Electric Grid Security
Southern States Energy Board

July 18, 2015
Georgia Transmission Corporation

- A transmission only cooperative owned by 38 Georgia Electric Membership Cooperatives
Georgia Transmission Corporation

- Plan, build and maintain transmission assets for our Members
  - Over 3000 Miles of Transmission Lines
  - Over 650 Substations
  - 288 Employees
Family of Companies

- Oglethorpe Power Corporation
- Georgia System Operations Corporation
- Georgia Transmission Corporation
- Georgia EMC
The Integrated Transmission System (ITS)

– Under ITS agreements, transmission facilities in the state are jointly planned and operated by Georgia Transmission, Georgia Power Company, MEAG Power and Dalton Utilities
– Facilities are separately built, owned and maintained
– Established in 1974, the agreements prevent duplication of investment and expenses
– Covers about 17,500 miles of the state’s 18,500 miles of transmission lines. (1,000 miles owned by TVA and former Savannah Electric)
THREATS FACING THE ELECTRIC GRID
Physical Attack
Cyber Attack
Mercedes F 015

Cyber-Physical Systems
Cyber-Physical Systems
# Bulk Electric System Security Performance

## Table 9.1: Reportable Cyber Security Incidents

<table>
<thead>
<tr>
<th>Metric</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of Reportable Cyber Security Incidents</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of Reportable Cyber Security Incidents resulting in loss of load</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table 9.2: Reportable Physical Security Events

<table>
<thead>
<tr>
<th>Metric</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of reportable events as a result of physical security threats to a Facility or BES control center</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of reportable events that caused physical damage or destruction to a Facility</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of reportable events as a result of physical security threats to a Facility or BES control center, or that caused physical damage or destruction to a Facility, that resulted in a loss of load</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Sector-wide grid security exercise
• Simulated coordinated cyber and physical attack on the Bulk Power System
• Participation from
  – Electricity sector (U.S., Canada, and Mexico)
  – Security and electric industry vendor community
  – NERC
  – Government agencies
  – Academia
Mandatory Standards

• Critical Infrastructure Protection (CIP) Standards
  – Cyber Security Standards (CIP Version 5)
  – Physical Security Standards (CIP-014)
• Penalties and Sanctions up to $1M per day per incident
NIST Cybersecurity Framework
Coordination with Government Partners

• State Government
  – Emergency Management Authority
  – State ISACs & Fusion Centers
Coordination with Industry Partners

NRECA

Edison Electric Institute

NERC

APPA

ES ISAC

North American Transmission Forum

EPRI

ESCC

Electricity Subsector Coordinating Council
Georgia Transmission
QUESTIONS