

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

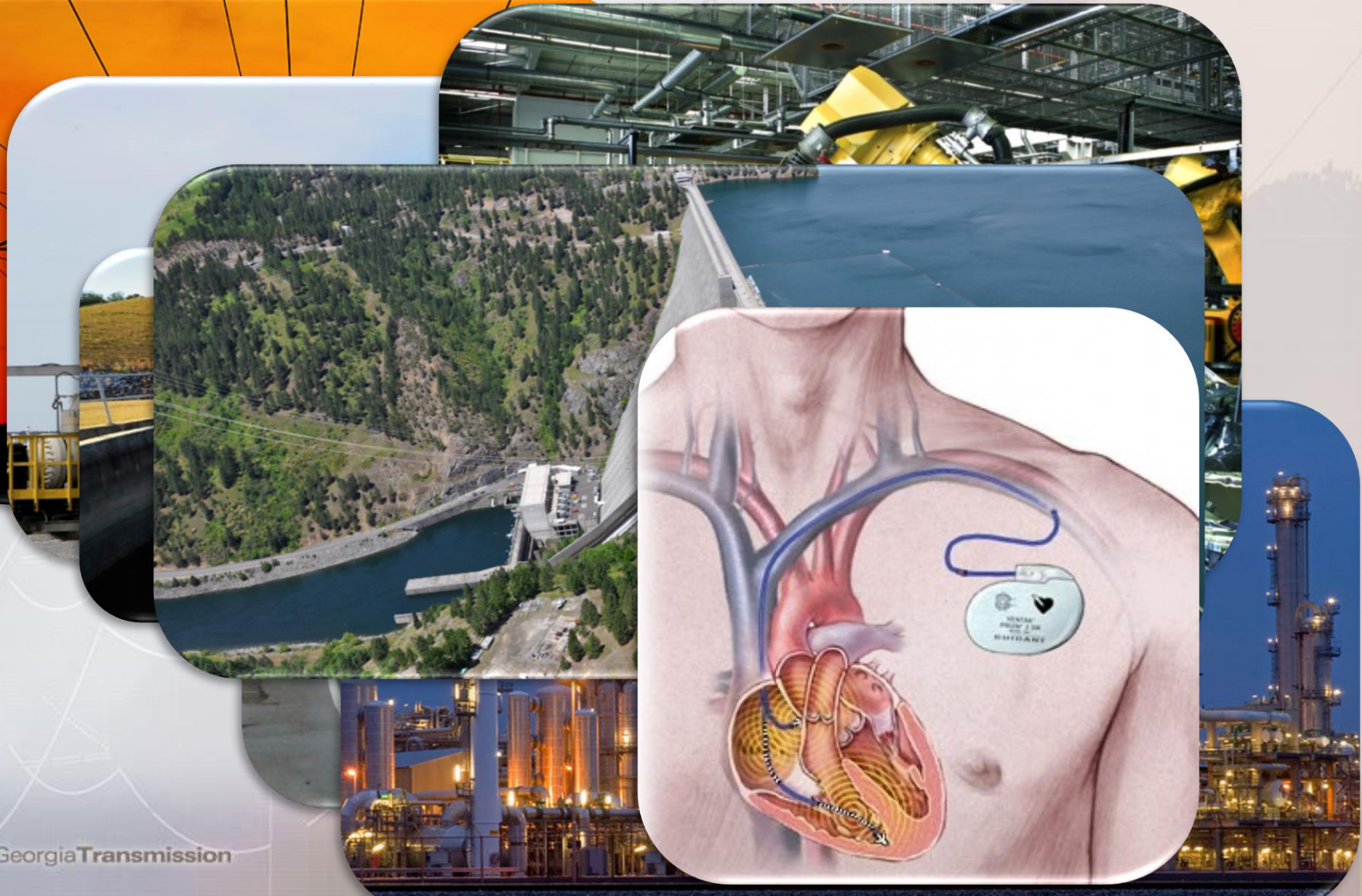


Mercedes F 015

Cyber-Physical
Systems



Cyber-Physical Systems



Bulk Electric System Security Performance

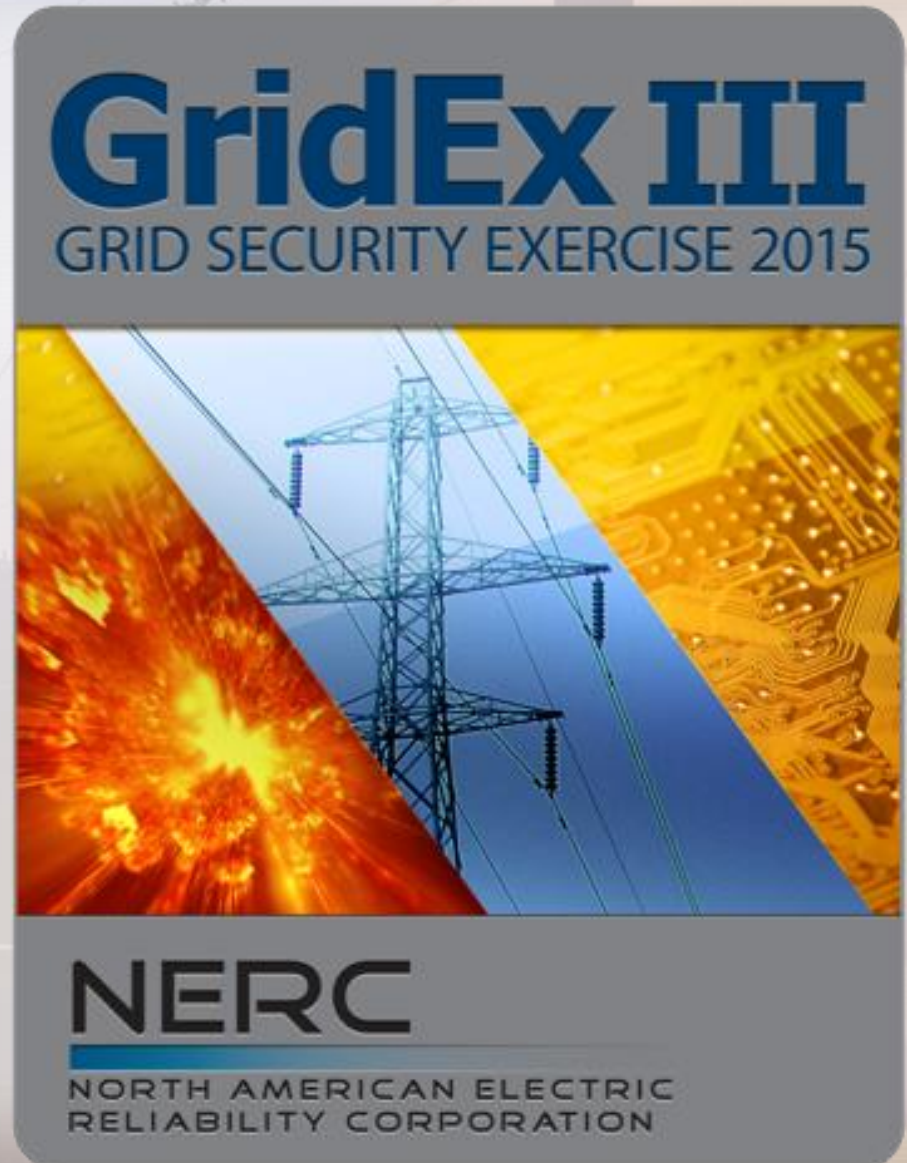
Table 9.1: Reportable Cyber Security Incidents

Metric	2014				2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Total number of Reportable Cyber Security Incidents	3											
Total number of Reportable Cyber Security Incidents resulting in loss of load	0											

Table 9.2: Reportable Physical Security Events

Metric	2014				2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Total number of reportable events as a result of physical security threats to a Facility or BES control center	47											
Total number of reportable events that caused physical damage or destruction to a Facility	9											
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	0											

- 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



Framework for Improving Critical Infrastructure Cybersecurity

Version 1.0

National Institute of Standards and Technology

February 12, 2014

Coordination with Government Partners



- State Government
 - Emergency Management Authority
 - State ISACs & Fusion Centers



Coordination with Industry Partners



Georgia Transmission





QUESTIONS