

nationalgrid

Photovoltaic (PV) incident response tactics



Take the following precautions when responding to a PV system fire:

- 1. Confirm National Grid has been notified.** Work with them in a unified command structure to interrupt electricity production and isolate the system from the power grid. Request subject-matter expert (SME) access, technical advice or response.
- 2. Size up the hazard to identify system type and location.** Walk 360 degrees around the structure to identify solar components that may not be immediately apparent, such as arrays, inverters and control switchgear.
- 3. Communicate the presence of a PV system to all personnel operating on the incident scene.** The Incident Commander should notify the dispatcher, who can sound an alert to all operating frequencies assigned to the incident.
- 4. Utilize full PPE including SCBA.** Burning PV panels may release toxic and potentially carcinogenic particulates. Be sure to fully decontaminate turnout gear after the incident concludes.
- 5. Always consider PV system components to be energized.** PV system components may carry voltage even after the main disconnect switch has separated the system from the grid and eliminated large-scale electrical production.
- 6. Maintain a safe distance of at least 3 feet from all PV system components.** Voltage can be transferred to you via direct contact or through tools that contact the array, inverters or wiring. Maintain 3 feet as a *minimum* safety clearance.
- 7. Use extinguishing agents on system components only after the system has been electrically isolated.** Contain a small fire utilizing Class C extinguishing agents such as dry chemical or carbon dioxide. For larger fires where Class C agents are impractical, apply water in a 30-degree fog pattern at 100 psi, from a distance of at least 30 feet.
- 8. Be alert for battery hazards.** Consider both the stored energy and the hazardous materials within the battery itself. Fires involving batteries should be addressed as a hazardous materials release. Wear full PPE/SCBA. Consult a qualified battery SME to advise on fire suppression timing and methods appropriate to battery type.
- 9. Be alert for structural failure and falling panels.** Roof-mounted PV systems add weight to a structure, increasing the risk of collapse. Falling panels are a potential hazard as well. Stay outside of the collapse zone (1.5 times the height of the structure) whenever possible.
- 10. Remain vigilant during overhaul activities.** Make sure all conduits and components have been appropriately identified and isolated. Work with National Grid personnel to permanently secure the system and disable any potential for the system to backfeed voltage, into either the occupancy or the power grid. Be aware that fires involving lithium-ion batteries can reignite hours or even days after initial extinguishing.