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NFPA 855 Code Challenges in Deployments

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U.S. DEPARTMENT OF ENERGY BATTELLE
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RESDP Deployment Project: West River Electric Co-op

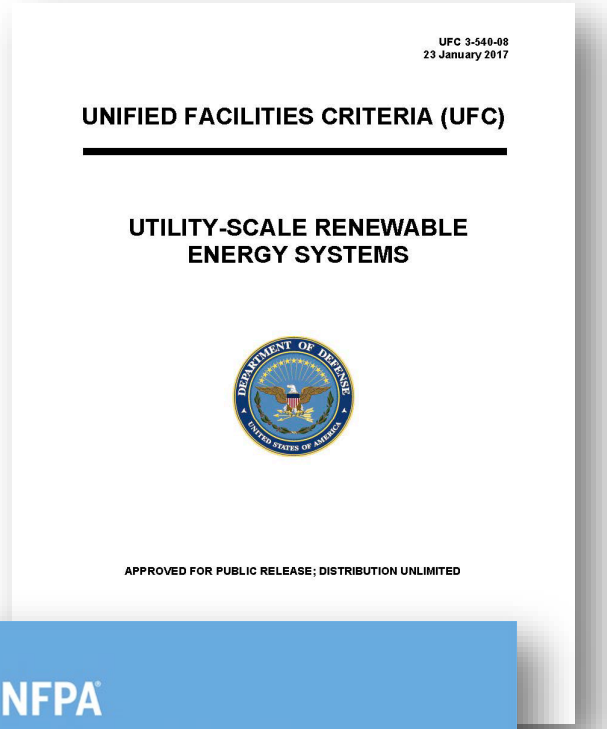
- Scope: 300kWh BESS to support DoD base critical flight operations.
- Support NRECA & SNL with techno/econ analysis, RFP, code compliance, commissioning, and emergency response training

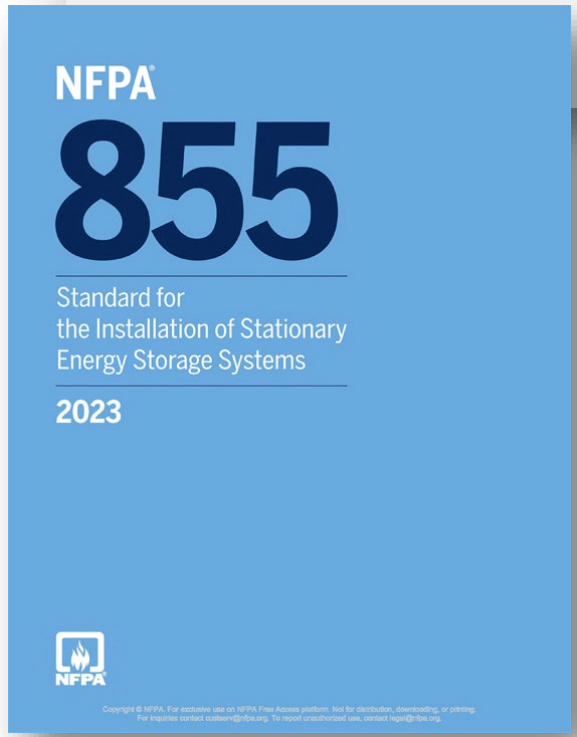
Timeline Impacts

- Project start 10/20
- Initial Completion target: 10/21
- Revised Completion target: 1/24
- Initial system capacity 250kW/250kWh for base operations (w/ generator B/U)
- Revised to 75kW/300kWh to supply airfield equipment off base due to siting limitations (w/ generator B/U).

Primary Code Gaps

- Ensure RFP clearly cites most current codes & standards (NFPA 855, UL9540, etc..)
- DoD facilities have more stringent siting requirements under UFC (100’ setback from buildings).
- Ensure vendor selects a system that is listed to UL9540 and has completed UL9540A fire testing.
- Verify requirements for fire suppression system and compliance if needed.
- Verify method of explosion control and that it meets NFPA 69 or has been part of UL9540A fire test evaluation.





Lessons Learned

- Ensure siting requirements for jurisdiction.
- Limited UL9540 listed equipment options for smaller BESS (<1MWh).
- Manufacturers unclear with all NFPA 855 requirements.
- Explosion control methods lacking from many existing BESS. IntelliVent™ was selected option for vendor.
- Manufacturers' lack fire protection experience to design adequate protection mitigations.
- Integration problems of fire alarm control panels (FACP) into existing facilities.

Courtesy: TROES

Integration is Key

IntelliVent™

- Fail safe design
- UL listed access control equip
- 600lb maglocks
- Replaces mechanical locks

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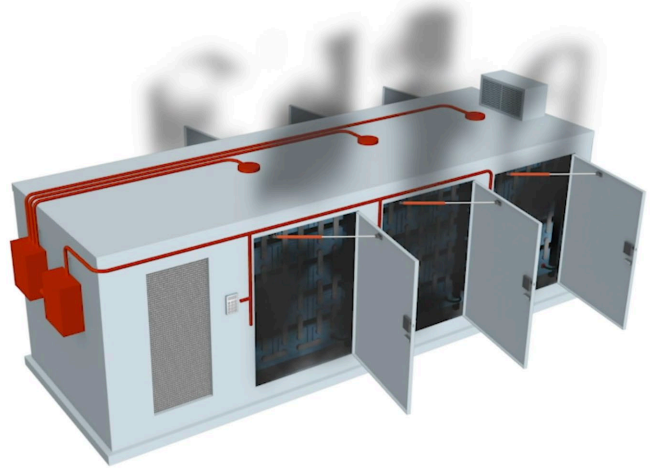
Best Practices

- Ensure vendor has clear understanding of regulatory requirements (code experts).
- If UL listing is not available, verify acceptability of field evaluation and SOW for selected NRTL and process.
- Clear SOW for all aspects of system integration.
- If working with vendor developing new product identify potential disconnects with overseas manufacturing vs US engineering. Establish regular production updates.
- Ensure fire protection engineering firm has evaluated the design/integration of explosion control system and FACP signals management.



Design to best practices, not minimum code

Thank You!

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