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INSIGHT

Texas Power Outage: Implications for Critical Infrastructure Security and Resilience Policy

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The statewide power outages in Texas following a severe cold weather event in February 2021 illustrated the vulnerability of electricity supply as a critical economic and safety function. The widespread failure of electric generation facilities in severe weather conditions led to blackouts that affected millions of residents and caused extensive property damage and loss of life. Much of the post-event commentary has focused on the unique regulatory environment in Texas, which some observers fault for the lack of adequate weatherization at critical generation facilities. Texas operates an electric grid that is largely isolated from the national grid, and therefore exempt from Federal Energy Regulatory Commission regulations applicable to interstate commerce. The federal policy framework for critical infrastructure security and resilience (CISR) has generally received less public attention. This nonregulatory framework provides authority and guidance for a broad range of voluntary public-private partnerships to promote national CISR goals—including grid resilience. This CRS Insight provides an overview of the federal CISR policy framework—focusing on its application to the risk management practices of the electricity generation and distribution industry in Texas and elsewhere.

The National Infrastructure Protection Plan (NIPP), last updated in 2013 under Presidential Policy Directive 21 (PPD-21) "Critical Infrastructure Security and Resilience," describes key elements of the CISR policy framework and provides high-level implementation guidance. The framework recognizes the Energy Sector as one of 16 critical infrastructure sectors, and designates the Department of Energy (DOE) as the Sector Specific Agency (SSA) responsible for coordinating sector-wide CISR initiatives with governmental and nongovernmental stakeholders. The Energy Sector consists of two subsectors—the Electricity Subsector and the Oil and Natural Gas Subsector. The Energy Sector Specific Plan (Energy SSP), published in 2015 in alignment with the NIPP, highlights severe weather events and disruption of natural gas supplies—both of which occurred in Texas—as major risks to the Electricity Subsector.

Under the Energy SSP, DOE shares risk management responsibilities with private sector owner-operators of critical infrastructure systems and assets in order to support national CISR goals outlined in the NIPP:

- Assess and analyze threats to, vulnerabilities of, and consequences to critical infrastructure to inform risk management activities;

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- Secure critical infrastructure against human, physical, and cyber threats through sustainable efforts to reduce risk, while accounting for the costs and benefits of security investments;
- Enhance critical infrastructure resilience by minimizing the adverse consequences of incidents through advance planning and mitigation efforts, and employing effective responses to save lives and ensure the rapid recovery of essential services;
- Share actionable and relevant information across the critical infrastructure community to build awareness and enable risk-informed decisionmaking; and
- Promote learning and adaptation during and after exercises and incidents.

Several coordination and information-sharing bodies facilitate this work. Sector and subsector Government Coordinating Councils (GCCs), cochaired by DOE and Department of Homeland Security (DHS) officials, coordinate activities of relevant agencies at all levels of government. Sector Coordinating Councils (SCCs), organized and led by industry executives, operate in parallel to the GCCs to share information between government and private sector stakeholders on risks and best practices. In addition, Energy Sector and Subsector GCCs and SCCs sponsor Information Sharing and Analysis Centers (ISACs), nonprofit organizations that "collect, analyze and disseminate actionable threat information to their members and provide members with tools to mitigate risks and enhance resiliency."

Numerous Texas utilities maintain voluntary collaboration partnerships with these and other coordination or advisory bodies under the NIPP framework. A wide range of risk assessment and information sharing activity in the Electricity Subsector highlighted known risks of cold weather to grid infrastructure in Texas and elsewhere prior to the February 2021 weather event. However, the scope of voluntary Electricity Subsector infrastructure security and resilience investments to harden vulnerable systems and assets in response to NIPP initiatives is less clear. The failure of energy infrastructure attributed to the extreme cold weather suggests that further sector investments may be necessary.

The 2013 NIPP states that, "Government can succeed in encouraging industry to go beyond what is in their commercial interest and invest in the national interest through active engagement in partnership efforts." This statement summarizes the premise of federal CISR policy as it has developed since the late 1990s—that private sector interest in avoiding business disruption and public interest in availability of essential services necessarily align. In the wake of widespread power outages in Texas, some key stakeholders in the Electricity Subsector have suggested that this premise is flawed.

In one such instance, Tom Fanning, a utility CEO and current cochair of the Electricity SCC, asserted that economic incentives predominated as the main factor influencing industry investment behavior. "If the rules of the market don't reward someone for resilience, they won't get resilience," he said.

However, regulatory requirements for reserve generation capacity or extensive winterization have been controversial among some Electricity Subsector stakeholders, who have claimed that such requirements could lead to wasteful and costly investments in unused capacity.

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