Hurricanes and Electric Utilities: Lessons from Florida
By Mark A. Jamison

What’s the best way to divert hurricanes and avoid damage to electric infrastructure? Maybe it’s being ready to learn from the experience.

That is one way of interpreting Florida's experience. In the aftermath of the 2004-2005 hurricane season, when eight named storms caused a total of $15.5 million in customer losses from power outages, Florida embarked on a comprehensive reform preparing electric utilities for hurricanes. This effort included coordinated research through PURC on electric infrastructure and storm damage.

This research – funded by Florida’s utilities and done in collaboration with them – included an in-depth look at the economics of hardening the state's electric system. A computer model developed for that purpose helps analyze the costs and benefits of undergrounding and other forms of hardening at a micro level. The research also included the deployment of an extensive network of weather monitoring devices to gather storm data and a companion software system for mapping the weather data to infrastructure damage.

Now that we in Florida are ready to test our model against real storm damage, no hurricanes have hit the state. Maybe our preparedness hasn’t caused hurricanes to go elsewhere these past six years, but we are better prepared now for extreme storm events than we were in 2004.

Florida’s experiences may provide other states with an approach to better prepare for extreme weather events. The work done in Florida was the foundation for a study in Texas of the economics of hardening electric infrastructure following hurricanes there a few years ago. States in the northeast are beginning to review the impacts of Hurricane Irene. As they move forward with their investigations and plans, we at PURC look forward to collaborating with them and sharing Florida’s strategies to minimize losses from extreme weather.

What exactly can other states gain from the Florida experience? One key lesson is to have a coordinated plan for dealing with storms and their aftermaths, and to have practice runs of the plan. This isn’t something that PURC has been involved in, and I am sure that at least some other states in the hurricane belt have similar systems in place. However, states without such plans would benefit from talking with Florida’s Division of Emergency Management.

Another key lesson is to develop a system of shared knowledge and shared research. This has been PURC’s role in Florida. At the request of the Florida Public Service Commission, the electric utilities and PURC conducted workshops on the effects of the hurricanes, identified areas where research could improve utilities’ abilities to serve their customers when hurricanes hit, and worked together to address the research needs. A more comprehensive description of this work is available in The Electricity Journal article, “Florida’s Storm Hardening Effort: A New Paradigm for State Utility Regulators” by PURC researchers Lynne Holt and Ted Kury.

While it is a standing joke in Florida that the 50+ weather monitoring stations that WeatherFlow and our collaborative research team installed after 2005 have kept hurricanes away, the real
service to the state’s utilities and customers is that both are better positioned to manage hurricane
damage in the future and to continue to improve as we learn from experiences.