Disaster Recovery Plans Critical for State Power Grids

By Jennifer Ginn
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“It’s really essential and most important that you have a disaster recovery plan,” said Paul Molitor, head of association communications for the National Electrical Manufacturers Association. He was one of the speakers on a recent Council of State Governments’ webinar, “Storm Recovery—Building Stronger, Smarter Electrical Grids.”

“Cities and states need to have these (plans),” Molitor said. “They need to take a look at their disaster recovery plans; they need to make sure they’re constantly updated.”

In addition, he said cities and states should run simulations of those plans to make sure everyone knows what they should do if something happens.

“This is probably the best and most important thing that you can do in order to make sure you’re prepared,” Molitor said.

Miles Keogh, director of grants and research for the National Association of Regulatory Utility Commissioners, said utilities evaluate what their greatest threats to service are and how they should respond when crafting a disaster recovery plan. The industry has become good at measuring reliability, he said, but that’s no longer enough.

Reliability, he said, is “really good at measuring how able you are to keep the lights on ... under normal conditions, what they call blue sky conditions.”

The problem, he added, is trying to measure how reliable the utility infrastructure is in the face of a major natural disaster, such as Hurricane Katrina or Superstorm Sandy.

“So the measurements that you (use) to figure out whether it’s worth minimizing that outage is the value of a lost kilowatt hour,” he said. “On the standard measure of reliability, the value of a lost kilowatt on day one is the same as the value of a lost kilowatt on day 30. I think anyone who’s been out of power for more than a couple of days recognizes that they will pay a lot more on day five and day 10.

“Consequently, in the last year or two we’ve seen a much bigger focus on ... utilities that ask for investments to help them improve their resilience.”

Although there is no clear industry agreement yet for what resilience in utilities means, Keogh breaks it down to five characteristics:

• Flexibility: Smart meters, for example, are useful for demand response programs that try to lower a
customer’s energy consumption. They also are extremely useful in identifying outages during a disaster, since the meters communicate directly to utility.

- Resourcefulness: Does the utility foster an environment where employees believe they can go beyond disaster plans to adapt to changing conditions?
- Robustness: Can the power grid take a hit and keep on going?
- Rapid Recovery: How fast can the utility get up and running after a disaster?
- Adaptability: Does the utility learn from previous disasters and apply lessons learned to their disaster recovery plan?

Legislators can ensure good resilience, Keogh said, “by establishing the authority for regulators to ensure reliability, by helping to establish capacity for state agencies to do planning and by ensuring you have a diverse portfolio of (energy) supply, so if you lose one thing, you don’t lose everything.”

Molitor said legislators need to look at whether their state has any laws or regulations that forbid or discourage microgrids, which are small, locally controlled sources of power generation and distribution that are not owned or managed by a utility. These microgrids typically use alternative power sources, such as solar or wind, and can range from providing power to one building up to several city blocks. Microgrids can be essential to protecting critical services, Molitor said.

For instance, when the earthquake and tsunami hit Japan a couple of years ago, a hospital in the Fukushima province that had a microgrid up and running didn’t have a single problem, he said.

“The patients stayed comfortable. They (the hospital) were able to provide critical medical services to everybody who came in,” Molitor said.

“You can contrast that with New York University and Bellevue Hospital, where we all saw the footage of … the staff running people down the stairs, out in ambulances to relocate them because of Hurricane Sandy. They didn’t have the power to keep the life safety systems up and running. Two completely opposite examples that really show the value of these microgrids and why they’re important to maintaining critical services in an emergency.”

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