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# *Energy Security GovEnergy 2011*

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Aug 2011



# *The Situation*



Defense Science  
Board

**Feb 08 - “Critical national security and homeland defense missions are at an unacceptably high risk of extended outage from failure of the electric grid.”**



**May 09 - “Aurora threat revealed the possibility that sophisticated hackers could seriously damage the grid by destroying mechanisms downstream from the initial point of attack.”**

**Feb 10 - “DoD will conduct a coordinated energy assessment, prioritize critical assets, and promote investments in energy efficiency to ensure that critical installations are adequately prepared for prolonged outages caused by natural disasters, accidents, or attacks.”**

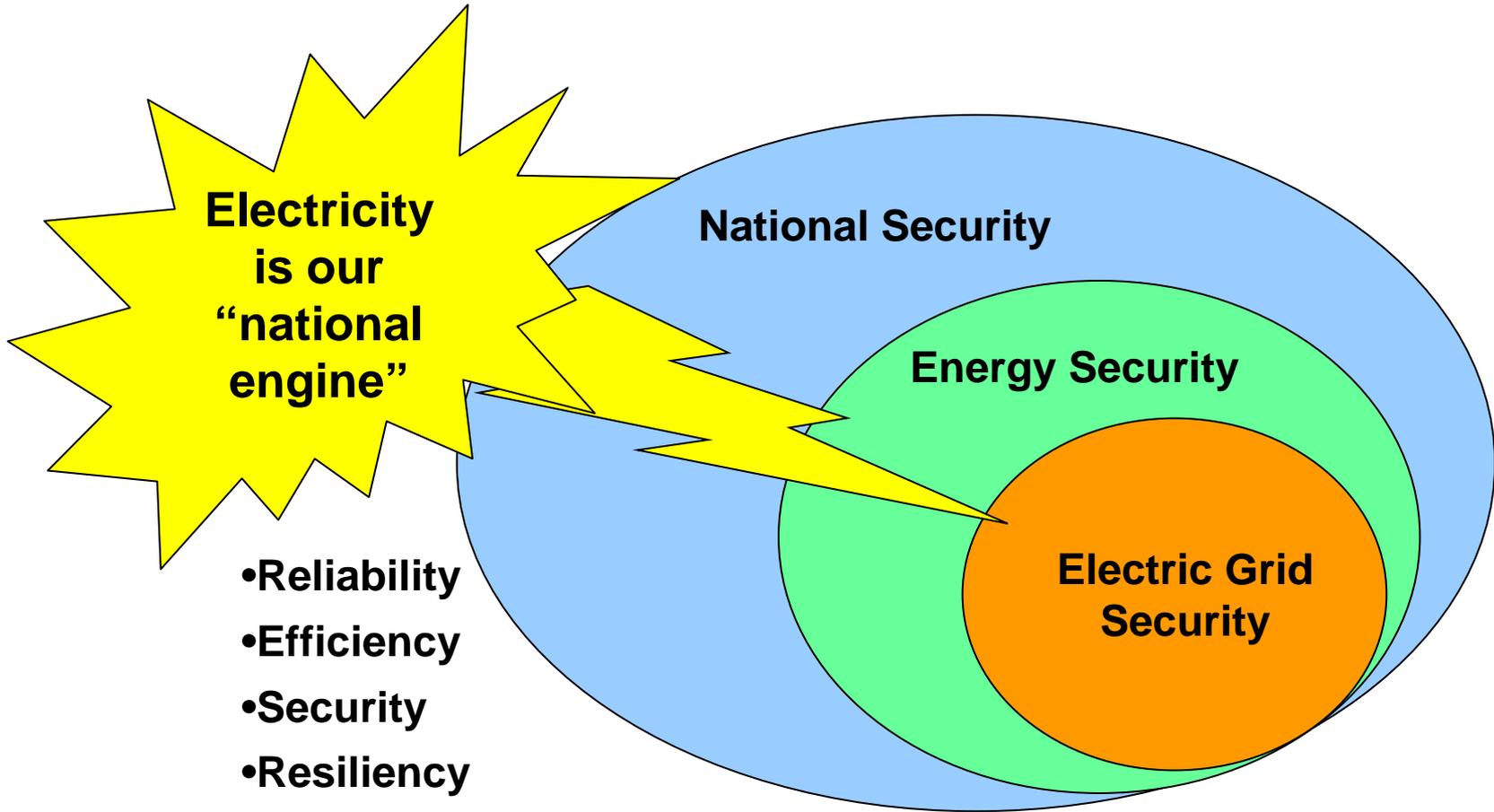
*References:*

- *The Defense Science Board Task Force on DoD Energy Security, “More Fight – Less Fuel,” February 2008.*
- *Powering America’s Defense, Energy and the Risks to National Security, by the Center for Naval Analyses Military Advisory Board, May 2009*
- *Quadrennial Defense Review Report, February 2010*



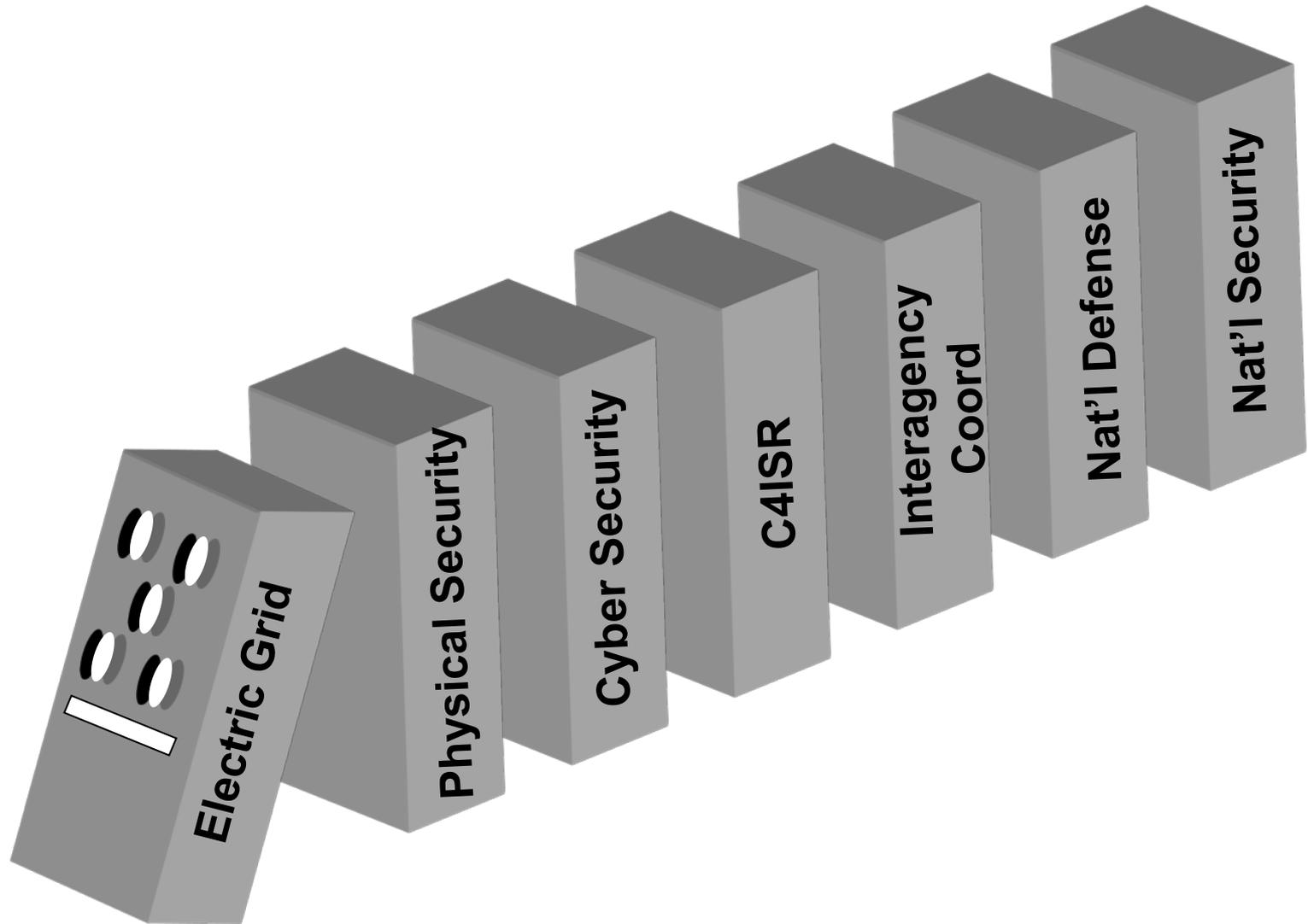


# *The National Engine*





# *Dependence on a Fragile Grid*





## *Long Term Outage*

**First 72 hrs: Power is lost, lights go out, back-up diesel generators fire up.**

**First response teams assess damage and make efforts to repair damage. Utilities have most systems restored that have not sustained damage to prime movers or transformers.**

**72 hrs – 7 days: Back-up power generation runs short of fuel, requires maintenance and eventually fails. COOP activated. Critical infrastructures, e.g. loss of water treatment, impact on transportation, loss of natural gas, etc. , are also effected which in turn impact other mission elements.**

**One week+: Food shortages with social unrest developing. DoD's mission is severely impacted. Economic standstill.**



# *Objective – Electric Energy Security*

1. Assured supply and availability of electrical energy.
2. Protect against unauthorized access affecting information, control, availability, and reliability of electric power.



**Our Focus**

**USNORTHCOM's unique focus is DOD mission assurance in the homeland**

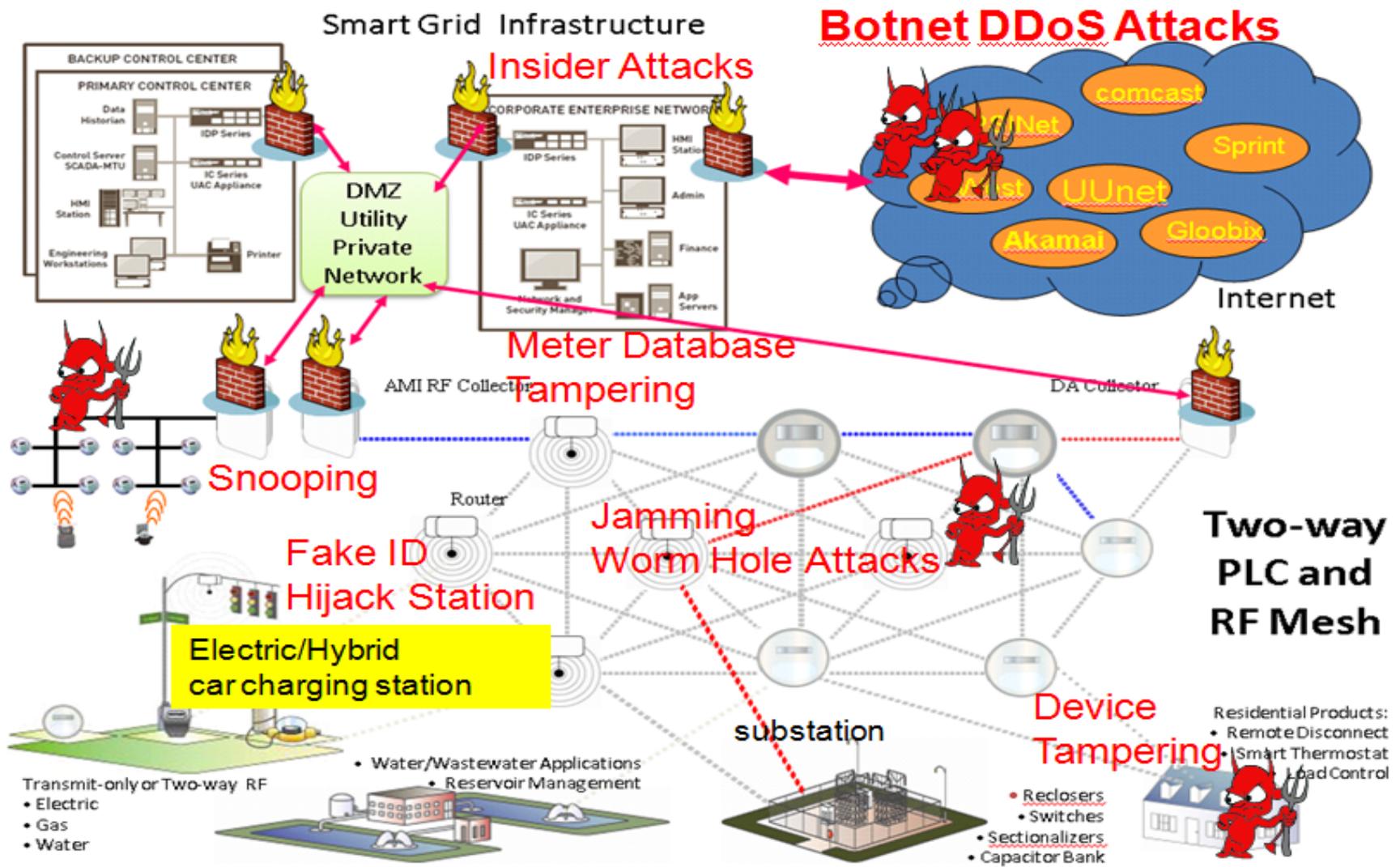


- **Natural Disasters**
  - **Solar Storms**
  - **Earthquakes**
  - **Flooding**
  - **Hurricanes**
- **Cyber Attack**
- **Physical Attack**
- **Insider Threat**





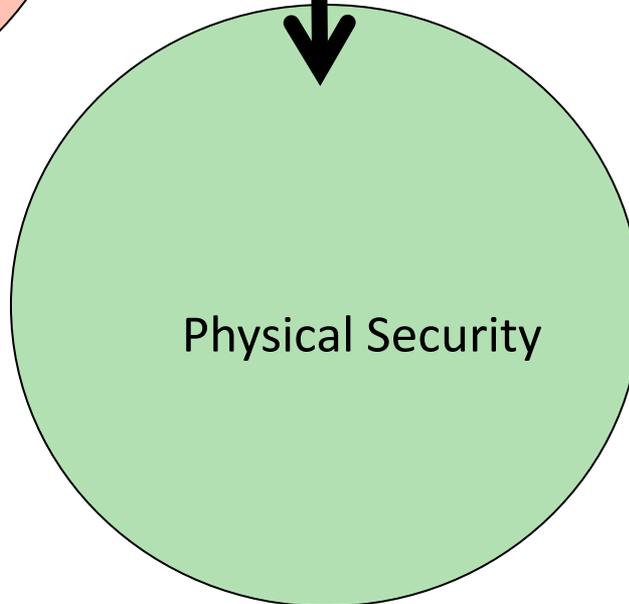
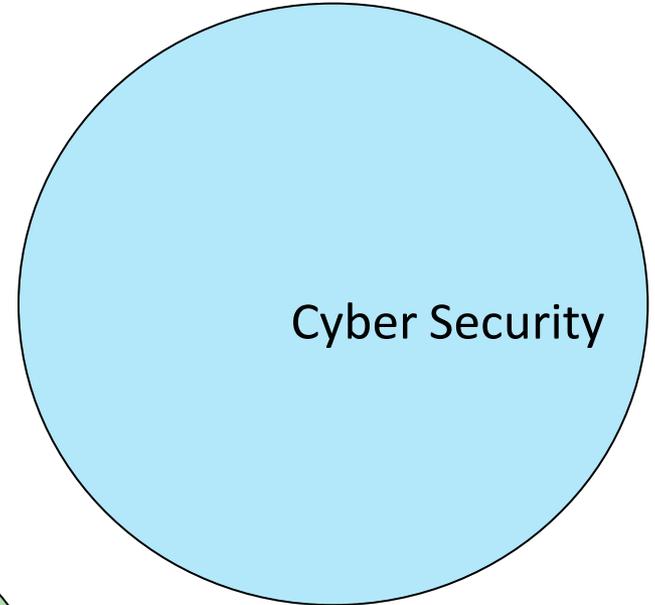
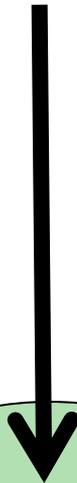
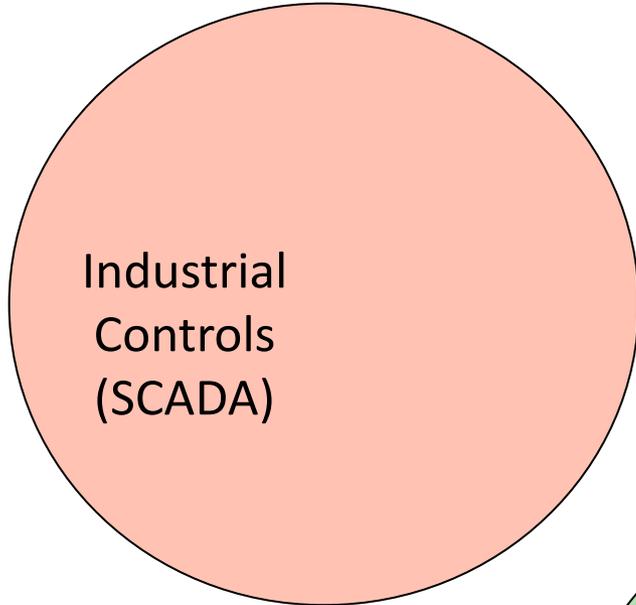
# Smart Grid Cyber Vulnerabilities





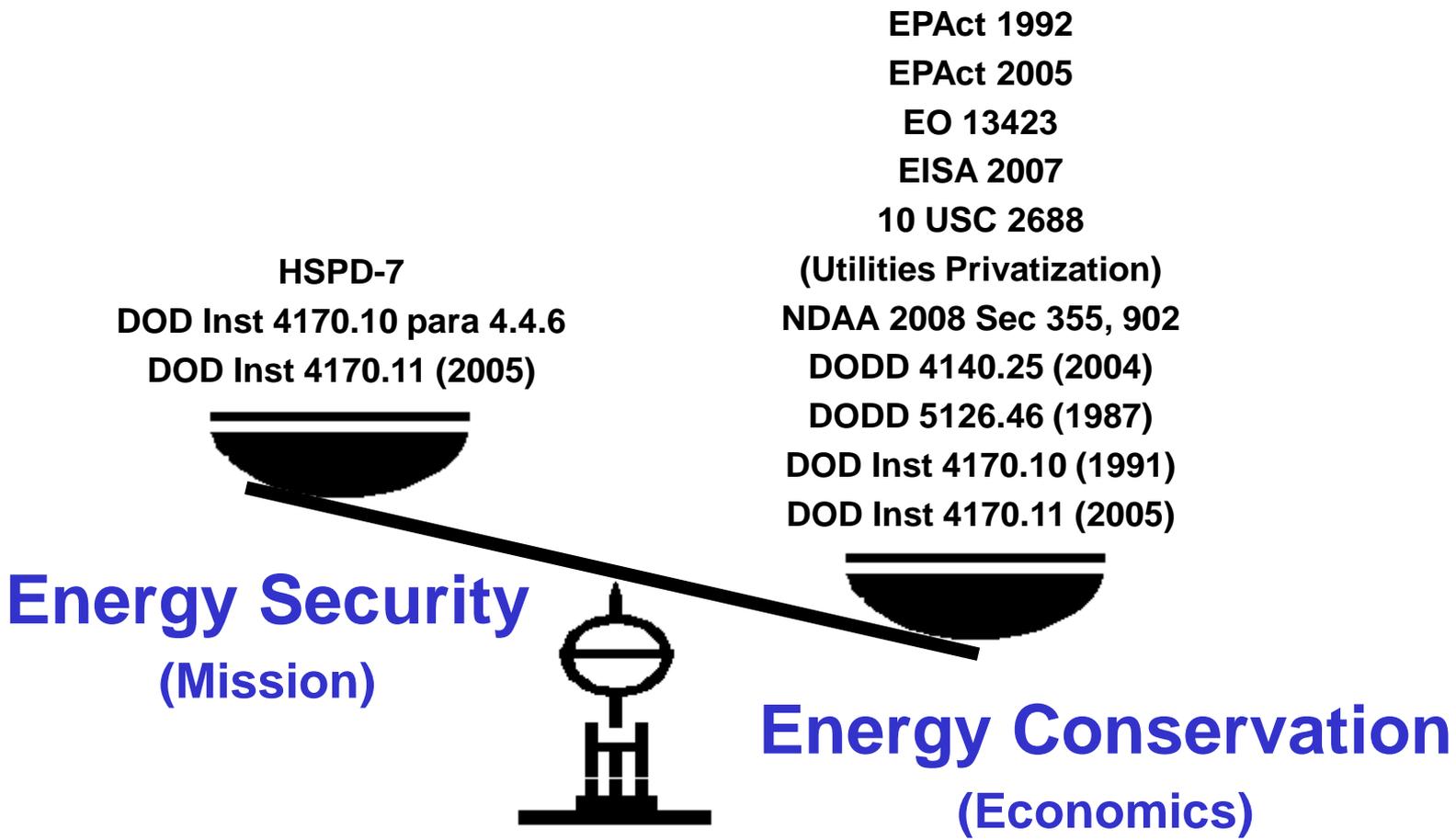
# *Gap in Expertise*

**Electric Grid Security**



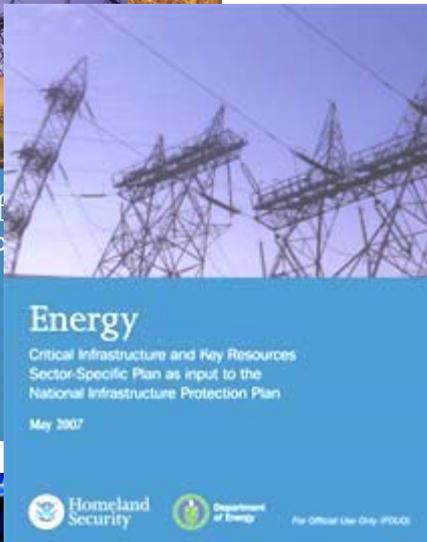
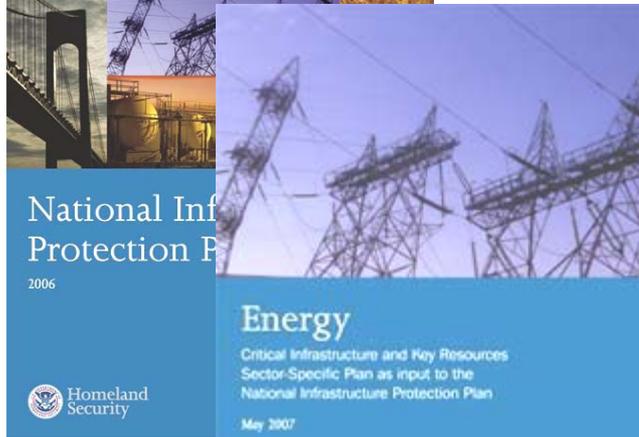


# *Legislative and Policy Focus*





# *National Infrastructure Protection Plan (NIPP)*



## NIPP

- Unifies effort for protection of critical infrastructure and key resources

## Energy Sector Specific Plan

- Collaborative process between the private sector, state, local, and tribal governments,
- Identify threats, mitigate vulnerabilities, minimize consequences
- ES-ISAAC

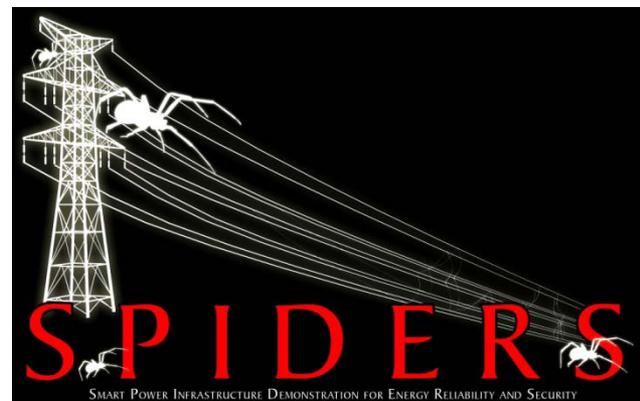


# *Themes and Messages*

- **USNORTHCOM is a key partner within DOD advocating for a reliable, efficient, secure, and resilient electrical power grid.**
- **USNORTHCOM strongly encourages increased energy efficiency based on sound technical solutions *that fully consider security implications.***
- **The time to include security is now!**
  - **Industry is moving forward with Smart Grid implementation, with or without consideration of DOD security requirements**
  - **Better to design in security now than to patch later**
  - **Support NIST Smart Grid security standards development**



- Partnership in national and community initiatives
  - Energy Security
    - Energy Grid Security Executive Council member (OSD)
    - JCTD – Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)
    - Rocky Mountain Secure Smart Grid Initiative (RMSSGI)
  - Distributed Generation on military bases
- Table Top Exercise Series
- NLEs
- Better Industry Awareness





# *Goal: DoD Intrinsic Security Requirements*

- **At the factory**



- **In the field**







# ***BACK UP SLIDES***



# Partnering Opportunities

## Federal



**NIST**  
National Institute of  
Standards and Technology  
U.S. Department of Commerce



## State PUCs



**Dora**  
Department of Regulatory Agencies



Utah  
Department of  
Commerce

**NYSERDA**



**Oklahoma Corporation Commission**  
EMPOWERING OKLAHOMA  
ENERGY • TRANSPORTATION • UTILITIES

## Industry

**NERC**  
NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

**EI** EDISON ELECTRIC  
INSTITUTE

**EPRI** | ELECTRIC POWER  
RESEARCH INSTITUTE

**GRIDWISE** ALLIANCE | GALVIN  
ELECTRICITY  
INITIATIVE

**APPA** American  
Public Power  
Association

**IEEE**  
Celebrating 125 Years  
of Engineering the Future