

# FirstEnergy UAS Program Development

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# Safety

- **Core Value: We keep safety first in every action, every day**
  - Decrease the need to work employees at heights
  - Reduce use of manned aircraft for low altitude comprehensive inspections
- **UAS inspection techniques can be viewed as a mitigating strategy for legacy inspection hazards.**
  - Any scenario where hazards associated with work at heights or electrical contact are present, workers, supervisors and management should look to the feasibility of using UAS to replace the existing technique

# UAS Center of Excellence

## ■ FE UAS Services

- Safety
- Pilots & Crews
- Mission Specific Training
- Missions / Flights
- Maintain Airframes
- Data Management / Reports

## ■ FE Flight Operations

- Policies
- Governance



# Drone Program Development Considerations

## ■ Senior Management Buy-In

- Risk Tolerance
- Funding \$\$\$\$



## ■ Engaged FE Flight Operations and a consultant experienced with utility infrastructure inspections

- Safety Program & Safety Management System
- Crew Configurations
- Initial Pilot Training
- Drone Hardware Selection
  - Chinese Manufactured Drones ????
  - National Defense Authorization Act (2021) Section 1260H
- Drone PM Program

# Drone Program Development Considerations

## ■ FAA Part 107 Licensing

- Initial Test at FAA testing center
- Recertify every 2 years via on-line test:
  - [https://www.faasafety.gov/gslac/ALC/course\\_content.aspx?enroll=true&cID=677](https://www.faasafety.gov/gslac/ALC/course_content.aspx?enroll=true&cID=677)

## ■ Insurance Considerations

## ■ Data Security

- Cloud vs. internal server only

## ■ Internal Operating Procedures and Notifications

- Internal notifications for drone inspections
- UAS Minimum Approach Distance
- Deconfliction process with other aerial assets

# Drone Program Development Considerations

- **Airspace vetting**
- **Ongoing Drone Pilot Training**
  - Additional Pilot Training
- **Abnormal Operating Condition Reports**
- **Drone upgrades and purchases**
- **Software and firmware enhancements**



# Thank You



# Appendix:



# Mission Specific Training

## ■ Training Evolution

- Mission Specific
  - Experts determine risks associated with proposed inspection
  - Create training program to minimize these risks
  - Classroom and **hands-on** mission training
  - Initial flights are observed by an expert UAS Pilot
- Examples
  - Transmission Lines & Structures
  - Distribution Lines & Structures
  - Communication Towers
  - Right of Way
  - Industrial Building



# Pilots and Crews

## ■ Crew

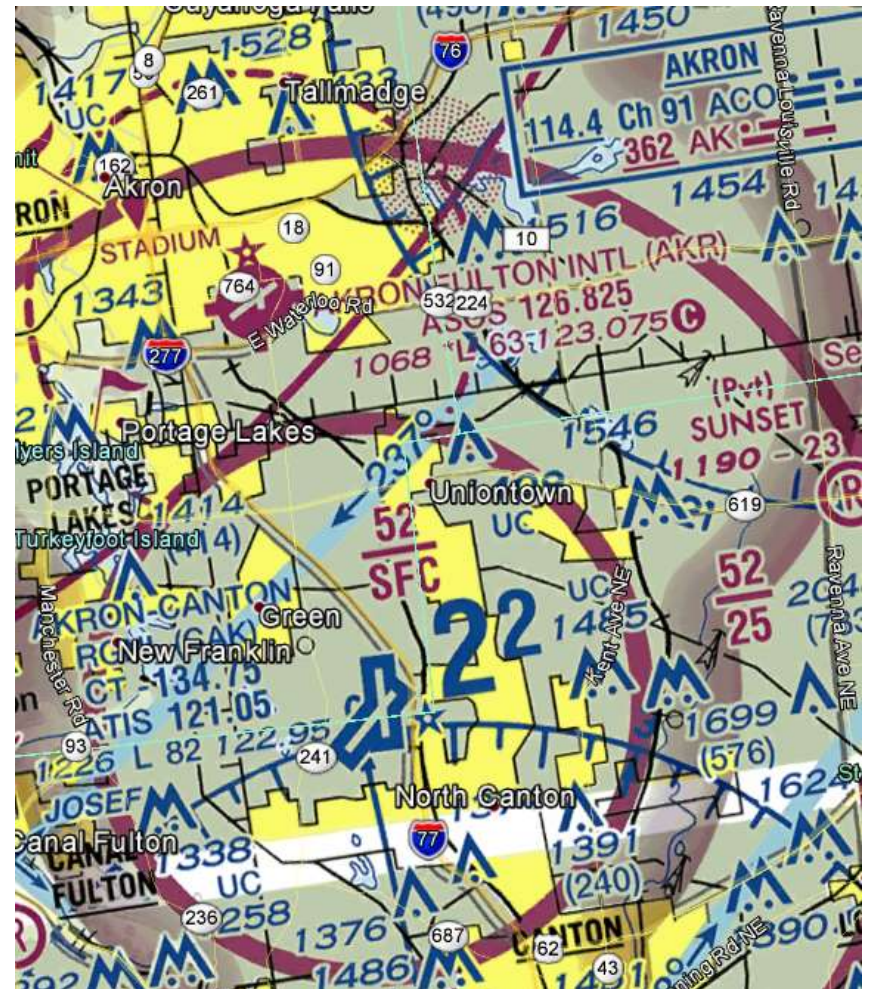
- Flight Crew Consists of a Pilot & Sensor Operator

## ■ Pilots

- Certified through the FE Sanctioned UAS Advanced Course
- FAA 107 *Remote Pilot* Certified
- 40 hour UAS Pilot Proficiency Program
- Recurrent Training

## ■ UAS Contractors

- Same standards apply
- Must be approved by FE Flight Ops
- Insurance Requirements



# Airframe

- **Robust UAS Maintenance Program**

- Airframe Log Maintained
  - Total Flights
  - Hours In-Service
  - Maintenance Issues
  - Replaced Components
- PM Program
  - Flight Based Inspections
  - Component Replacement
- Use only OEM Components

