

NERC Lessons Learned:

“Substation Fires: Working with First Responders”

“Current Drone Usage”

Donnie Bielak
Reliability Engineering

- **Title**
 - Substation Fires: Working with First Responders
- **Source of Lesson Learned**
 - WECC
- **Date Published**
 - February 26, 2019

- Two substation fire events occurred that highlight the importance of having an incident response procedure and command structure
- Arc flash on a 12 kV feeder circuit breaker within an enclosed substation
 - Fire department dispatched to extinguish the fire but ability to respond was delayed
- 230 kV transformer high-side bushing failed in an outdoor substation
 - An incident command post was established across the street promptly on the arrival of utility and fire department personnel but without needed equipment for transformer fire suppression

- Establish a working relationship with local fire departments in advance
- Establish clear Incident Commander role
- No forced entry into unmanned substation
- Specific procedures for transformer fires
- Additional advice for first responders provided

- **Title**
 - Current Drone Usage
- **Source of Lesson Learned**
 - Florida Reliability Coordinating Council, Midwest Reliability Organization, ReliabilityFirst, SERC Reliability Corporation, Texas Reliability Entity, WECC
- **Date Published**
 - February 28, 2019

- Some entities have begun using unmanned aerial vehicles (UAVs), commonly called “drones,” for various purposes resulting in reduced cost, increased safety, and more schedule flexibility
 - Storm Damage Recovery
 - Line, Structure, and Substation Inspections
 - Station Security
 - Generation Inspections

- Cost/Benefit
- Internal rules for usage
- Guidelines for patrolling lines
- Drone limitations
- Recovery on loss of guidance signal
- FAA regulatory requirements

- https://www.nerc.com/pa/rrm/ea/Lessons%20Learned%20Document%20Library/20190202_Substation_Fires_Working_with_First_Responders.pdf
- https://www.nerc.com/pa/rrm/ea/Lessons%20Learned%20Document%20Library/20190201_Current_Drone_Usage.pdf