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Office of Electricity Delivery and Energy Reliability

U.S. Department of Energy

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Chairman Upton, Ranking Member Rush, and distinguished Members of the Subcommittee, I appreciate the opportunity today to discuss energy security and emergency response issues related to this active hurricane season.

The mission of the Office of Electricity Delivery and Energy Reliability (OE) is to develop innovative, cutting-edge solutions to ensure that our Nation's energy infrastructure remains reliable, affordable, and resilient. In order to fulfil this mission, the U.S. Department of Energy (DOE or Department) leverages the technical capabilities of the National Laboratories and partnerships with key private sector stakeholders to focus on early-stage research and transformative projects.

Our organization is also the lead for providing energy-related expertise to the Federal Emergency Management Agency (FEMA), interagency partners, and the Administration as part of DOE's emergency response activities. DOE serves as the lead agency for Emergency Support Function #12 - Energy (ESF-12) under the National Response Framework and as the Sector Specific Agency for Energy. As the lead for ESF-12, DOE is responsible for providing information and analysis about energy disruptions and to assist in facilitating the restoration of damaged energy infrastructure.

During Hurricanes Harvey, Irma, Maria, and Nate, and in the weeks following these events, we have worked with industry and Federal, state, territorial, and local partners to facilitate response and recovery. Specifically, as part of the whole-of-government response to these disasters, the Department deployed response personnel to support state emergency operations centers, FEMA Incident Management Assistance Teams, and regional and national response coordination centers, including several weeks of 24 hour coverage at FEMA's National Response and Coordination Center (NRCC) in Washington, DC. DOE's responders worked with interagency partners as well as with state government and industry representatives to identify information and resource gaps and inform DOE's engagements to support the restoration efforts.

Overall, DOE has deployed more than 100 personnel to support the response to the 2017 Hurricane Season from Headquarters, DOE sites across the country, the Power Marketing Administrations (PMAs), and DOE's National Laboratories.

Hurricane Harvey

Each of these storms presented unique challenges to the energy sector. With respect to Hurricane Harvey, we saw peak electricity outages of about 300,000 customers in Texas and Louisiana. While offshore and onshore crude oil and natural gas production was disrupted by the storm, the greatest impacts were to the midstream and downstream oil and refining sectors. At its peak, more than four million barrels per day of refining capacity, representing more than 20% of total U.S. refining capacity, was offline. It took several weeks for flood waters to recede, but the refining systems in Texas and Louisiana have resumed normal operations. In addition, flooding closed two key injection points along the Colonial Pipeline, forcing the system to operate intermittently at reduced rates for several weeks before normal service resumed.

Hurricane Irma Response

Hurricane Irma, the second category-four hurricane to make landfall in the United States this year, caused over seven million electric customer outages from the Caribbean to the southeast United States.

At Irma's peak on September 11, there were 7.8 million electric customer outages in Florida. Three days later on September 14, power had been restored to about 5 million customers – 64% of those customers – and 5 days later the restoration was at 98%. Overall, Florida Power and Light (FPL) was able to restore power at a pace roughly four times faster than it did after Hurricane Wilma in 2005.

One of the reasons this expeditious restoration was possible is the mutual assistance provided by numerous electric utilities. The energy sector mobilized more than 60,000 workers from more than 250 investor-owned electric companies, public power utilities, and electric cooperatives from all across the United States and Canada to assist with power restoration.

This restoration was aided by a number of factors, including the increased coordination between various levels of government and the private sector, which allowed the mutual assistance resources to rapidly access restoration locations. In addition, FPL has invested nearly $3 billion since 2006 to build a more storm-resilient electrical grid to reduce potential damage and outages, and to help restore power faster following outages. Some of these investments included smart meters and flood monitoring capabilities which allowed substations and electrical equipment to shut down more efficiently and with less damage.

Hurricane Maria

DOE is also continuing to play a significant role in supporting the restoration and recovery efforts in the U.S. Virgin Islands and Puerto Rico. In the U.S. Virgin Islands, DOE has deployed 29 responders, including 25 personnel and 10 line-trucks from the Western Area Power Administration to provide mutual assistance through a mission assignment from FEMA and has worked to facilitate additional mutual assistance with industry.

Hurricane Maria made landfall in Puerto Rico as a Category 4 hurricane on September 20, bringing powerful winds and major flooding that destroyed much of the territory's transmission and distribution infrastructure and left virtually all 1.6 million electricity customers on the island without power. According to initial estimates from the Puerto Rico Electric Power Authority (PREPA), at least 80 percent of the transmission and distribution system was affected by Hurricane Maria. However, as of October 31, 33.4% of normal peak load has been restored. While this figure has little bearing on customer-level outcomes, it may be the best proxy available to measure progress in this challenging environment.

In Puerto Rico, the United States Army Corps of Engineers (USACE) has assumed a significant role in the emergency restoration of electrical infrastructure. USACE Temporary Emergency Power Planning and Response Teams are assisting with assessments and generator installations at critical facilities. In October, USACE was also tasked to lead planning, coordination, and integration efforts to support Puerto Rico with the restoration of the electrical power grid due to impacts caused by Hurricane Maria. USACE is managing this effort as the lead for Emergency Support Function #3 - Engineering and Public Works, in close coordination with DOE.

DOE has a responder deployed to coordinate with FEMA as well as seven subject matter experts from the PMAs to provide technical support to USACE with restoration planning, cost estimates, validation, and quality assurance. Additionally, through DOE-funded projects, we are leveraging the expertise of our National Laboratories to develop potential long-term solutions to improve the resiliency of the Puerto Rican infrastructure. I want to assure the Committee that DOE will continue to support the work needed to restore power to the U.S. Virgin Islands and Puerto Rico.

Conclusion

I am grateful for the hard work of DOE's emergency responders in this active and challenging hurricane season. We have made progress, but there is still more to do. Over the next several months, DOE's primary focus in Puerto Rico and the U.S. Virgin Islands will be working with our partners to support the mission of restoring the power grids and critical infrastructure.

Secretary Perry and our DOE team look forward to a thoughtful conversation focused on our response to this season's hurricanes, and on the reliability, affordability, and resilience of the electricity system from hurricanes, as well as other extreme weather events.

Thank you, and I look forward to your questions.