RESILIENCE IS A MATTER OF PERSPECTIVE

Former President, NJBPU
Former Chairman, NARUC Critical Infrastructure Committee
Former President, OPSI
Former NARUC Representative, ESCC
Senior Advisor, Protect Our Power

but …

just a guy from New Jersey
RESILIENCE AND A NEW JERSEY PERSPECTIVE

“ I’m from New Jersey, I don’t expect too much… If the world ended today, I would adjust “

John Gorka
RESILIENCE DEPENDS ON WHERE YOU NEED TO BE…RESILIENT

- Generation – Fuel Redundancy
- Pipelines – Generation Nexus & Retail
- Transmission – Asset Hardening
- Distribution – System Management & Self Healing
- DER – Integration thereof and Management
- DER - Town Center/Campuses Islanded & Black Start
- Cybersecurity Across All Sectors

And…Energy, Water, Telco nexus
The ability to defend against and then respond and recover from a threat or difficulty… whether natural threats or intentional
SUPERSTORM SANDY

• 71% of New Jersey’s electric distribution system impacted
• 2.8 million electric customers - 5 million people extended loss of power
• Over 325,000 housing units were impacted - damages totaling over $5.9 B
• 19,000 small businesses impacted with loses totaling over $8.3 billion.
• 70% of gas stations in northern New Jersey were off-line
• 267 of the 604 water systems without power
• 100 transmission lines were out of service.
• 5,000 transformers were damaged and replaced.
• About 9,500 utility poles were damaged.
• Over 116,600 tree incidents caused damage to infrastructure resulting in outages.
• Approximately 50 substations were impacted by flooding.
SUPERSTORM SANDY RESPONSE

Storm Response Costs $ 954M – 1.25B with other storms

Board Order for Storm Hardening

PSEG – 650M Upgrades & then 1.2B “ Energy Strong”

GDCs – 2.4B – replacement and upgrades to systems

Water and Wastewater Systems Upgrades

About $ 6 Billion total investments

2017 Foundational Rulemaking for Infrastructure Filings
SUPERSTORM SANDY RESPONSE

NJBPU issued Order with 103 separate measures
• Web based outage maps
• Mutual Aid
• Communications Plans

Federal Response
• State Fuel Assurance Plans
• Electric Sector Coordinating Council
RESPONSES TO RESILIENCE & CYBERSECURITY IN THE STATES

- Enhanced Capital Investments – *Riders or Clauses*
- Grid Modernization – 24 States with Open Dockets
- Distribution Automation
- AMI and DER
- Microgrids
- Cybersecurity
No predictions like storms
Faceless nameless
Nature of grid and interconnectivity
Bifurcation of Bulk System vs. Distribution – Federal vs. State jurisdiction
No common state standard
Concerns about how the investments fit in ratemaking framework
No standard for devices
And the proliferation...
DISTRIBUTED RESOURCES AND IOT

GROWTH IN THE INTERNET OF THINGS
THE NUMBER OF CONNECTED DEVICES WILL EXCEED 50 BILLION BY 2020

Source: Statista
CYBERSECURITY IN NEW JERSEY

New Jersey always took an “All Hazards” Approach
2009 Board Initiative with EDCs GDCs and State & Federal Partners
2011 – First utility commission to issue Cybersecurity Order
2016 – Order Directing All Elec Gas & Water Cos to Establish a Plan
  • NERC CIP Standard
  • Protective Measures
  • Planning and Exercises
  • Workforce
  • Join State Fusion Center
  • Certified in C- Suite & need Board of Directors Governance
CYBERSECURITY

• Electric Sector Coordinating Council & Tri Sector Group
• NERC and DOE National Exercises - GridEx
• USDOE – Office of Electric Reliability and CESER
• FERC alone and with USDOE
• State Actions or Regional Initiatives
• NARUC – Resource Repository
• NGOs - Protect Our Power
MISSION

- Build consensus among government and industry to strengthen our electric grid against all potential attacks
- Independent, not-for-profit organization – 501 (c)(3) and (c)(4) status
- Robust, highly-experienced Board of Directors, Staff and Advisory Panel from across government, industry and private sectors

Goals

- Define and prioritize Best Practices that must be implemented in short- and long-term to make the electric grid more robust and resilient
- Identify the measures to ensure that urgent improvements and upgrades be implemented
- Develop innovative proposals to fund improvements, including methods that incentivize utilities to accelerate making grid more resistant to attacks
CYBERSECURITY ISSUES

• Best practices above and beyond standards
• Focus on underserved systems
• Coordination for response
  • Spare parts
  • SOS
  • Exercises
• Funding and investments
  • Rate base issues
  • Municipal and Rural systems
• Human Resources & Cyber Mutual Aid
Resilience is what we want and need to protect from threats, but also what we need to respond and recover...and how we invest to protect from an evolving threat like cybersecurity.

Resilience needs industry, policymakers and regulators to meet the challenges.