

	Structures with Solar Panels 600.01		TFCA Best Practices: N/A	
	Effective: 6-15-16	Revision:	Fire Chief: Eric Thompson 	

Purpose and Scope

The purpose of this guide is to actively increase ROFR member's knowledge base, confidence levels, and overall preparedness for working in or around structures with solar panels.

Policy

ROFR shall not conduct vertical ventilation unless it is absolutely essential to fire suppression operations and all other tactical options have been exhausted. Solar panels weigh approximately 2.5lbs per sq. ft. or 45lbs per 3'X6' panel. This adds significant weight to the roof structure depending on the size of the solar array. Systems added post construction typically are not engineered in the original design. If vertical ventilation is required ROFR personnel shall not cut through or directly adjacent to the solar panels for ventilation.

If roof access is required that is not on fire, extra caution shall be taken not to contact the electrical wiring in and around solar panels. At no time should a firefighter walk on solar panels.

During the initial 360° walk around and during the secondary size up the OIC shall look for solar panels and if discovered an announcement shall be broadcasted over the radio to create awareness to all arriving companies.

The Incident Commander should take into consideration the added extra weight upon the roof structure when it comes to structural stability, length of time crews have been interior, and the amount of fire impingement on the structure itself. Transitional attack tactics should be considered on these structures when possible, as the time for interior operations could be decreased.

Procedure

Disconnecting the Electricity

If it is determined that the electricity needs to be disconnected from the structure, ROFR shall turn off the DC disconnect if present then the electric meter shall be pulled. This will eliminate power from the electrical grid and from the solar panels from entering the structure. However if there is a backup battery bank some pre-selected electrical outlets may still have electricity running to them. Extra caution shall be used not to come in contact with electrical wiring even if electric meter has been pulled.

Additional Hazards

- During daylight hours there will still be electricity being generated through the solar panels up to the DC disconnect even if the DC disconnect has been turned off. Extra caution shall be taken not to come in contact with any wires running from the solar panels to the DC disconnect. If there is suspected damage to the wiring running from the solar panel to the DC disconnect and or damage to the solar panel black plastic tarping shall be placed over the solar panels to prevent additional electricity generation, short circuits or arcing, if it can safely be done.

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- If a fire occurs during the nighttime and there is suspected damage to the wiring running from the solar panel to the DC disconnect and or damage to the solar panel black plastic tarping shall be placed over the solar panels to prevent additional electricity generation, short circuits or arcing, if it can safely be done. It only take 2% sunlight to generate electricity from the panels.
- Scene lights from fire apparatus can provide enough illumination to generate several hundred volts of electricity.
- A Hot Stick will not recognize/alert on DC power regardless of sensitivity setting.
- Solar hot water panels can store water up to 175° F. Caution should be taken not to cut the water lines due to the scalding conditions that may occur.