

## Vogle ILT22 NRC Post-Exam Comment

### Simulator JPM 'f'

Simulator JPM 'f', "Discontinue Parallel Operation by Removing DG1A from Bus 1AA02 (Alternate Path)," requires the applicant to reduce DG1A load to remove it from bus 1AA02. As the load is being reduced, 1AA02 bus (and DG1A) frequency lowers uncontrollably to 59 Hz. The applicant is then required to respond to this condition using the appropriate response procedure.

Simulator JPM 'f' includes the actions of 17035-1, "Annunciator Response Procedures for ALB35 on EAB Panel," (ver. 36.2) for window ALB35-D06 DG1A GEN UNDER FREQ.

JPM 'f', Step 7 (from 17035-1), is marked as a *critical step* and reads as follows:

#### 4.0 SUBSEQUENT OPERATOR ACTIONS

##### 1. Diesel Generator in Parallel Operation:

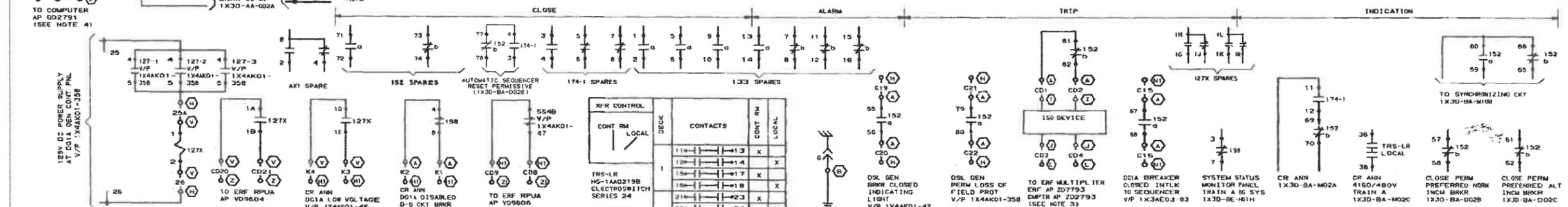
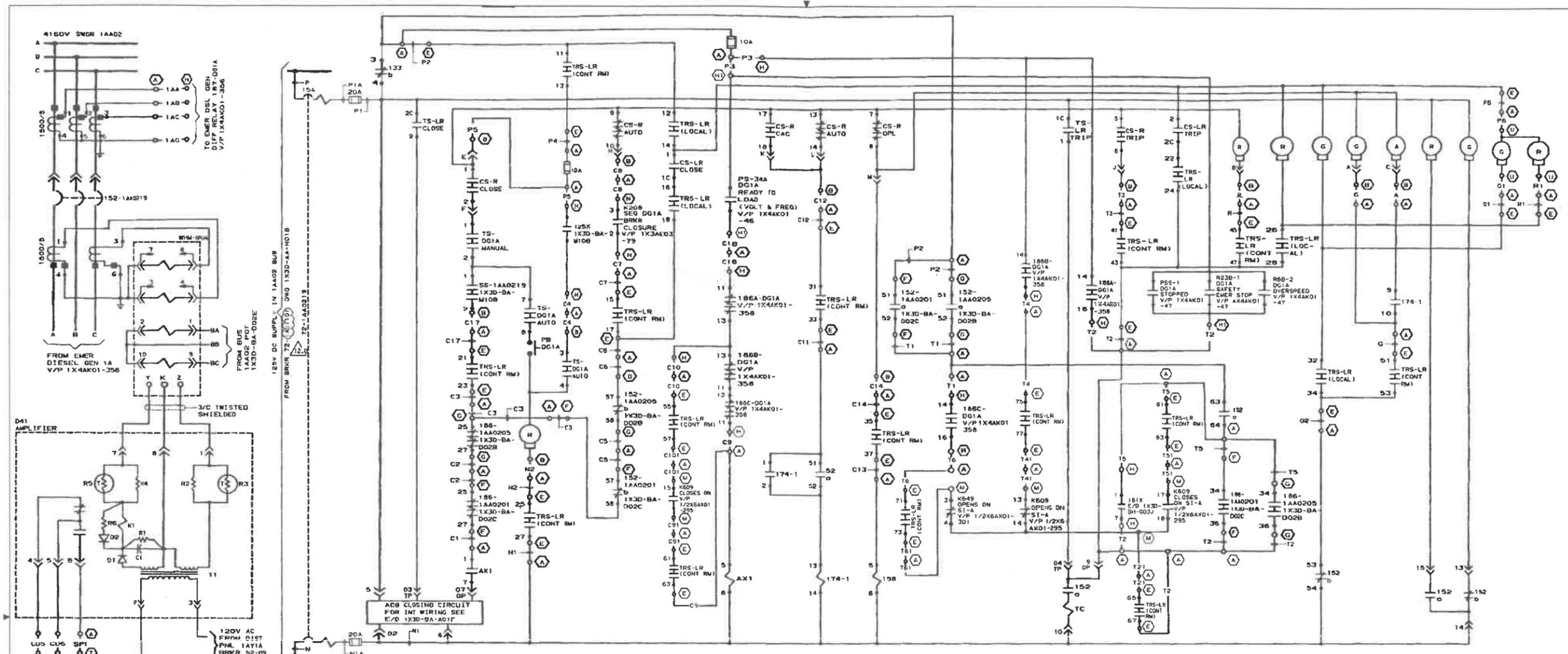
- a. Check bus frequency. If less than or equal to 59.5 Hz, ensure Diesel Generator Breaker, 1AA02-19, has tripped.

Standard: Applicant checks the DG1A Frequency Meter or the 1AA02 Frequency Meter on the QEAB and determines that frequency is less than 59.5 Hz. The applicant then opens 1AA02-19, DG1A Output, by placing 1HS-1AA0219 to TRIP (this may have been done earlier during JPM Step 5).

### Facility Comment / Justification

Per NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Appendix 'C', page C3, a *critical step* is a step "that the examinee must perform correctly (i.e., accurately, in the proper sequence, and at the proper time) to accomplish the task standard." Based on this definition, JPM Step 7 should NOT be a critical step because if JPM Step 7 is NOT performed, then the task standard would still be met if the applicant successfully stops DG1A (normal or emergency stop) during the performance of the JPM. If the applicant performs a normal or emergency stop of DG1A in the following procedure (JPM) step, the DG1A output breaker will automatically open (see elementary diagram 1X3D-BA-D02D and associated enlarged region included). Stopping DG1A is a *critical step* because it must be performed to accomplish the task standard, which requires DG1A to be stopped with its output breaker open. The DG1A output breaker is designed to automatically open when a Normal, Emergency, or Overspeed stop of DG1A occurs, so there is no negative consequence to this operating sequence. Therefore, the facility recommends removing the *critical step* designation from JPM Step 7.

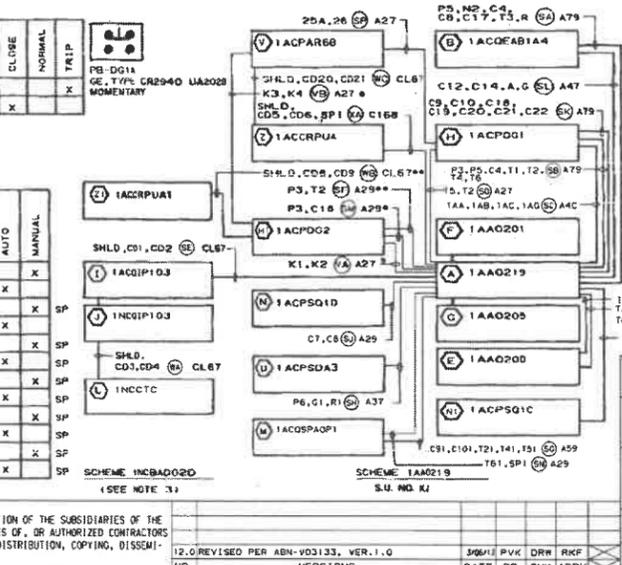




DEVICE	MFR	TYPE	MODEL NO	REFERENCE DWGS	DESCRIPTION	REV
174-1	GE	MFA	12HF51A42	N/A	P & I DIAGRAM	
198	GE	HMA	12HMA1186	1X30-AA-002B	ONE LINE DIAGRAM	
AX1	GE	HMA	12HMA1186	1X30-BA-X05A	LOGIC DIAGRAM	
127X	P & B	MOR	MOR 137-5	N/A	BECHTEL V/P	

TRIP	CLOSE	CONTACTS	HANDLE	END	NO	NC	NO	NC	TRIP
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

DECK	CONTACTS	CONT RM	LOCAL
1	11-1	11-2	11-3
2	21-1	21-2	21-3
3	31-1	31-2	31-3
4	41-1	41-2	41-3
5	51-1	51-2	51-3
6	61-1	61-2	61-3
7	71-1	71-2	71-3
8	81-1	81-2	81-3
9	91-1	91-2	91-3



NOTES:

- FOR GENERAL NOTES AND SYMBOLS REFER TO DRAWINGS LISTED ON 1X30-AA-002B.
- IDENTIFIES EQUIPMENT LOCATION NUMBER, FOR COMPLETE EQUIPMENT LOCATION NUMBER REFER TO CABLING BLOCK DIAGRAM.
- CIRCUITS AFTER THE ISOLATION DEVICES ARE CONSIDERED NON-CLASS 1E.
- CLASS 1E DIGITAL PULSE SIGNAL FROM D41 AMPLIFIER IS SUPPLIED TO THE ERF RPUA FOR SIGNAL ISOLATION. THE NON-CLASS 1E OUTPUT FROM THE ERF RPUA WILL THEN BE FED TO THE PROTEUS COMPUTER.
- SPARE CONTACT WITH "A" IS WIRED TO UNIT TERMINAL BLOCK.
- \* CABLES ASSOCIATED WITH CIRCUIT "A". \*\* CABLES ASSOCIATED WITH CIRCUIT "B".
- THE TWO LETTER INSIDE THE BOX INDICATE STARTUP NUMBER OF THE CORRESPONDING CABLE.

INT. WIRING: 12, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

NUCLEAR SAFETY RELATED [A] [B]

SOUTHERN COMPANY SERVICES, INC.  
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY  
ALVIN W. VOGLE NUCLEAR PLANT

ELEMENTARY DIAGRAM  
ELECTRICAL SYSTEM  
4160V INCM BRK 152-1AA0219  
FROM EMERGENCY DIESEL GEN. 1A

SCALE: NONE DRAWING NO. VER. 12.0

1X30-BA-002D

NO. 12.0 REVISED PER AEN-V0333, VER. 1.0

DATE DR CHK APPV

JOB NO. 10604

SIZE E 36x44

DWG CATEGORY CRITICAL

CAD NAME 13BAD02D

## FACILITY POST-EXAMINATION COMMENTS AND NRC RESOLUTIONS

### Question 1

JPM f – Discontinue Parallel Operation by Removing DG1A from Bus 1AA02

### Comment

The licensee stated that submitted JPM answer key required the applicant to reduce DG1A load to remove it from bus 1AA02. As the load was being reduced, 1AA02 bus (and DG1A) frequency lowered uncontrollably to 59 Hz. The applicant was then required to respond to this condition using the appropriate response procedure.

Procedure 17035-1, "Annunciator Response Procedures for ALB35 on EAB Panel," for window ALB35-D06 DG1A GEN UNDER FREQ. required the applicant to "Check bus frequency. If less than or equal to 59.5 Hz, ensure Diesel Generator Breaker, 1 AA02-19, has tripped". The JPM standard identified this as a critical step.

The licensee stated that NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Appendix 'C', page C3, defines a critical step as a step "that the examinees must perform correctly (i.e., accurately, in the proper sequence, and at the proper time) to accomplish the task standard." Based on this definition, JPM this step should NOT be a critical step because if the step 7 was NOT performed, then the task standard would still be met if the applicant successfully stops DG1 A (normal or emergency stop) during the performance of the JPM.

If the applicant performed a normal or emergency stop of DG1 A in the following procedure (JPM) step, the DG1 A output breaker would automatically open. Stopping DG1A continued to be a critical step because it must have been performed to accomplish the task standard, which required DG1A to be stopped with its output breaker open. The DG1A output breaker was designed to automatically open when a Normal, Emergency, or Overspeed stop of DG1 A occurs, so there was no negative consequence to this operating sequence. Therefore, the facility recommended removing the critical step designation from this JPM step.

### NRC Resolution

The licensee's recommendation was not accepted. The answer key to JPM f has not been revised.

The NRC disagrees with the licensee's contention that step 7 was not critical. By not opening the diesel output breaker prior to tripping the machine, the applicant unnecessarily tested the automatic interlock that opened the breaker. If this interlock had failed, the diesel would have shut down still connected to the grid potentially damaging the safety related piece of equipment. This possibility of damage made the step safety significant and therefore the step remained critical.