

High Voltage Transformer Substation Entry Checklist

Site / Project	_____	Address	_____
Inspector name	_____	Company	_____
Date	_____	Time	_____

Documentation aid only. Adapt this resource to the site, manufacturer instructions, and applicable local requirements. It does not replace a competent person, professional judgment, legal advice, or a required statutory form.

Inspection checklist

Pre-Entry Hazard Assessment & Planning

☐ Review the substation's single-line diagram to confirm equipment status and isolation points.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Verify that all relevant equipment is properly locked out and tagged out according to established procedures.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Conduct an arc flash risk assessment to determine the incident energy and required PPE.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Establish and clearly mark the arc flash boundary based on the arc flash risk assessment.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Brief the entry team on the identified hazards, planned work, and emergency procedures.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Confirm reliable communication methods (e.g., two-way radios) are available and functioning.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Assess weather conditions (e.g., rain, lightning) and postpone entry if unsafe.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Review and understand the grounding procedures specific to the substation and equipment.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Confirm that the substation emergency plan is readily available and understood.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Inspect and clear the escape path of any obstructions.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Personal Protective Equipment (PPE) Inspection

☐	Inspect arc-rated clothing for tears, burns, or contamination; ensure appropriate arc rating for the task.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Test rubber insulating gloves per ASTM D120 standards; inspect for damage and proper voltage rating.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect leather protectors for rubber gloves for cuts, abrasions, and proper fit.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify safety glasses meet ANSI Z87.1 standards and are free from scratches or cracks.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect the arc-rated face shield for damage and ensure it is compatible with the arc flash hazard.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect the hard hat for cracks, dents, and proper fit; ensure it meets ANSI Z89.1 standards.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect safety boots for proper insulation, steel toe protection, and slip resistance.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify the voltage detector is functioning correctly using a known voltage source before entry.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect hearing protection (earplugs or earmuffs) for cleanliness and proper fit.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect FR balaclava for any tears or damage that could compromise arc flash protection.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Grounding & Bonding Verification

☐	Verify the grounding switch is in the closed (grounded) position for the equipment being worked on.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect grounding cables for damage, corrosion, and proper connection points.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Test the continuity of the grounding system using a low-resistance ohmmeter; record readings.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that ground clamps are securely attached to clean, unpainted surfaces.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Confirm that step potential mitigation measures (e.g., grounding mats) are in place and properly positioned.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Establish an equipotential zone around the work area using temporary grounding cables.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐	Inspect the substation grounding bus for corrosion and secure connections.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check the overall ground resistance of the substation grounding system; compare to acceptable limits.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that the size of the grounding conductors is adequate for the fault current.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Document all grounding measurements and observations in the substation log.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Substation Environment & Equipment Inspection

☐	Inspect transformer bushings and other oil-filled equipment for leaks; report any findings immediately.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Listen for unusual noises (e.g., arcing, humming) from transformers or other equipment.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect transformer cooling fans for proper operation and airflow.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check for signs of overheating on transformers and other equipment (e.g., discolored paint, hot spots).	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect insulators for cracks, chips, or contamination.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Check for signs of animal intrusion (e.g., nests, droppings) and take appropriate measures.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect the fire suppression system for proper functionality and charge.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify adequate yard lighting for safe working conditions, especially during nighttime operations.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Inspect the security fencing for breaches or damage that could allow unauthorized entry.	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Verify that minimum clearance distances are maintained from energized equipment.	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Findings

#	Item	Location	Severity	Action required
1				
2				
3				
4				
5				
6				
7				
8				

Signature

Inspector signature _____

Name _____

Date _____