Understanding Storms & How They Impact Power Utility Fleet Movement

Educational Webinar
May 2014
Why Is Regional Fleet Movement Across State Lines Important?

Dec 6, 2013
TX, OK, AR Ice Storms
Dec 6th, 2013 Conf Calls/Email Summary: FEMA & DOE supported the outreach to states to join the calls, 18 states engaged in 3 conf calls, early detection of several state declarations, fleet movement enhanced, states educated on call process, recommendations for improved received

### Actual Private Sector Data Shared w/ States

**Fleet Movement Coordination Initiative**

### Multi-State Fleet Movement Data

(This information is approximate and may change without notice)

| States       | Departure Date | ETA       | Intra/Inter | FTE | Cross  | PA | OH | WV | KY | FL | AL | MS | GA | MD | VA | NC | LA | KA | AR | OK | TX | MO | TN | State  |
|--------------|----------------|-----------|-------------|-----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|
| New York     | 12/5/2013      | 12/6/13 pm| Intra       | 50  | X      | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| Florida      | 12/5/2013      | 12/6/2013 | intra       | 470 | X      | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| Georgia      | 12/5/2013      | 12/6/2013 | Intra       | 100 | X      | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| Pennsylvania | 12/5/2013      | 12/6/13 pm| Intra       | 40  | X      | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| Maryland     | 12/5/2013      | 12/6/13 pm| Intra       | 170 | X      | X  | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| South Carolina | 12/5/2013    | 12/6/2013 | Intra       | 100 | X      | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Arkansas |
| Alabama      | 12/5/2013      | 12/6/2013 | Intra       | 100 | X      | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Texas  |
| Mississippi  | 12/5/2013      | 12/6/2013 | Intra       | 42  | X      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Texas  |
| Florida      | 12/5/2013      | 12/6/2013 | Intra       | 52  | X      | X  | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    |    | Texas  |
| Georgia      | 12/5/2013      | 12/6/2013 | Inter       | 200 | X      | X  | X  | X  | X  |    |    |    |    |    |    |    |    |    |    |    | Oklahoma|
| Kansas       | 12/5/2013      | 12/6/2013 | Intra       | 25  | X      | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Oklahoma|

Total: 1579
Webinar Objective:

To Better Understand Storms & How They Impact Power Utility Fleet Movement

Desired Webinar Outcome:

A Better Understanding of Regional, Multi-State Fleet Movement Factors, Decision Process and Probabilities of Activation
What Are Regional Mutual Aid Groups (or RMAGs)?

Local Electric Company

Regional RMAG

Local Electric Company

Regional RMAG

Local Electric Company

- Great Lakes Mutual Assistance Group (GLMA)
- Midwest Mutual Assistance Group (MMA)
- North Atlantic Mutual Assistance Group (NAMA)
- Southeastern Electric Exchange (SEE) Mutual Assistance Committee
- Texas Mutual Assistance Group (TXMA)
- Western Energy Institute (WEI)
- Wisconsin Utilities Association (WUA)
Example RMAG – SEE Working Group

Member Companies

- AEP Texas Central Company
- AEP Texas North Company
- Appalachian Power Company
- Columbus Southern Power
- Indiana Michigan Power
- Kentucky Power Company
- Ohio Edison Company
- Public Service of Oklahoma
- SW Electric Power Company

- Duke Energy
- Duke Energy Carolinas, Inc.
- Duke Energy Indiana, Inc.
- Duke Energy Kentucky, Inc.
- Duke Energy Ohio, Inc.
- Duke Energy Florida, Inc.

- Entergy
- Entergy Arkansas, Inc.
- Entergy Gulf States Louisiana, LLC
- Entergy Louisiana, LLC
- Entergy Mississippi, Inc.
- Entergy New Orleans, Inc.
- Entergy Texas, Inc.

- CenterPoint Energy
- CenterPoint Energy Louisiana

- FirstEnergy
- Cleveland Electric Illuminating Co.
- Jersey Central Power & Light Co.
- Metropoleth Electric Company
- Monongahela Power Company
- Ohio Edison Company
- Pennsylvania Electric Company
- Pennsylvania Power Company
- The Potomac Edison Company
- The Toledo Edison Company
- West Penn Power Company

- CenterPoint Energy
- CenterPoint Energy Louisiana

- Dominion
- Virginia Electric and Power Company

- Kentuckiana Utilities Company
- Louisville Gas & Electric Company
Private Sector Panelists

American Electric Power (AEP) – Jim Nowak
- Jurisdictions – Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, and West Virginia
- Regional Mutual Assistance Groups – MMAG, GLMA, TXMAG, SEE

First Energy (FE) – Tony Hurley
- Jurisdictions – Ohio, Pennsylvania, West Virginia, Maryland, New Jersey
- Regional Mutual Assistance Groups – NAMA, GLMA, SEE

Pepco Holdings Inc. (PHI) – Tom Born
- Jurisdictions – DC, Delaware, Maryland, New Jersey
- Regional Mutual Assistance Groups – NAMA, SEE, Maryland Utilities

Southeastern Electric Exchange (SEE) – Scott Smith
- Jurisdictions – Electric Sector Association
- Regional Mutual Assistance Groups – SEE Mutual Assistance Committee

Southern Company – Aaron Strickland
- Jurisdictions – Alabama, Georgia, Mississippi, Florida
- Regional Mutual Assistance Groups – SEE, TXMAG
• Customers: 5.3 million
• Serving parts of 11 states
• Service Territory: 200,000 square miles

AEP’s Operating Companies
• AEP Ohio
• AEP Texas
• Appalachian Power (APCo)
• Indiana Michigan Power
• Kentucky Power
• Public Service Company of Oklahoma (PSO)
• Southwestern Electric Power Company (SWEPCo)
• More than 6 million customers.
• Serving parts of 6 states.
• Service territory covers 65,000 square miles.
• Serving about 2 million American customers.
• Serving parts of 4 states.
• Service territory covers 5000 square miles.

Atlantic City Electric – New Jersey
Delmarva Power – Delaware and Maryland
Pepco – DC and Maryland
Mission:
• To promote the common interests and growth of its members; and
• To develop and enhance the human, operational and technical resources of members companies to the fullest.
• To provide coordination of storm restoration services to impacted member companies.

Activities Summary
• Over 25 working group meetings each year
• Special workshops as needed
• Benchmarking surveys—over 175 annually
• Coordination of Mutual Assistance events – 8 to 10 events annually
• Annual Conference & Trade Show
• Serving about 5 million American customers.
• Serving parts of 4 states.
• Service territory covers 120,000 square miles.

Alabama Power
Georgia Power
Gulf Power – Florida
Mississippi Power
Tornadoes

Snow Storms (Wet/Dry)

Ice Storms (Thickness/Wind)

Thunderstorms (Wind/Lightning)

Hurricanes
Snow Storms (Wet/Dry)
Ice Storms & Freezing Rain
Tornadoes

**ENHANCED FUJITA SCALE**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Speed Range</th>
<th>Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EF-0</td>
<td>(65-85 MPH)</td>
<td>LIGHT</td>
</tr>
<tr>
<td>EF-1</td>
<td>(86-110 MPH)</td>
<td>MODERATE</td>
</tr>
<tr>
<td>EF-2</td>
<td>(111-135 MPH)</td>
<td>CONSIDERABLE</td>
</tr>
<tr>
<td>EF-3</td>
<td>(136-165 MPH)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>EF-4</td>
<td>(166-200 MPH)</td>
<td>DEVASTATING</td>
</tr>
<tr>
<td>EF-5</td>
<td>(200+ MPH)</td>
<td>INCREDIBLE</td>
</tr>
</tbody>
</table>

**Totals through May 23**

<table>
<thead>
<tr>
<th>Total</th>
<th>Confirmed EF0</th>
<th>Confirmed EF1</th>
<th>Confirmed EF2</th>
<th>Confirmed EF3</th>
<th>Confirmed EF4</th>
<th>Confirmed EF5</th>
</tr>
</thead>
<tbody>
<tr>
<td>224*</td>
<td>74</td>
<td>96</td>
<td>35</td>
<td>14</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

14 additional Tornadoes on 05/26/14
Tropical Storms and Hurricanes

<table>
<thead>
<tr>
<th>Category</th>
<th>Wind speed (mph)</th>
<th>Storm surge (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>156</td>
<td>More than 18</td>
</tr>
<tr>
<td>4</td>
<td>131–155</td>
<td>13–18</td>
</tr>
<tr>
<td>3</td>
<td>111–130</td>
<td>9–12</td>
</tr>
<tr>
<td>2</td>
<td>96–110</td>
<td>6–8</td>
</tr>
<tr>
<td>1</td>
<td>74–95</td>
<td>4–5</td>
</tr>
</tbody>
</table>

Additional classifications:
- Tropical storm: 39–73, 0–3
- Tropical depression: 0–38, 0
Hot Summer & Cold Weather Threats
## Type of Fleet Movement

<table>
<thead>
<tr>
<th>Trouble Type</th>
<th>Fleet /Personnel Type Dispatched</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Line Issues</td>
<td>Company Employee, <em>Distribution/Transmission</em></td>
</tr>
<tr>
<td>Power Line Issues</td>
<td>Sub-Contractor, <em>Distribution/Transmission</em></td>
</tr>
<tr>
<td>Trees Down</td>
<td>Sub-Contractor</td>
</tr>
<tr>
<td>Damage Assessors</td>
<td>Company Employee</td>
</tr>
<tr>
<td>Logistics</td>
<td>Company Employee</td>
</tr>
<tr>
<td>Substations</td>
<td>Company Employee</td>
</tr>
</tbody>
</table>
Initiating Regional Fleet Movement

Local Electric Company

Local Company Contacts RMAG for Support

Regional RMAG

RMAG convenes conference call with its member companies to discuss

Regional RMAG

If RMAG determines the need, RMAG initiates Regional Fleet Movement Coordination Process with multiple states

Fleet Working Group

Email with sensitive information sent to states requesting guidance on specific fleet movement issues like toll/weigh stations, declarations, etc.. State provide info via email process managed by Fleet WG staff

Multiple States
How Do Multiple States Support Regional Fleet Movement?

Pass Through States Are The Key. They Can Expedite Movement With Guidance Through Toll/Weigh Stations, Restricted Roadways, Expedited Permits/Waivers & Other Related Information
### What Information Is Shared During Regional Fleet Movement?

<table>
<thead>
<tr>
<th>Private Sector</th>
<th>Public Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td># of people, vehicles in fleet</td>
<td>Copies of declarations of emergency or information on a state’s intent to issue a state’s declaration of emergency</td>
</tr>
<tr>
<td>Points of origin and destinations</td>
<td>Specific guidance within declarations regarding fuel, roadways, etc.</td>
</tr>
<tr>
<td>Estimated Departure and Arrival Times</td>
<td>Guidance on use of restricted roads, getting thru toll/weigh stations faster, what routes to use</td>
</tr>
<tr>
<td>Type of Trucks in fleet</td>
<td>Expediting permit/waiver requests</td>
</tr>
<tr>
<td></td>
<td>Any relevant state specific information unique to their state</td>
</tr>
</tbody>
</table>
Online Resources

• Regional Fleet Movement Coordination Service
  • http://www.fleetresponse.org/productsservices/multi-state-movement/

• Fleet Movement Initiation Process Video
  • http://youtu.be/MOW8wTX1M_U

• CATEX 2014 Annual Exercise Series
  • http://www.fleetresponse.org/productsservices/annual-exercise/

• Fleet Working Group Annual Report
  • http://www.fleetresponse.org/resources/fleet-wg-reports/2013-annual-report/
Questions/Contacts

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