Keeping the Lights On: Security Priorities for the 21st Century

Harvard Energy Policy Group
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The PSEG Companies

PSEG Fast Facts
Assets: $32.5 billion
Revenues: $9.97 billion
Installed Generating Capacity: 13.4 GW
Customers: 3.3 million electric, 1.8 million gas

PSE&G
- NJ’s oldest and largest electric and gas distribution utility
- Customers in more than 300 NJ communities, including its six largest cities
- 1,500 circuit miles of transmission
- Recently received approval for Energy Strong, a $1.22 billion investment in system resiliency and hardening
- $1 billion in solar and EE investments

PSEG Power
- Diversified portfolio of power plants, including 3.6 GW nuclear, 3.2 GW combined cycle natural gas, 2.4 GW coal, and 92 MW solar
- Operates in three RTO regions; PJM, NYISO and ISO-NE

PSEG Long Island
- Operating LIPA electric T&D system, beginning on January 1, 2014
- Twelve year agreement with potential for an additional eight years
- 1.1 million electric customers
Nature of Threats and Risks

Various threats and risks can have an impact on our operations

Cyber Attacks

Physical Attacks

Extreme Weather

Goal is to protect our people, assets, information and infrastructure systems while providing safe and reliable service at reasonable prices
Threat Landscape

We see the breadth of the types of threats in the news

<table>
<thead>
<tr>
<th>Extreme Weather</th>
<th>Physical Attacks</th>
<th>Cyber Attacks</th>
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<tbody>
<tr>
<td>• Superstorm Sandy</td>
<td>• Metcalf station attack</td>
<td>• Target credit card hack</td>
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<td>• Polar Vortex</td>
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<td>• Indictment of Chinese officials by US DOJ</td>
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Framework must also recognize:

- Absolute security or reliability cannot be achieved and should not be the goal
- Investments and expenses must be prudent and cost effective

**Building resiliency and redundancy into the electric system reduces risks**
Role of the Regulators

- Facilitate **confidential** collaboration and information sharing

- Priorities and focus
  - Bulk electric system; potential for large scale impacts is high
  - Cyber security; most elusive with potential for large scale impacts
Role of Congress

• Information sharing
  – Enhance information sharing between government and industry
  – Provide strong protections for sensitive utility information

• Enable security investment
  – Facilitate tech transfer from government to utilities
  – Provide liability protection
  – Bolster critical infrastructure insurance market

• Equipment spares
  – Bolster domestic manufacturing capacity
  – Support the housing, maintenance and transportation of equipment
PSEG Security Actions

- Dedicated staff
  - Homeland security manager and security intelligence analyst
  - Dedicated IT FTEs to cyber security and NERC CIP

- Training of our associates

- Participation in 3 FBI Joint Terrorism Task Forces (NJ, NY, and PA)

- Member of NJ Infrastructure Advisory Committee and NJ ROIC Working Group

- Participation in industry efforts on physical and cyber security

- Compliance
**Investments Principles and Practice**

- **Principles**
  - Proactive and preemptive countermeasures driven by what is the likelihood of event and tolerance for the risk
  - Informed decisions based on situational awareness

**PSEG investments and other actions**

- **Preparation**
  - With industry groups: EEI, AGA, NERC, NEI
  - With security agencies: DHS, FBI, State ROIC
  - GridEx II

- **Prevention**
  - $500 million in security countermeasures

- **Response**
  - Energy Strong: $1.22 B in resiliency and hardening investments

- **Recovery**
  - STEP program
  - RMAGs
# Best Practice

## Holistic Model

<table>
<thead>
<tr>
<th>INTELLIGENCE COLLECTION, ANALYSIS, and EXPLOITATION</th>
<th>CYBER SECURITY / OPSEC (SCADA) (PRIVACY)</th>
<th>INDUSTRY ENGAGEMENT AND BENCHMARKING</th>
<th>PHYSICAL SECURITY ASSET HARDENING</th>
</tr>
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<tbody>
<tr>
<td><img src="image1.png" alt="Intelligence Cycle" /></td>
<td><img src="image2.png" alt="Person Silhouette" /></td>
<td><img src="image3.png" alt="People" /></td>
<td><img src="image4.png" alt="Security System" /></td>
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<tr>
<th>LAW ENFORCEMENT AND INTELLIGENCE AGENCY LIAISON</th>
<th>PSEG SECURITY COUNCIL</th>
<th>RISK ASSESSMENT</th>
<th>REGULATORY COMPLIANCE</th>
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<tr>
<td><img src="image5.png" alt="FBI Emblem" /></td>
<td><img src="image6.png" alt="Round Table" /></td>
<td><img src="image7.png" alt="Risk Assessment" /></td>
<td><img src="image8.png" alt="Regulatory Compliance" /></td>
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<th>SECURITY TECHNOLOGY Security Command Center</th>
<th>INVESTMENT IN CRITICAL INFRASTRUCTURE</th>
<th>RESILIENCY</th>
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| ![Security Command Center](image9.png)    | ![Making New Jersey Strong](image10.png) | - BUSINESS CONTINUITY  
- CRISIS MANAGEMENT  
- BIM COMMITTEE |