Agenda

• Critical Infrastructure

• How Critical Infrastructure is Powered

• How Electrical Utility Information is Organized

• How CVG Reacts to Electrical Outages
Why is Utility Power Important?

With **Consistent** and **Reliable** Utility Power, our airport will be **The Airport of Choice to Work For, Fly From, and Do Business With.**

Electricity gives life and function to our **Critical Infrastructure**, which provide essential services to our passengers, customers, and our community.
Critical Infrastructure

Runway 18R/36L
ARFF Station 2
Runway 18C/36C
Runway 9/27
West Electrical Vault
Emergency Operations Center
Stormwater Treatment Plant

Aircraft Fuel Storage/Transfer
High Voltage Distribution Building
Airport Police Department
Terminal / Passenger Facilities
Electrical Vault 12
ARFF Station 1
Airport Surveillance Radar
Air Traffic Control Tower
Runway 18L/36R
DHL Cargo Facilities
Where does Electricity Come From?
Critical Infrastructure – Hebron 45

ARFF Station 2
Critical Infrastructure – Constance 43
Critical Infrastructure – Limaburg 43
Critical Infrastructure – Limaburg 41

- Runway 18R/36L
- Runway 9/27
- West Electrical Vault
- DHL Cargo Facilities
# How do we Organize this Information?

<table>
<thead>
<tr>
<th>Feed</th>
<th>Impacted Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donaldson 43</td>
<td>Electrical Vault 12, Air Traffic Control Tower, ASR-9 Radar Site, South ARFF Station, SADF Pump Station, South Sanitary Pump Station, SADF Pump Station (S-G-PS-1), and Glycol Tanks, AA Hanger (Envoy/PSA), South Sanitary Pump Station, DPU Center, Emergency Operations Command (EOC), South Sanitary Tunnel, Field Maintenance Area 1, 3, &amp; 5, Cincinnati Bell Building, CVG Centre, Fire Training Pit, Flight Safety IFC, DPU MRO Hangar, Emergency Maintenance Hangar / Delta Jet Hangar, Meyer Tool Hangar, South Airfield Drive Street Lights</td>
</tr>
<tr>
<td>Constance 41</td>
<td>Police Department, Fuel Farm, Concourse B: T3E-2, T3E-3, T3E-4, ASR-9 Radar Site, North Terminal South Side &amp; Outer, High Voltage Building, AGT Tranit West, Esc/Elev (NC)</td>
</tr>
<tr>
<td>Constance 43</td>
<td>Concourse B: T3E-2, T3E-3, T3E-4, North Terminal South Side &amp; Outer, High Voltage Building, AGT Tranit West, Esc/Elev (NC)</td>
</tr>
<tr>
<td>Hebron 45</td>
<td>North ARFF Station, IT Assets at N ARFF, North Sanitary Pump Station, Storm Water Pump Station NWPSFLA, NWPSFLA NWPSFLA, KY 20 Tunnel, Value Park Long Term Parking, Facilities Maintenance, Glycol Processing Recycling Facility (GPRF), Post Office, Central Warehouse, Thrifty Car Rental</td>
</tr>
<tr>
<td>Lima 41</td>
<td>West Vault, DHL Complex, Norwater Pump Station NWPSFLA, Fleet Maintenance Building-N, Wendell Ford Street Lights</td>
</tr>
<tr>
<td>Lima 43</td>
<td>Main Terminal East Side, Concourse A, Short Term Parking Lot/Lease, Concourse B: T3E-1, T3E-3, T3E-5, NE-4, Limited Level ESC/TEL, Doubletree Hotel, Terminal Drive Street Lights, Esc/Elev (NC), Hotel/Budget Rental Car, National/Dollar Rental Car, Norto Rental Car, FEAM Bldg, Emerg Freight (K-9), Sign Shop, KACAR Cargo Bldg, Escort Shack</td>
</tr>
<tr>
<td>Oakbrook 41</td>
<td>Stormwater Treatment Plant, South Detention Ponds, General Electric Building, General Electric Building</td>
</tr>
<tr>
<td>Owens Electric</td>
<td>North Detention Pond, KACAR Ballfields, General Electric Building</td>
</tr>
</tbody>
</table>

Notes: Impacted Assets include various facilities and departments within the CVG airport operations.
How do we Organize this Information?

Describes Criticality and if Emergency Generator is Available

<table>
<thead>
<tr>
<th>Key</th>
<th>Critical Asset</th>
<th>Critical Asset with KCAB Generator</th>
<th>Critical Asset with Tenant Generator</th>
<th>Sub-Critical Asset</th>
<th>Sub-Critical Asset with KCAB Generator</th>
<th>Sub-Critical Asset with Tenant Generator</th>
<th>Non-Critical Asset</th>
<th>Non-Critical Asset with KCAB Generator</th>
<th>Non-Critical Asset with Tenant Generator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed</td>
<td>Impact Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donaldson 43</td>
<td>Electrical Vault 12</td>
<td>Air Traffic Control Tower</td>
<td>ASR-9 Radar Site</td>
<td>South ARFF Station</td>
<td>SADF Pump Station (G-G-PS-1) and Glycol Tanks</td>
<td>AA Hangar (Envoy/PSA)</td>
<td>South Sanitary Pump Station</td>
<td>DPJ Center (FBO)</td>
<td>Emergency Operations Center (EOC)</td>
</tr>
<tr>
<td>Constance 41</td>
<td>Police Department</td>
<td>Fuel Farm</td>
<td>Concourse B; T2E-2, T3E-1, T4E-2</td>
<td>Esc/Elev ID</td>
<td>Gates NE-23 NE-20</td>
<td>Employee / Economy Lot</td>
<td>Pumphouse</td>
<td>North Cincinnati Bell Building</td>
<td>Esc/Elev (NC)</td>
</tr>
</tbody>
</table>
Who has this Information?

Maintenance Groups

Airport Communications Center
How does CVG use these tools to mitigate the effects of utility power loss?

*What is the process?*
Problem Identification

• Someone will report a power loss to the Airport Communications Center (ACC)

• Simultaneously, Building Management Systems (BMS) will report power loss
Problem Identification

• A leader/supervisor within the Maintenance Division will assume the role of, “Person-in-Charge,” (PIC) for the event
  • Will notify the ACC/Dispatch of their role
  • Will ensure that Duke Energy is notified
  • Will direct the ACC/Dispatch to send out an, “Everbridge Page”
  • Will direct others to ascertain source of outage
<table>
<thead>
<tr>
<th>Feed</th>
<th>Impacted Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donaldson 43 Electrical Vault</td>
<td>AAHangar, NorthCincinnatiFireStationBuilding, Esc/Elev (NC), Mertzies (ASIG) Maint, DeltaHangar, DeltaCargoBuildings, TaxiBullpen, GateGourmet, StandardParkingMaintBldg</td>
</tr>
<tr>
<td>Constance 41 PoliceDepartment</td>
<td>GatesNE-23Esc/Elev (NC), Menzies(ASIG)Maint, DeltaHangar, DeltaCargoBuildings, TaxiBullpen, GateGourmet, StandardParkingMaintBldg</td>
</tr>
<tr>
<td>Constance 43 Concourse B: TIE-1, TIE-1, TIE-1, TIE-2, Main TerminalWestSideBChiller</td>
<td>Esc/Elev(C), AGTTrain, WestEsc/Elev(NC), GlycolProcessingRecyclingFacility(GPRF)</td>
</tr>
<tr>
<td>Hebron 45 NorthARFFStation</td>
<td>NorthSanitaryPumpStation, StormWaterPumpStationNSWPS1A, NSWPS1A, NSWPS1B, KY20Tunnel, ValuePark(LongTermParking), FacilitiesMaintenance(GPFS), PostOffice, CentralWarehouse, ThriftyRentalCar</td>
</tr>
<tr>
<td>Limburg 41 WestVault</td>
<td>DHLComplex, FleetMaintenanceBuilding44, WendellFordStreetLights</td>
</tr>
<tr>
<td>Limburg 43 MainTerminalEastSide</td>
<td>Esc/Elev(C), AGTTrain, EastNE-3, NE-4, AARampLevelESC/ELE, DoubletreeHotel, TerminalDriveStreetLights, Esc/Elev(NC), Avis/BudgetRentalCar, National/DollarRentalCar, HertzRentalCar, FEAMBldg, EmoryFreight(K-9), SignShop, KCBCargoBldgs, EscortShack</td>
</tr>
<tr>
<td>Oakbrook 41 StormwaterTreatmentPlant</td>
<td>SouthDetentionPonds, GeneralElectricBuilding</td>
</tr>
<tr>
<td>OwenElectric NorthDetentionPond</td>
<td>XCBABallfields, GeneralElectricBuilding</td>
</tr>
</tbody>
</table>
Repair Coordination

• OPP will maintain contact with Duke Energy in order to maintain a Common Operating Picture:
  • Scope of the Outage
  • Estimated Restoration Time
  • Establish Linkup Time/Location
  • Assist with Repair/Restoration in any way Possible
…All the While…

• Contingency Plans are Activated
• CVG Employees are continuing to look for additional issues resulting from outage or additional outages
• CVG Employees are checking to ensure Emergency or Backup Generators are running
• All reports are sent via radio on open-channel

*Safety and Security of the Airport, our Passengers, and our Employees must be Maintained during a power outage*
Power is Restored

• CVG Employees Restart Equipment
• Primary Feeders are Utilized
• Backup/Emergency Generators are checked to ensure they switch off 30 minutes after utility restoration
• Close-out Reports
• Incident Assessments
Questions?

Electrical Utilities and Outage Procedures

Matt Houston
Sr. Operations and Process Manager