



PROJECT:

PHONE (573) 882-1133

FAX (573) 882-1175

Date:

Low Voltage Switchgear Construction Checklist (under 500 kVA)

Project:	
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Date:	
Building:	
Location:	

Submittal / Approvals

Submittal. The above equipment and systems integral to them are complete and ready for functional testing. The checklist items are complete and have been checked off only by parties having direct knowledge of the event, as marked below, respective to each responsible contractor. This construction checklist is submitted for approval, subject to an attached list of outstanding items yet to be completed. A Statement of Correction will be submitted upon completion of any outstanding areas. None of the outstanding items preclude safe and reliable functional tests being performed. ___ **List attached.**

Electrical Contractor	Date	General Contractor	Date

Construction checklist items are to be completed as part of startup & initial checkout, preparatory to performing test procedures.

- This checklist does not take the place of the manufacturer's recommended checkout and startup procedures or report.
- If this form is not used for documenting, one of similar rigor shall be used.
- Contractors assigned responsibility for sections of the checklist shall be responsible to see that checklist items by their subcontractors are completed and checked off.

Approvals. This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

Commissioning Authority	Date	Owner's Representative	Date



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Switchgear Information			
Equipment Tag		Location	
System (Circle one)	Power or Lighting	208-120 or 480-277	Normal or Emergency
Manufacturer		Model Number	
Serial Number		Short Circuit Capacity	
Volts/Phase Rating		Main Bus Amperage	
Service Area		Other	
Comments:			

Associated Checklists			
Transformer	<input type="checkbox"/>	Other	<input type="checkbox"/>
Comments:			

Requested documentation submitted	Rec'd	Comments
Manufacturer's cut sheets	<input type="checkbox"/>	
Installation and startup manual and plan	<input type="checkbox"/>	
O&M manuals	<input type="checkbox"/>	
Factory test results	<input type="checkbox"/>	
Sequences and control strategies	<input type="checkbox"/>	
Warranty Certificate	<input type="checkbox"/>	
Comments:		

Switchgear Enclosure/Cabinetry		
Check if Acceptable; Provide comment if unacceptable	NA	Comment
Equipment installed per manufacturer's instructions and specifications	<input type="checkbox"/>	
Equipment installed agrees with shop drawings and specifications	<input type="checkbox"/>	
Verify mounting, location and clearances are per plans and specifications	<input type="checkbox"/>	



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Inspect for physical, electrical and mechanical condition of equipment and cabinet - no damage evident	<input type="checkbox"/>	<input type="checkbox"/>	
Inspect panels and doors for proper fit and alignment	<input type="checkbox"/>	<input type="checkbox"/>	
Equipment labels permanently affixed	<input type="checkbox"/>	<input type="checkbox"/>	
Panel is clean and clear of dust or dirt	<input type="checkbox"/>	<input type="checkbox"/>	
Verify the application of manufacturer recommended torque values applied to bolted connections	<input type="checkbox"/>	<input type="checkbox"/>	
Verify correct circuit breaker sizes and types per the specifications and manufacturer's drawings	<input type="checkbox"/>	<input type="checkbox"/>	
Seismic anchoring installed and functional where applicable (non-short circuiting)	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that all manufacturer control wiring between shipping splits is properly connected per manufacturer's drawings and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Inspect insulators, barriers and shields for damage or contamination	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that ground bus is properly bonded to enclosure, enclosure is grounded and resistance to ground meets grounding specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Verify three or four wire configuration	<input type="checkbox"/>	<input type="checkbox"/>	
Metering transformer nameplate matches specified and approved transformer	<input type="checkbox"/>	<input type="checkbox"/>	
Transformer installed per manufacturer's instruction, plans and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Inspect metering transformer cables and connections for defects or physical damage	<input type="checkbox"/>	<input type="checkbox"/>	
Verify metering transformer connections are correct per the single line	<input type="checkbox"/>	<input type="checkbox"/>	
Verify all grounding and shorting connections for the metering transformer are in place	<input type="checkbox"/>	<input type="checkbox"/>	
Verify correct fusing for the metering transformer primary and secondary	<input type="checkbox"/>	<input type="checkbox"/>	
Verify the metering transformer taps are in accordance with the manufacturer's nameplate and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Verify the vents and air inlets are free and unobstructed. Clean air filters installed (if required)	<input type="checkbox"/>	<input type="checkbox"/>	
Megger test of bus – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	
Hi-potential test of bus – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	
Main Circuit Breaker			
Installed per manufacturer's instructions, plans and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Verify all maintenance and service clearances are maintained	<input type="checkbox"/>	<input type="checkbox"/>	
Verify no physical damage	<input type="checkbox"/>	<input type="checkbox"/>	
Verify voltage and current rating of circuit breaker are per plans and specifications	<input type="checkbox"/>	<input type="checkbox"/>	



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Confirm correct application of manufacturer's recommended lubricant	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that primary and secondary contact wipe dimensions are correct	<input type="checkbox"/>	<input type="checkbox"/>	
Verify breakers are mounted securely and operates smoothly	<input type="checkbox"/>	<input type="checkbox"/>	
Verify wire is properly installed and suitable size for breaker	<input type="checkbox"/>	<input type="checkbox"/>	
Check cell fit and element alignment	<input type="checkbox"/>	<input type="checkbox"/>	
Check racking mechanism	<input type="checkbox"/>	<input type="checkbox"/>	
Megger test of circuit breaker – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	
Inspect shutter operation	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that vacuum contact wipe dimensions are correct	<input type="checkbox"/>	<input type="checkbox"/>	
Hi-potential test of circuit breaker – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	
Feeder Circuit Breakers			
Installed per manufacturer's instructions, plans and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Verify all maintenance and service clearances are maintained	<input type="checkbox"/>	<input type="checkbox"/>	
Verify no physical damage	<input type="checkbox"/>	<input type="checkbox"/>	
Verify voltage and current rating of circuit breaker are per plans and specifications	<input type="checkbox"/>	<input type="checkbox"/>	
Confirm correct application of manufacturer's recommended lubricant	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that primary and secondary contact wipe dimensions are correct	<input type="checkbox"/>	<input type="checkbox"/>	
Verify breakers are mounted securely and operates smoothly	<input type="checkbox"/>	<input type="checkbox"/>	
Verify wire is properly installed and suitable size for breaker	<input type="checkbox"/>	<input type="checkbox"/>	
Check cell fit and element alignment	<input type="checkbox"/>	<input type="checkbox"/>	
Check racking mechanism	<input type="checkbox"/>	<input type="checkbox"/>	
Inspect shutter operation	<input type="checkbox"/>	<input type="checkbox"/>	
Verify that vacuum contact wipe dimensions are correct	<input type="checkbox"/>	<input type="checkbox"/>	
Megger test of circuit breaker – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	
Hi-potential test of circuit breaker – phase to phase and phase to ground. Test voltage per manufacturer's recommendations	<input type="checkbox"/>	<input type="checkbox"/>	

Operational Checks			
Check if Acceptable; Provide comment if unacceptable		NA	Comment
Control power energized to switchgear line-up	<input type="checkbox"/>	<input type="checkbox"/>	
A full listing of all relay settings per the coordination study is provided and relays are programmed / set and tested	<input type="checkbox"/>	<input type="checkbox"/>	



Construction Management

University of Missouri-Columbia

Planning, Design & Construction Campus Facilities

117 General Services Building
Columbia, MO 65211-3200

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Electrically operated circuit breakers exercised in manual mode (electrically operated in test position and fully engaged position without main bus voltage applied)	<input type="checkbox"/>	<input type="checkbox"/>	
All incoming cables are terminated and "ABC" phasing is correct. Terminations are torqued, checked, stress cones are properly grounded and exposed energized surfaces are insulated	<input type="checkbox"/>	<input type="checkbox"/>	
Specified sequences of operation and operating schedules have been provided with all variations documented	<input type="checkbox"/>	<input type="checkbox"/>	
Specified point-to-point checks have been completed and documentation record submitted for this system	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

***Fill out all form fields before signing!**

Name	Organization	Title	Signature
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

University of Missouri Commissioning Authority



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