



Project:

Planning, Design & Construction Campus Facilities 117 General Services Building Columbia, MO 65211-3200

PHONE (573) 882-1133 FAX (573) 882-1175 Date:

## Unit Substation Transformer Construction Checklist (under 500 kVA)

Project:	
Date:	
Building:	

### Submittal / Approvals

Location:

**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 <u>only by parties having direct</u> <u>knowledge of the event</u>, 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



# **Construction Management**

University of Missouri-Columbia

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Transformer Information					
Equipment Tag		Location			
System (Check one)	Power <b>or</b> Lighting	208-120 or 480-277	Normal or Emergency		
Manufacturer		Model Number			
Serial Number		Short Circuit Capacity			
Prim Volt Rating		Second Volt Rating			
BIL Ratings HV/LV		Main Bus Amperage			
Service Area		kVA Rating			
Comments:					

Associated Checklists					
Unit Substation		Switchgear		Other	
Comments:					

Requested documentation submitted	Rec'd	Comments
Manufacturer's cut sheets		
Installation and startup manual and plan		
O&M manuals		
Factory test results		
Sequences and control strategies		
Warranty Certificate		
Comments:		

Transformer Enclosure/Cabinetry						
Check if Acceptable; Provide comment if unacceptable		NA	Comment			
Equipment installed per manufacturer's instructions and specifications						

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

**Operational Checks** 



University of Missouri-Columbia

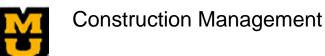
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Check if Acceptable; Provide comment if unacceptable	NA	Comment	
Specified sequences of operation and operating schedules have been provided with all variations documented			
Specified point-to-point checks have been completed and documentation record submitted for this system			
Verify 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			



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### Sensor and Actuator Calibration

All field-installed sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated in accordance with Specification Section 01810. All test instruments shall have had a certified calibration within the last 12 months: **Y/N\_\_\_\_\_**. Sensors installed *in* the unit at the factory with calibration certification provided need not be field calibrated.

Sensor or Actuator Tag & Location	Location OK	1 <sup>st</sup> Gage or BAS Value	Instrument Measured Value	<i>Final</i> Gage or BAS Value	Pass Y / N

Comments:

\*Fill out all form fields before signing!

Name	Organization	Title	Signature
6 	-		Jan 1997 - Andrew State (1997)

University of Missouri Commissioning Authority

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