



U.S. Department of Energy
Office of Electricity Delivery & Energy Reliability

Hurricane Sandy Situation Report # 4
October 30, 2012 (10:00 AM EDT)

http://www.oe.netl.doe.gov/emergency_sit_rpt.aspx

Highlights:

- At 8:00 pm EDT October 29, the National Hurricane Center reported Sandy made landfall near Atlantic City, NJ as a post tropical cyclone. As of 5:00 am EDT October 30, Sandy has maximum sustained winds of 65 mph and the center of Sandy is 15 miles east of York, PA and is moving 15 mph west northwest.
- A State of Emergency has been declared for Connecticut, Delaware, Washington D.C., **Maine**, Maryland, Massachusetts, **New Hampshire**, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, and West Virginia.
- As of 9:00 am EDT October 30, the impacted States report a total of 8,114,433 customers without power in the affected areas. See State totals below.

Summary

| Electric Outages by State | | | | |
|---------------------------|--------------------------|---------------------------------------|--------------------------------------|-------------------------------|
| Impacted State | Current Customer Outages | Percentage of Customers Without Power | Peak Outages Reported in DOE SitReps | Customers Restored Since Peak |
| Connecticut | 626,440 | 31% | 626,440 | 0 |
| Delaware | 45,137 | 10% | 45,137 | 0 |
| District of Columbia | 3,583 | 1% | 3,583 | 0 |
| Indiana | 7,537 | < 1% | 7,537 | 0 |
| Maine | 90,727 | 6% | 90,727 | 0 |
| Maryland | 311,020 | 12% | 311,020 | 0 |
| Massachusetts | 298,072 | 9% | 298,072 | 0 |
| Michigan | 68,619 | 1% | 68,619 | 0 |
| New Hampshire | 141,992 | 20% | 141,992 | 0 |
| New Jersey | 2,498,447 | 62% | 2,498,447 | 0 |
| New York | 1,967,874 | 21% | 1,967,874 | 0 |
| North Carolina | 4,005 | < 1% | 15,466 | 11,461 |
| Ohio | 254,207 | 4% | 254,207 | 0 |
| Pennsylvania | 1,267,512 | 20% | 1,267,512 | 0 |
| Rhode Island | 116,308 | 23% | 116,308 | 0 |
| Vermont | 17,959 | 5% | 17,959 | 0 |
| Virginia | 182,811 | 5% | 182,811 | 0 |
| West Virginia | 212,183 | 21% | 212,183 | 0 |
| TOTAL: | 8,114,433 | | | |

Note: States with fewer than 1,000 outages are not included in the table. Due to a large number of service providers, including investor owned utilities and cooperatives, the number of customer outages reported may not be comprehensive.



U.S. Department of Energy Office of Electricity Delivery & Energy Reliability

Sources: Outages obtained from company web sites and DOE communications. Total State customers are based on 2010 EIA Customer Data.

- As of 8:00 a.m. EDT, October 30, the U.S. Nuclear Regulatory Commission (NRC) reported three nuclear power units in the Northeastern United States had to shut down and two units reduced as a result of impacts from Hurricane Sandy.
 - PSEG Nuclear manually shutdown Salem Unit 1 (1,175 MW capacity), located in southern New Jersey, at 1:09 a.m. Tuesday morning (October 30) per plant operating procedures when four of the station's six circulating water pumps were no longer available due to weather impacts from Hurricane Sandy. The circulating water pumps use Delaware Bay/River water to condense steam on the non-nuclear side of the plant.
 - Entergy Nuclear shut its Indian Point Unit 3 (1,040 MW capacity), located near New York, NY, at 10:45 p.m. EDT Monday (October 29) due to external electrical grid issues.
 - Exelon reduced its Limerick Unit 1 (1,130 MW capacity) located near Philadelphia, PA from full power to 48 percent power by October 30. It also reduced its Limerick Unit 2 (1,134 MW capacity) from full power to 27 percent power by October 30.
 - On October 29 at 9:00 p.m. EDT, Constellation's Nine Mile Unit 1 (630 MW capacity) located near Oswego, NY, experienced an automatic reactor scram due to a generator load reject. The cause of the load reject was under investigation. Constellation's Nine Mile Unit 2 (1,143 MW capacity) continued to operate at full power as of 8:00 am EDT October 30.
 - Yesterday (October 29) Dominion Resources reduced its Millstone nuclear Unit 3 (1,233 MW capacity), located near New London, CT, from full power to 73 percent power to help maintain grid stability during the storm.
 - At 8:45 p.m. EDT, October 29, Exelon Corp. declared an Alert at its Oyster Creek nuclear plant (615 MW capacity) located near Toms River, NJ, currently shut for refueling, due to water exceeding certain high water level criteria in the plant's water intake structure.

ESF 12 Actions:

- ESF 12 is staffing the FEMA National Response Coordination Center (NRCC) in Washington, DC; the FEMA Region I Regional Response Coordination Center (RRCC) in Boston, MA, the FEMA Region II RRCC in Colts Neck, New Jersey; the FEMA Region III RRCC in Philadelphia, PA, and the New York State Emergency Operations Center (EOC) in Albany, NY.

Petroleum & Natural Gas Information:

Refineries

- According to trade press, the Phillips 66 Linden, NJ refinery (238,000 barrel a day capacity) refinery experienced a power loss yesterday (October 29). A list of refineries impacted by Hurricane Sandy is presented table.



**U.S. Department of Energy
Office of Electricity Delivery & Energy Reliability**

Refineries in the Path of Sandy as of 8:00 am EDT 10/30/12

| Refinery | Location | Capacity (B/D) | | | | |
|--|-------------------|---------------------|----------------|------------|----------------|----------|
| | | Operating Capacity* | Shut Down | Restarting | Reduced Runs | Normal |
| Hess* | Port Reading, NJ | 70,000 | X | | | |
| Monroe Energy | Trainer, PA | 185,000 | | | X | |
| PBF | Delaware City, DE | 182,200 | | | X | |
| PBF | Paulsboro, NJ | 160,000 | | | X | |
| Philadelphia Energy Solutions (Sunoco) | Philadelphia, PA | 335,000 | | | X | |
| Phillips 66 | Linden, NJ | 238,000 | X | | | |
| TOTAL | | 1,170,200 | 308,000 | 0 | 862,200 | 0 |

Note: The table does not include asphalt refineries or facilities already closed in prior years.

*The Hess Port Reading, NJ facility does not process crude, but processes gas oils to produce petroleum products.

Sources: Confirmed by company or on company web site. Various trade press sources

Ports and Terminals

- **As of 7:00 am EDT October 30**, the U.S. Coast Guard reports closures for ports in **Sector Baltimore; Sector Boston; Sector Southeastern New England (Providence, RI)**; Sector New York; Sector Long Island Sound; Sector Delaware Bay, including Philadelphia; and for ports along coastal waters in Virginia and Maryland, including the Chesapeake Bay entrance. The Port of Hampton Roads, VA is open with restrictions.
- **As of 7:00 am EDT October 30**, the following terminals are shut down:
 - Phillips 66’s terminals in Riverhead, NY and Tremley Point, NJ.
 - NuStar Energy’s terminals in Paulsboro and Linden, NJ; Virginia Beach and Dumfries, VA; Piney Point, Andrews AFB, and Baltimore, MD.
 - ExxonMobil Everett, MA; East Providence, RI; and Springfield, MA terminals.
 - Hess' Groton, CT terminal, one of the NE Heating Oil Reserve Terminals.
 - **Magellan Midstream Partners’ terminals in Wilmington, DE and New Haven, CT.**

Petroleum Pipelines

- **Colonial Pipeline shut down its mainline serving the Philadelphia, New Jersey and New York harbor markets at 7:00 pm EDT last evening (October 29).** Colonial’s southern mainlines (Houston-to-Greensboro, N.C.), as well as a mainline between Greensboro and central Maryland, are continuing normal operations.
- **As of 9:00 am EDT today (October 30), Kinder Morgan Pipeline reports that their jet fuel line from Newington, VA to Reagan National Airport is down due to a power failure. Restoration time unknown at this time.**
- **As of 1:00 pm EDT October 29**, trade press report that Buckeye Pipe Line has shut some lines out of Linden, NJ including pipelines to Queens and elsewhere in New York City, but the company is still shipping jet fuel to JFK, La Guardia, and Newark airports, and gasoline to Pennsylvania.

Electric Restoration Information

Connecticut

- **Connecticut Light and Power reported yesterday (October 29) that more than 1,000 line workers arrived and are working from as far away as the Pacific Northwest, Texas and Washington.**



U.S. Department of Energy Office of Electricity Delivery & Energy Reliability

Delaware

- Delmarva Power announced yesterday (October 29) that it has mobilized nearly 2,000 employees and contractors to restore power to those affected.

Maine

- Bangor Hydro and Maine Public Service reported yesterday (October 29) that they will have 63 crews available to work the storm and 17 tree crews from Asplundh. Maine Public will have 24 crews available to work and five tree crews from Asplundh. Each utility will assist the other as needed once they've handled outages in their own service territory. In addition, their sister utility from Nova Scotia will assist as needed and local line contractors have been placed on standby as well.

Maryland

- Baltimore Gas & Electric (BGE) reported yesterday evening (October 29) that more than 4,100 employees, contractors and out-of-state linemen, tree personnel and support staff are mobilized at BGE facilities and four staging sites. This includes approximately 1,700 out of a requested 3,000 out-of-state and contract linemen, tree personnel and support staff from Florida, Georgia, Illinois, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, Tennessee and Texas.
- Southern Maryland Electric Cooperative (SMECO) announced yesterday evening (October 29) that it has assembled a team of about 500 field workers—including SMECO linemen, contract linemen, and cooperative linemen, along with tree crews –to restore electric service to affected areas.
- First Energy reports approximately 7,500 company personnel and out-of-state workers are assisting with service restoration in Maryland, New Jersey, West Virginia, Ohio, and Pennsylvania, but anticipate lengthy outages in the storm's wake. While assessment of the damage by utility workers will be ongoing, the slow-moving nature of the storm will slow the process and hamper the conduct of restoration work.

Massachusetts

- NSTAR reported yesterday (October 29) that, in advance of the storm's arrival, the company opened its emergency operations center and staffed its regional work centers across the state. Approximately 1,200 contract personnel from as far away as Texas and the Midwest are assisting NSTAR's 3,000 employees in their efforts.
- Across its service territory in New York, New Hampshire, Massachusetts and Rhode Island, National Grid has on the ground thousands of employees in support roles and hundreds of supplemental crews from across the US and Canada. National Grid anticipates a second wave of additional personnel to arrive from other States once the storm is over.

New Hampshire

- As of 8:30 PM 10/29/12, Public Service of New Hampshire (PSNH) reports some of the 550 requested line and tree crews from as far away as Louisiana, Mississippi, Missouri, Oklahoma, and Texas have arrived to join more than 100 PSNH and local contractor line crews and 100 tree trimming crews already in place for the restoration effort.
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U.S. Department of Energy
Office of Electricity Delivery & Energy Reliability

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New Jersey

- As of midnight October 30th Public Service Electric and Gas (PSE&G) reports that excessive flooding created by the storm surge affected a large number of substations in Essex, Hudson and Middlesex counties. PSE&G has taken these stations out of service until the water recedes, the equipment can be cleaned and dried, and the stations can be safely re-energized. These stations serve about 462,000 customers.
- Atlantic City Electric reports that due to the magnitude of the storm, estimated times of restoration have been suspended until crews are able to assess damage.
- Orange and Rockland (O&R), serving New Jersey, New York, and Pennsylvania reported yesterday (October 29) the hurricane has damaged O&R's electric transmission and distribution system, and O&R will have to rebuild much of those systems. Once the severe weather conditions have subsided, O&R will begin a systematic inspection, damage assessment, reconstruction, and restoration process. The company released a preliminary projection that the majority of the customers will be restored to service within 10 days. O&R has mobilized and deployed about 1,000 O&R employees who were joined by about 800 contractor field workers. More personnel are expected to arrive through the week.
- First Energy reports approximately 7,500 company personnel and out-of-state workers are assisting with service restoration in New Jersey, West Virginia, Pennsylvania, Ohio, and Maryland but anticipate lengthy outages in the storm's wake. While assessment of the damage by utility workers will be ongoing, the slow-moving nature of the storm will slow the process and hamper the conduct of restoration work.

New York

- At 1:30 AM today (October 30), Consolidated Edison stated initial damage reports include more than 200 wires down on Staten Island. The company cut service last night to two areas of Lower Manhattan and to an area of Brooklyn. Con Ed stated that this was done to protect the underground delivery system equipment from flood waters so that the restoration would happen quicker. The electrical equipment which is in flooded area must have all of its components cleaned of sea water, dried, and then tested.
- Central Hudson Gas and Electric reported yesterday it had 140 tree trimmers and 700 personnel, including 300 line personnel, deployed to address storm damage. The company has received mutual aid crews from Florida, Iowa, Indiana, and Wisconsin.
- New York State Electric and Gas reports the first phase of the service restoration process, damage assessment, will begin once the storm passes, perhaps on Wednesday (October 31).
- Long Island Power Authority (LIPA) reports that several LIPA facilities near the south shore have already been impacted by severe flooding. In addition, localized flooding has made many roads inaccessible to restoration crews. LIPA anticipates assessments can begin after 7AM today (October 30) and expects some customers to be without power at least 7 to 10 days.



U.S. Department of Energy Office of Electricity Delivery & Energy Reliability

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Ohio

- First Energy reports approximately 7,500 company personnel and out-of-state workers are assisting with service restoration in New Jersey, West Virginia, Pennsylvania, Ohio, and Maryland but anticipate lengthy outages in the storm's wake. While assessment of the damage by the utility's workers will be ongoing, the slow-moving nature of the storm will slow the process and hamper the conduct of restoration work.

Pennsylvania

- As of 10:15 PM, Duquesne Light reports crews are in the process of restoring power by removing trees and repairing downed wires. System restoration time is undetermined at this time, as the damage to the electrical system is still being assessed.
- PECO has mobilized more than 3,000 employees, contractors and out-of-state crews. The effort includes more than 1,500 field personnel from utilities in areas such as Tennessee, Kentucky, Louisiana and Mississippi, as well as field personnel from PECO's Chicago-based sister utility ComEd. There is the potential that PECO may not be able to immediately provide estimated restoration times until it is able to more fully assess damage to our system.
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Rhode Island

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Vermont

- As of 5:30 AM today (October 30) Vermont Electric Cooperative reports that all areas will be restored by Noon today.
- On 10/29/12, Green Mountain Power reports nearly 1,000 employees and personnel from out-of-state and Canada are working to respond to outages.

Virginia

- As of 10/29/12, Dominion Power has more than 5,500 workers responding to the storm, including 2,600 workers from other utilities, using more than 800 bucket trucks.
- Northern Virginia Electric Cooperative reports its crews and extra line and tree crews from North and South Carolina are assisting in restoring service to NOVEC's customers.



**U.S. Department of Energy
Office of Electricity Delivery & Energy Reliability**

- Shenandoah Electric Cooperative (SVEC) reports crews from SVEC, other cooperatives, and contractors are prepared to respond to the outages, and will do so, as weather conditions allow.
- Appalachian Power, serving West Virginia and Virginia, reports that more than 400 outside workers are positioned in areas where outages are expected and will assist more than 500 locally-based Appalachian Power employees with service restoration. The utility reports that restoration times for power outages will be unavailable until damage can be safely assessed by crews.

West Virginia

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