed.
   Push the EMERGENCY STOP RESET button on the engine control panel. The red EMERGENCY STOP light will not be illuminated.
4. Overspeed trip reset
   The DG TRIP OVERSPEED alarm will annunciate if not reset.
5. Starting air pressure is greater than 210 psig.
6. Control air pressure is greater than 45 psig.

VERIFY THAT THE LUBE OIL AND JACKET WATER COOLING TEMPERATURES ARE STABLE
The lube oil and jacket water cooling temperatures stabilize between 142 degrees and 170 degrees F.

PERFORM CHECKLIST A(B), "DIESEL GENERATOR STANDBY MODE STATUS CHECK"
Complete the checklist, sign it, and return it to the licensed operator. This checklist is in Procedure 13.46-1, and portions must be independently verified. Log the activity.

NOTE: The control room operator will stop the ESF fans, and align control switches for operation of the Non-ESF fan. The CRO may request

the QAO to check that the outside air dampers open when the Non-ESF fan starts.

SAMPLE THE DIESEL GENERATOR DIESEL FUEL OIL DAY TANK FOR WATER

This is required any time that the diesel generator has been run for an hour or more. It is also checked routinely every 31 days.

---Request permission from the control room operator prior to taking the sample.
---Obtain a clear container one liter size or larger.
---Unlock and remove the cap from the day tank drain valve, 1-2403-U4-035(036).
---Slowly drain some fuel oil into the container, and close the drain valve.
---Examine the sample for water on the bottom of the container. Dispose of the fuel oil from the clear container into an approved receptacle.
---Repeat the sampling until no water is found.
---Close and lock the drain valve. Reinstall the cap.
---Report findings to the control room operator.

Independent verification is required on the valve and cap.

NOTE: The control room personnel fill out a report to the Emergency Support Superintendent after the diesel generator is shut down. The CRO may need information, such as whether or not the turbochargers were pre-lubricated, and if excessive water or sediment was in the fuel oil sample.

A cylinder moisture check must be made four to eight hours after shutdown and 24 hours after shutdown. This task is covered in another Instructional Unit.

LOG THE ACTIVITY

NOTE: Although the licensed operator's primary function is to keep up with ongoing events, you must always inform the licensed operator of any problems which might affect the reliability of the other train diesel generator (or any ESF equipment). If you suspect a problem with the opposite train's diesel generator which the control room operator may not know about, inform him immediately.

NOTE: If you were to perform a cylinder moisture check, and for example, the fuel oil supply between the day tank and engine was isolated unbeknownst to the control room operator, there would be no operable diesel generator for the unit while the cylinder moisture check was being made.

NL-IU-11205-004-01-C: Manually Stop Diesel Generator Locally

PERFORMANCE GUIDE

Follow these steps to manually stop diesel generator locally.

1. Receive a directive to shut down the diesel generator locally.
2. Ensure that the REMOTE/LOCAL switch is in the LOCAL position.
3. Push the STOP pushbutton.
4. Momentarily place the UNIT/PARALLEL switch in the UNIT position.
5. Place the REMOTE/LOCAL switch in the REMOTE position.
6. Verify the following at 480V MCC 1NB1(1NB0):
   a. The generator space heater red indicating lamp is illuminated.
   b. The jacket water keep warm pump red indicating lamp is illuminated.
   c. The lube oil keep warm pump red indicating lamp is illuminated.
7. Verify that the UNIT AVAILABLE light is illuminated.
8. Verify that the lube oil and jacket water cooling temperatures are STABLE
9. Perform checklist A(B), "Diesel Generator Standby Mode Status Check."
10. Sample the diesel generator diesel fuel oil day tank for water.
11. Log the activity.

SELF-TEST

Before proceeding to the Task Practice, answer the following questions.

1. When can you expect to perform a normal stop locally?

2. The control room must be notified that the engine is being stopped prior to pushing the STOP button.
   a. True
   b. False

3. The UNIT/PARALLEL switch must be momentarily placed in the _____ position after the diesel is stopped.
   a. UNIT
   b. PARALLEL

4. The lube oil and jacket water cooling temperatures stabilize between
   a. 187 degrees and 205 degrees.
   b. 125 degrees and 137 degrees.
   c. 142 degrees and 170 degrees.

5. After an emergency start has occurred (from the breakglass), and you have been told to stop the diesel generator to place it in standby, you must emergency stop it.
   a. True
   b. False

ANSWERS

1. You can expect to perform a normal stop locally if the diesel was started locally.

2. a. True

3. a. UNIT

4. c. 142 degrees and 170 degrees F.

5. b. False. After installing a new breakglass lens, or replacing the lens if it had been removed, you depress RESET FROM LOCA, and perform a normal stop.

TASK PRACTICE

Before proceeding to the Performance Test, complete the following Task Practice exercise(s).

1. Review Procedure 13145-1. Be sure that you understand all precautions, limitations, and steps associated with manually stopping the diesel generator locally.

2. Take this instructional unit and Procedure 13145-1 to the diesel generator building. Be sure that you can locate all local components and instrumentation associated with manually stopping the diesel generator locally.

3. In the diesel generator building, walk through the task of manually stopping the diesel generator locally. If possible, have a fellow trainee evaluate your performance using Procedure 13145-1 and this instructional unit.

FEEDBACK ON TASK PRACTICE

1. If you have any questions about the precautions, limitations, or steps in Procedure 13145-1, ask your instructor.

2. You should have been able to locate all local components and instrumentation associated with manually stopping the diesel generator locally. If you had any difficulty, ask your instructor for help.

3. You should have walked through the steps necessary to manually stop the diesel generator locally. If you had any difficulty, re-read the pertinent sections of this instructional unit and the procedure. Resolve any questions with your instructor.

NL-IU-11205-004-01-C; Manually Stop Diesel Generator Locally

APPENDIX

Condition: Stop is after diesel generator under LOCA conditions.

1. Install a new breakglass lens, if it was broken, or replace the cover if it was removed.

2. Depress the RESET FROM LOCA pushbutton 1-HS-4583(4584).

3. Verify that the SHUTDOWN SYSTEM ACTIVE red light is illuminated.

4. Shutdown the diesel generator per normal stopping procedure.