NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO, SRO-U SYSTEM j

TITLE: LOCALLY START AND LOAD 1/1 D/G

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: MANUALLY START AND LOAD DIESEL GENERATOR TO A DEENERGIZED BUS

Alternate Path: YES

Facility JPM #: PL-OPS-EDG-003J

K/A: 064A2.05 Importance: RO: 2.9 SRO: 3.3

K/A Statement: Methods for energizing a dead bus

Task Standard: Bus 1C energized from 1-1 Diesel Generator

Preferred Evaluation Location: Simulator ____ In Plant __X___

Preferred Evaluation Method: Perform ____ Simulate __X___

References:ONP-20, Diesel Generator Manual Control

Validation Time:15 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes Time Critical: NO

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- ONP-20, Diesel Generator Manual Control, Section 4.7.2, Rev.23
- ONP-20, Attachment 1, Woodward Governor Type EGB, Rev.23

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- Loss of off-site power has occurred.
- Reactor has been tripped and all rods have been inserted into the core.
- Bus 1C has not been energized from 1-1 Diesel Generator.
- Electricians have determined that the 1-1 Diesel Generator governor has malfunctioned causing 1-1 Diesel Generator to trip.

INITIATING CUES:

- During performance of ONP-20, the Control Room Supervisor directs you to locally start and load 1-1 Diesel Generator per Step 4.7.2, "Manual Unit Control (EGA Malfunctioning)".

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator obtains a copy of ONP-20, Section 4.7.2, Manual Unit Control (EGA Malfunctioning)	ONP-20, Section 4.7.2 obtained	**S U**
Comment: NOTE: ***Evaluator provides the operator a working copy ONP-20, Section 4.7.2.***			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
4.7.2a	**TRIP** all breakers on affected bus (D/G 1-1 = Bus 1C) electrically or mechanically.	All breakers on Bus 1C are verified tripped (red light out, green light on)	**S U**
Comment: NOTE: ***EVALUATOR CUE: The breaker status lights on Bus 1C have their red lights out and green lights on.***			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
4.7.2b	Utilizing ladder from D/G room to **PERFORM** the following: 1. **RECORD** all existing governor control settings on affected D/G (1-1) (refer to Att. 1)	D/G 1-1 governor control settings recorded: SPEED Drop setting _2.1_, LOAD LIMIT setting _MAX_, Speed setting _13_, _3.4_ (Recessed dial and Outer dial)	**S U**
Comment: NOTE: The Speed setting has a recessed dial and an outer dial.			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
4.7.2b	Utilizing ladder from D/G room to **PERFORM** the following: 2. **DISCONNECT** the electrical connector (Item A inner connector on Att. 1) from affected D/G governor	Electrical connector on side of Woodward Governor fro 1-1 D/G disconnected	**S U**
Comment: NOTE: Operator **is not to remove** the electrical connector, **simulate** only. **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
4.7.2c.1	IF the affected D/G is NOT running, THEN **START** affected D/G as follows: 1. **PLACE** Engine Control Switch on Local Gauge Board to Start position	Engine Control Switch on Local Gauge Board placed to START	**S U**
Comment: NOTE: Operator **is not to insert** the handle into the Local Gauge Board, **simulate** only. NOTE: Handle must be inserted into Engine Control Switch, not in procedure. NOTE: The 1-1 diesel engine is not running. NOTE: ***EVALUATOR CUE: After the Operator simulates placing the engine control switch to START, CUE that the 1-1 diesel engine is not running.***			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
4.7.2c.2	IF the affected D/G is NOT running, THEN **START** affected D/G as follows: 2. REMOVE handle from Engine Control Switch	Handle removed from Engine Control Switch	**S U**
Comment: NOTE: ***EVALUATOR CUE: After the Operator simulates placing the engine control switch to START, CUE that the 1-1 diesel engine is not running.***			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
4.7.2c.3	IF D/G did NOT start after performing Step 1, THEN **PRESS** AND **HOLD** for at least five seconds the Air Start Motor Solenoid Override pushbutton.	Air Start Motor Solenoid Override pushbutton pressed and held for at least five seconds	**S U**
Comment: NOTE: Operator **is not to press and hold** the pushbutton, **simulate** only. NOTE: ***EVALUATOR CUE: After the Operator simulates pressing and holding the Air Start Motor solenoid Override pushbutton, CUE: the 1-1 diesel engine is running*** NOTE: ***EVALUATOR CUE: Operator may verify proper operation of D/G, CUE: D/G is operating as expected (frequency, voltage, temps, etc)*** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
4.7.2c.4	IF D/G did NOT start, THEN **GO TO** Section 4.5	Operator determines this step does not apply	**S U**
Comment:			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
4.7.2d.1	Utilize ladder from D/G Room to **PERFORM** the following actions as concurrently possible: 1. **SLOWLY LOWER** Speed Droop Control Knob to zero (Item B on Att. 1)	Speed Droop Control Knob slowly lowered to zero	**S U**

Comment:

NOTE: Operator **is not to slowly lower** the Speed Control Knob, **simulate** only.

NOTE: ***EVALUATOR CUE: Speed Droop Control Knob is at zero***

CRITICAL STEP

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
4.7.2d.2	**ADJUST** Speed Setting Knob (Item C on Att. 1) to maintain D/G Output frequency between 60 to 62 Hz (900 to 930 RPM)	Speed Setting Knob rotated (RAISED) to maintain D/G output frequency between 60 and 62 Hz.	**S U**

Comment:

NOTE: Operator **is not to adjust** the Speed Setting Knob, **simulate** only.

NOTE: ***EVALUATOR CUE: When Operator requests/reads frequency, NOTIFY them that it is 59.5 Hz***

NOTE: ***EVALUATOR CUE: When it has been determined that the Operator has raised control speed with the speed setting knob, provide CUE that speed is at 900 rpm and frequency is between 60 to 62 Hz***

CRITICAL STEP

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
4.7.2e	IF D/G Output Breaker did not automatically close, THEN locally CLOSE affected D/G Output Breaker D/G 1-1 = 152-107	D/G Output Breaker 152-107 verified closed **OR** Bus 1C verified energized	**S U**

Comment:

NOTE: ***EVALUATOR CUE: If Operator checks Breaker 152-107 indication, cue that the red breaker status light is lit.***

NOTE: ***EVALUATOR CUE: If Operator calls the Control Room to verify if 1C Bus is energized, cue that 1C Bus is energized.***

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
4.7.2f	**CONTACT** Control Room, if available, to verify Critical Service Water Header pressure to affected D/G is greater than 42 psig. IF Control Room is unavailable, THEN **VERIFY** Raw Water Pressure (Gauges on the Local D/G Control Panels) is greater than 25 psig. D/G 1-1 = Critical Header "B" or PI-1472	Control Room contacted to verify 'B' Critical Service Water Header Pressure is greater than 42 psig. **OR** PI-1472 verified reading greater than 25 psig.	**S U**

Comment:

NOTE: ***EVALUATOR CUE: If Control Room contacted to verify 'B' Critical Service Water pressure, CUE that 'B' Critical Service Water Header is at 70 psig.***

NOTE: ***EVALUATOR CUE: If PI-1472 is read on Local Gauge Board, CUE that PI-1472 indicates 56 psig.***

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
4.7.2g	RESTORE loads on affected Bus one at a time as directed by Shift Manager	Operator questions if more loads need to be restored	**S U**
Comment: NOTE: ***EVALUATOR CUE: Another Operator will restore loads on Bus 1C as needed.***			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
4.7.2h	ADJUST speed setting knob (Item C on Att. 1) to maintain 60 to 62 Hz (900 to 930 RPM)	60 to 62 Hz (900 to 930 RPM) maintained on D/G 1-1	**S U**
Comment: NOTE: ***EVALUATOR CUE: No other loads will be added onto the D/G.***			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
n/a	Notify CRS that 1-1 D/G has been manually started and loaded onto Bus 1C per ONP-20, Section 4.7.2.	CRS notified that 1-1 D/G has been manually started and loaded onto Bus 1C per ONP-20, Section 4.7.2.	**S U**
Comment:			

END OF TASK

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Loss of off-site power has occurred.
- Reactor has been tripped and all rods have been inserted into the core.
- Bus 1C has not been energized from 1-1 Diesel Generator.
- Electricians have determined that the 1-1 Diesel Generator governor has malfunctioned causing 1-1 Diesel Generator to trip.

INITIATING CUES:

- During performance of ONP-20, the Control Room Supervisor directs you to locally start and load 1-1 Diesel Generator per Step 4.7.2, "Manual Unit Control (EGA Malfunctioning)".