

Re: Solar Installation Maintenance

An ESA-reviewed event involving a **solar photovoltaic (PV) installation** offers important lessons for those inspecting and maintaining these systems.

A worker received an electrical shock after connecting incompatible plug-and-play connectors while a damaged PV cable created an unintended path to ground. The event serves as a reminder that hazards are not always obvious and that system conditions should be verified before work begins. Many PV systems installed across Ontario have now been operating for more than a decade. As these systems age, regular inspection and maintenance can help identify issues before they affect safety, reliability or Code compliance.



Damaged PV cable



Faded single-line diagram



Fire-damaged solar panels

Before Beginning Work

Understanding the system and identifying potential hazards before work begins can help prevent incidents.

- Verify system configuration and review shutdown and isolation procedures
- Confirm equipment status and identify energized components and potential hazards

Inspect Equipment Condition

Regular inspections can help identify conditions that may affect safety or system performance. Look out for:

- Damaged conductors, connectors or cable insulation
- Missing cable supports or deteriorated cable ties
- Conductors resting on roofs or other surfaces and rodent activity or evidence of cable damage
- Standing water, drainage issues or debris accumulation

Maintain Safe Access

Safe access is essential for inspection, servicing and emergency response activities. Be sure to check for:

- Encroachments that reduce the required **1m working space** around serviceable equipment
- Vegetation encroaching on arrays, inverters or disconnects
- Storage, fencing or other site changes restricting access to disconnecting means or equipment

Check Labels and Documentation

Accurate information helps workers and emergency responders understand and safely interact with the system. Ensure that:

- Labels and rapid shutdown markings remain legible and securely attached
- Single-line diagrams remain available, legible and up to date
- Enclosures remain properly identified and in good condition