



Method Of Procedure Facility Name and Location Generator Connection

(11/14 rev. FINAL)

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General
Detailed

Start Date:	Start Time:	Completion Date:	Completion Time:
Client Representative: First Last		Equipment Representative: First Last	Client's Designated Representative: Tim Everson/SiTESPAN
Electrical Contractor Representative: First Last	Mechanical Subcontractor Representative: First Last		
MOP Supervisor: First Last	MEP Engineer Representative: First Last		
Client Representative (Approver - Print Name):			
Job Description: Connect generator to generator switchgear. Generator power will be unavailable during the time it takes to connect the generator cabling. Existing generator(s) must be available within approximately 15 minutes if made necessary. UPS will keep critical loads, but cooling will be needed. All data rooms will be affected.			
Job Type	Switch <input type="checkbox"/>	Switch Power <input checked="" type="checkbox"/>	
Summary of Installed Equipment: Generator Type; SwithgearType; etc.			

Detailed below are all the steps necessary to explain the work that is to be performed. Steps will be numbered, and appear in the order in which they will occur, with the work operation responsibility indicated by checking the appropriate boxes. Work will not begin until this form has been reviewed and signed by Client and SiTESPAN representatives.

Have you Considered?

• Equipment added	• Emergency equipment & procedures available	• Required support
• Equipment removed	• Fuse alarm operation	• Emergency restoration plans
• Equipment compatibility	• Location of spare fuses	• Fuses and leads tagged
• Affected working circuits	• Records correction	• Office records/drawings available
• Restricted work hours	• Hazardous materials handling and disposal	• Supplier drawings available
• Work area protection	• Personnel experience	• Documents referenced in the MOP on-site
• Special tools/materials	• Before and after tests	
• Tool insulation	• Back out procedures	
• Safety consideration	• Technical reference	

RESPONSIBILITY				DESCRIPTION OF WORK OPERATION	STEPS COMPLETED			
S T E P #					D A & T E	T I M E	INITIALS	
							Contractor	MOP Supervisor
1	*							
2	*							
3								
4								

RESPONSIBILITY				DESCRIPTION OF WORK OPERATION	STEPS COMPLETED			
S T E P #					D A & T E	T I M E	INITIALS	
							Contractor	MOP Supervisor
				generators will be required in step E9. ATS1 = _____ kW ATS2 = _____ kW Total = _____ kW < 1500kW? Y or N				
5				Verify that UPS systems are fully functional, fully charged, and free of alarms. Note runtime of each UPS. 50% of the least runtime is the maximum time allowable for completing the EMERGENCY PROCEDURE. UPS1A = _____ minutes x 50% = _____ minutes UPS2A = _____ minutes x 50% = _____ minutes UPS1B = _____ minutes x 50% = _____ minutes UPS2B = _____ minutes x 50% = _____ minutes				
6				Verify Generator 3 circuit breaker (located inside generator enclosure) is LOTO.				
7				Disable Generator 1 operation by putting into "off" and pressing e-stop. LOTO generator.				
8				Disable Generator 2 operation by putting into "off" and pressing e-stop. LOTO generator.				
9	*			Open back of switchgear GDP2				
10				Commence termination and connection of cables. Anticipate two full ten hour days for task.				
11				If needed at the end of day one, jump to Steps 15 – 21. Emergency generator system will be in "normal" operating mode overnight. No utility watch necessary. Day 2 will start at Step 1.				
12				Test each connection for proper tightness.				
13				Visually verify proper and orderly connections and cable placement in switchgear.				
14				Megger cables to ensure that no cables have been crossed while being terminated. Verify if any controls or accessories at the gear or in the generators need to be disconnected before completing this test.				
15				Close switchgear back panel.				
16				Remove LOTO from Generator 1 circuit breaker and put Generator 1 back into remote operation and resetting e-stop.				
17				Remove LOTO from Generator 2 circuit breaker and put Generator 2 back into remote operation and resetting e-stop.				
18				Leave Generator 3 circuit breaker locked out until start up.				
19				Ensure all GDP2 circuit breakers are closed.				
20				Ensure there are no active alarms on the system.				
21				Via the Cummins Power Command system, initiate a generator test of Generator 1 and Generator 2. To ensure operation is re-established.				
22				Ensure the work environment is being left clean and tidy.				
23				File Final Report.				

RESPONSIBILITY				DESCRIPTION OF WORK OPERATION	STEPS COMPLETED			
S T E P #					D A T E	T I M E	INITIALS	
							Contractor	MOP Supervisor
				<i>End of Procedure</i>				
				EMERGENCY PROCEDURE				
E1				Immediately safe off on-going electrical connections in switchgear. Ensure no loose connections and no loose metal.				
E2				Close switchgear back panel.				
E3				Remove LOTO from Generator 1 circuit breaker.				
E4				Put Generator 1 back into operation by resetting emergency stop and putting into "Auto". Generator should start.				
E5				Remove LOTO from Generator 2 circuit breaker.				
E6				Put Generator 2 back into operation by resetting emergency stop and putting into "Auto". Generator should start and synchronize with Generator 1.				
E7				ATS should transfer and establish a power source to DP1A and DP1B.				
E8				If not automatically transferred, manually place ATS1 and ATS2 in emergency position.				
E9				Manually start generator 1 (or 1 and 2 depending on load noted in Step 4)				
E10				Diagnose problem with automatic function and reset system. Allow generators to re-charge UPS batteries to at least 90% before attempting to reinstate system function.				
E11				Upon approval of site personnel, return to Step 2 and continue normal procedure				
				<i>End of Emergency Procedure</i>				

* (SSP) Safe Stop Point

(LOTO) Lock Out Tag Out



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(10/26 rev. 0)

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The undersigned have approved the procedures that are described herein. No changes shall be made without the approval of SITESPAN, the Client, Installation Supplier, and Subcontractor Review Representatives.

Subcontractor Representative:	Title:	Phone:	Date:
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Subcontractor Personnel Performing Work:	Title:	Phone:	Date:

SUPPLEMENTAL CHECKLIST

The following checklist is to be reviewed before the start of each shift and the In-charge or Lead Installer shall date and initial as appropriate.

#	ITEM	Date and Initial	Date and Initial	Date and Initial	Date and Initial	Date and Initial
1	Walk through performed by installer prior to each tour.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
2	General MOP is written/approved.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
3	Detailed MOP is written/approved.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
4	Emergency contact list is available to all installers.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
5	Alarms have been verified for all associated equipment.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
6	Protective material kit is on the job.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
7	Work area is insulated with proper material.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
8	Sharp edges are covered in work area.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
9	Cable ends are covered with tape or tubing.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
10	Fuses are properly identified and sized.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
11	Cables have been traced.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
12	Cables are metered and tagged.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
13	Temporary cables are properly secured and supported.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
14	Tools are properly insulated.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
15	Guards are in place on tools.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
16	Personal protective equipment is available & being used.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
17	Safety procedures are being followed.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
18	Customer standards are understood and being followed.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
19	An approved battery spill kit is on site.	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA

ASK YOURSELF QUESTIONS

#	ITEM	Date and Initial	Date and Initial	Date and Initial	Date and Initial	Date and Initial
1	Do I know why I am doing this work?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
2	Have I identified and notified everybody (customers and internal groups) who will be directly affected by this work?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
3	Can I prevent or control service interruptions?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
4	Is this the right time to do this work?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
5	Am I trained and qualified to do this work?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
6	Are the work orders, MOPs and supporting documentation current and error free?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
7	Do I have everything I need to quickly restore service if something goes wrong?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
8	Have I walked through the procedures?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA
9	Am I using the right tools to perform this work?	Y N NA	Y N NA	Y N NA	Y N NA	Y N NA

• IF YOU ANSWERED "NO" TO ANY OF THE ABOVE -- CALL YOUR SUPERVISOR PRIOR TO JOB START