

OPERATIONAL
CONSIDERATIONS
FOR PV INSTALLATIONS
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SOLAR SYSTEMS
How do they affect us as Firefighters??
– Unfamiliar Territory
– Hazardous Energy
– Weight
– Changes in Tactics

SOLAR SYSTEMS
Where do we find them?
Industrial
Commercial
Residential

Industrial



Industrial



Commercial



Commercial



Residential



Residential



Residential

- Why do we need these Guidelines?

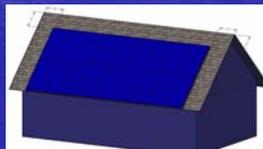


Guidelines for Installations

- Guidelines developed to assist us
- Cooperative with Industry
- Painful at times
- Consensus of the players
- So what does it mean to us as Firefighters?

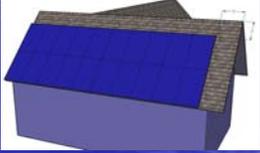
Residential Guidelines

- Gable or Single Ridge Roof
 - 2 – 3' Paths to the ventilation area
 - On each roof slope where modules are located
 - Modules located 3' below ridge



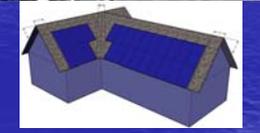
Residential Guidelines

- SFD – Hip Roofs
 - 3' Path to ridge on each roof slope
 - Pathway Located on Structural Strong Point
 - Bearing wall or other

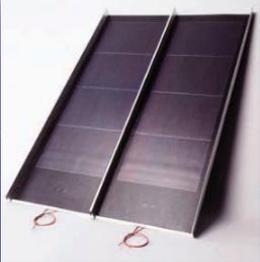



Residential Guidelines

- Hips and Valleys
 - Modules located no closer than 1.5' on either side if both sides have modules
 - If only one side, modules can go directly adjacent to the hip or valley

Integrated PV Systems

Commercial & Multi Residential

- 6' Perimeter Paths
 - Unless axis less than 250' then 4' perimeter
- Over structural members
- Paths on both Axis
- 4' Paths to skylights, vent hatches or standpipes



Commercial & Multi Residential

- Arrays no larger than 150 X 150
- 4' path w/4 X 8 vent cutouts every 20' alt.
- 4' path leading to skylight or hatch
- 8' or greater pathway



Commercial & Multi Residential



Safety Considerations

- Fire Indicators
- Structural Integrity
- Type of roof
 - Commercial or Residential
 - Light weight or Stick
- Areas of travel
 - Barge areas, open field, escape routes

Safety Considerations

- System Structure
 - Framing
 - Panels
 - Wiring



Safety Considerations



Safety Considerations



Safety Considerations



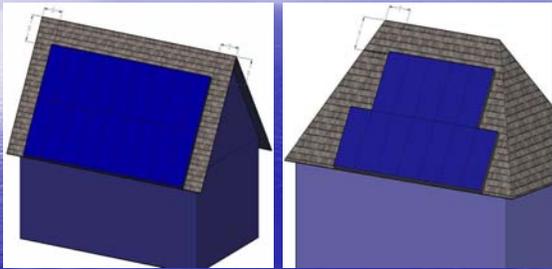
Ventilation

- Fire Indicators
- Array arrangement
- Ventilation Tactic
- Time
- Wind
- Experience

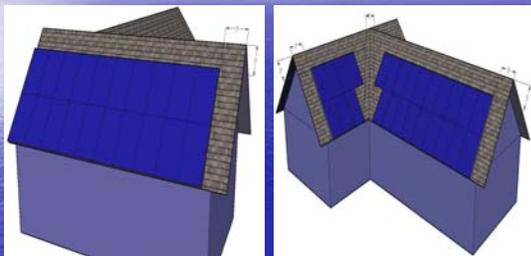
Ventilation

- Access and Egress
- Building Knowledge
- Ability of interior crews based on conditions
- Know when to say "Bye Now!"
 - Call the Stripping Truck

Ventilation



Ventilation



Natural Openings

- Utilize where possible
- Make sure have good access and egress
- Are they large enough to do the job
- Effect on fire –
 - Pressure
 - Volume

Natural openings



Natural Openings



Natural Openings



Additional Considerations

- Wiring
 - Conduit
 - Markings
- Disconnects
- Power from the Panels



Operational Considerations

Operating on these types of roofs should not be an extraordinary experience. We should employ the same situational awareness that we would on any fire. The challenge is being able to recognize the added hazards and overcome them.
