



URBAN ESS ISSUES FOR THE FIRE SERVICE

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Gerard T Fontana
Chief of Operations
Field Services
Boston Fire Department

LACK OF REGULATIONS

- Fire Service has not been involved with the advent of ESS
- Therefore systems have come online with some dangerous consequences
- Inverters and other equipment installed in less than ideal areas
- Both residential and commercial

URBAN ENVIRONMENT

- Fire Departments are being asked to approve large systems in the built environment
- Office buildings, hospitals, government buildings
- Working with fire service plan reviewers early in the process is crucial

CONCERNS

- Uninterruptable power supply
- Thermal runaway
- Long duration fires
 - Multiple re-ignitions
 - Dangerous products of combustion
 - Explosive atmospheres
 - Fire exposures to other equipment

WATER SUPPLY

- Copious supply needed
- Multiple applications necessary
- Containing runoff
- Apply from a distance due to dangerous off gasses and explosive properties
- Roof installations questionable because of this and overcrowding of existing equipment

LOCATION

- ESS systems will want to locate on roofs and in lower portions of buildings
- Most of population may be above system
- With a long duration event entire buildings may need to be evacuated
- Current planning practices do not allow for this

EVACUATION



EXPOSURES



BOSTON FIRE DEPARTMENT PLAN

- Secured external funding with Massachusetts Clean Energy Center
- Installing active 125kw system at training academy
- Installing active photovoltaic system on roof
- Will train over 2000 firefighters
- Current firefighters aren't even aware of the basics of these systems

MITIGATION

- Copious water
- Protect exposures
- Create exclusion zone
- Hazmat to monitor area
- Capture run off water
- Prepare for possible reignition (s)
- Locate, confine, extinguish

SIGNAGE



PAST INCIDENTS

- JAL Logan Airport
- Causeway street fire
- Surprise Arizona

CONCLUSION

- Energy storage is good
- Fire departments do not choose the risk
 - Adjust to the risk
 - Determine the risk for local mitigation
 - Train to the risk
 - Advise