



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

Hurricane Sandy Situation Report # 10

November 2, 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 9:00 am EDT November 2 there are 3,628,739 customers without power in the affected States. This is a decrease from the 4,454,650 customers without power reported in Situation Report #9. Restoration estimates and efforts by electric utilities are reported 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	238,871	12%	626,559	387,688
Maryland	18,608	< 1%	311,020	292,412
Massachusetts	1,660	< 1%	298,072	296,412
Michigan	10,003	< 1%	120,637	110,634
New Jersey	1,587,584	39%	2,615,291	1,027,707
New York	1,268,803	14%	2,097,933	829,130
Ohio	68,710	1%	267,323	198,613
Pennsylvania	324,747	5%	1,267,512	942,765
Rhode Island	7,539	2%	116,592	109,053
Virginia	1,910	< 1%	182,811	180,901
West Virginia	100,304	10%	271,765	171,461
TOTAL:	3,628,739		8,175,515	4,546,776

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.

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

- On November 1, the US Environmental Protection Agency (EPA), in consultation with the US Department of Energy, expanded the emergency waiver of the Ultra Low Sulfur Diesel (ULSD) fuel specifications to allow the use of high-sulfur heating oil in diesel-powered highway and nonroad equipment in addition to nonroad vehicles in New Jersey. The waiver will be in effect through November 20.
- On October 31, the US Environmental Protection Agency (EPA), in consultation with the US Department of Energy, issued an emergency waiver of the reformulated gasoline (RFG) requirements for the States of Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, , and Virginia, and the District of Columbia. The waiver also applies to Alabama, Georgia, Mississippi, North Carolina, South Carolina, and



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Tennessee to allow for fuel flexibility in the system. The waiver will be in effect through November 20.

- As of 7:00 am EDT, November 2, the U.S. Nuclear Regulatory Commission (NRC) reports all nuclear power units in the Northeastern United States that were shut down as a result of impacts from Hurricane Sandy have been restarted and are ramping up power output. All nuclear power units that were reduced as a result of the storm have been restored to 100 percent power.

Status of Nuclear Generation Facilities as of 7:00 am EDT 11/2/12

Nuclear Generation Facility	Power Status	Status Notes
Millstone Unit 3 (1,233 MW) Dominion Resources Connecticut	Online 100 percent	Unit 3 was restored to 100 percent power by November 2. Operators had reduced the unit from full power to 73 percent power on October 29 to minimize potential impacts on its circulating water system due to the storm and help maintain grid stability during the storm.
Salem Unit 1 (1,174 MW) PSEG Nuclear New Jersey	Online 1 percent	Unit 1 restarted and was brought up to 1 percent power by November 2. PSEG manually shut Salem Unit 1 at 1:09 am EDT 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.
Indian Point Unit 3 (1,040 MW) Entergy Nuclear New York	Online 30 percent	Unit 3 restarted and ramped up to 30 percent power by November 2. Entergy shut Unit 3 at 10:45 pm EDT on Monday (October 29) due to external electric grid issues caused by Hurricane Sandy.
Nine Mile Point Unit 1 (630 MW) Constellation Energy New York	Online 1 percent	Unit 1 restarted and ramped up to 1 percent power by November 2. On October 29 at 9:00 pm EDT, Unit 1 experienced an automatic reactor scram due to a generator load reject. A lightning arrestor at the unit's switchyard fell onto electrical components during the storm, which caused a loss of offsite power and a grid disturbance.
Nine Mile Point Unit 2 (1,143 MW) Constellation Energy New York	Online 100 percent	On October 30, Unit 2 experienced a loss of one of two incoming offsite power lines as a result of the same fault that tripped Unit 1. One of the plant's emergency diesel generators started in response to generate power usually provided by the line. Unit 2 remained at full power during the incident and continued to operate at full power November 2.
Limerick Unit 1 (1,130 MW) Exelon Corp. Pennsylvania	Online 100 percent	Exelon restored Unit 1 to full power on October 31, after reducing it to 48 percent power October 30 in response to storm-related power outages.
Limerick Unit 2 (1,134 MW) Exelon Corp. Pennsylvania	Online 100 percent	Unit 2 was reduced to 30 percent power by October 31 in response to storm-related power outages. Operators brought the unit up to 100 percent power by November 2.
Vermont Yankee Unit 1 (620 MW) Entergy Nuclear Vermont	Online 100 percent	On October 30 the unit reduced power to 89 percent in response to a request from the grid operator due to the loss of a transmission line in New Hampshire. Operators brought the unit back up to full power by October 31, and it remained at full power November 2.

Sources: Nuclear Regulatory Commission



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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, and the New York State Emergency Operations Center (EOC) in Albany, NY. **ESF 12 has been demobilized from the the FEMA Region III RRCC in Philadelphia, PA.**

Petroleum & Natural Gas Information:

Refineries

- A list of refineries impacted by Hurricane Sandy is presented in the table below.

Refineries in the Path of Sandy as of 7:00 am EDT 11/2/12						
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	335,000	527,200

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

- As of yesterday (November 1), the Port of New York is open to all commercial vessel transits with the exception of the Arthur Kill, Kill Van Kull, Bay Ridge, Red Hook, and Buttermilk Channels. The Kill Van Kull is open to Light Tugs only. Gravesend Bay Anchorage and Anchorage 21-A, B, and C are open. The Hudson River is open to all vessels north of the George Washington Bridge. Vessel entry to the Port and anchorage use is limited to vessels with an approved facility berth or orders to bunker or lighter at anchor. Vessels requesting an exception will be reviewed on a case-by-case basis. The U.S. Coast Guard has reopened all other port sectors affected by Sandy.**

Petroleum Terminals

- Motiva states that four diesel oil storage tanks were damaged at the Sewaren, NJ terminal. The company believes two of these tanks released some of their contents.**
- The table below lists the status of petroleum terminals impacted by Hurricane Sandy.

Status of Petroleum Terminals as of 9:30 am EDT 11/2/12				
Company	City	State	Status	Date Stamp
Motiva	Bridgeport	CT	Open with reduced operations	10/31/12
Hess	Groton	CT	Shut	10/30/12



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Status of Petroleum Terminals as of 9:30 am EDT 11/2/12

Company	City	State	Status	Date Stamp
Gulf Oil	New Haven	CT	Open	11/1/12
Magellan Midstream	New Haven	CT	Open with reduced operations	11/1/12
Motiva	New Haven	CT	Open	10/31/12
Magellan Midstream	Wilmington	DE	Open	10/30/12
NuStar Energy	Andrews AFB	MD	Open	10/31/12
Motiva	Baltimore	MD	Open	10/31/12
NuStar Energy	Baltimore	MD	Open	10/31/12
NuStar Energy	Piney Point	MD	Open	10/31/12
IMTT	Bayonne	NJ	Shut	10/31/12
Kinder Morgan	Carteret	NJ	Shut, Restart in 24-48 hours	11/1/12
Colonial Pipeline	Linden	NJ	Open	11/1/12
NuStar Energy	Linden	NJ	Shut, Restart timing pending	10/31/12
Motiva	Newark	NJ	Shut	10/31/12
NuStar Energy	Paulsboro	NJ	Open	10/31/12
Kinder Morgan	Perth Amboy	NJ	Shut, Restart in 24-48 hours	11/1/12
Motiva	Sewaren	NJ	Shut	10/31/12
Phillips 66	Tremley Point	NJ	Shut	11/1/12
Castle Port Morris	Bronx	NY	Open	11/1/12
Schildwachter Oil	Bronx	NY	Open	11/1/12
Bayside Fuel Oil Depot	Brooklyn	NY	Open	11/1/12
Hess	Brooklyn	NY	Expected to Open Soon	11/2/12
Motiva	Brooklyn	NY	Shut	10/31/12
Skaggs Walsh	College Point	NY	Open	11/1/12
Northville Industries	Holtsville	NY	Open, Expecting Deliveries 11/3	11/2/12
Global Partners	Inwood	NY	Expected to Restart 11/2	11/2/12
Motiva	Long Island	NY	Shut	10/31/12
Global Partners	Newburgh	NY	Open, Expecting Deliveries 11/3	11/2/12
Global Partners	Oyster Bay	NY	Open	11/2/12
Phillips 66	Riverhead	NY	Shut	11/1/12
Kinder Morgan	Staten Island	NY	Shut, Restart in 24-48 hours	11/1/12
Kinder Morgan	Philadelphia	PA	Open	10/31/12
Motiva	Providence	RI	Open	10/31/12
NuStar Energy	Dumfries	VA	Shut, Expected Back 11/1	10/31/12
Motiva	Fairfax	VA	Open	10/31/12
Motiva	Richmond	VA	Open	10/31/12
NuStar Energy	Virginia Beach	VA	Open	10/31/12

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



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Petroleum Pipelines

- Colonial Pipeline reported that yesterday (November 1) it restarted a large section of the Northeast mainline which was shut down on October 29. The company stated that it expected that this line would make deliveries up to Linden, NJ (then end of the mainline) today. Yesterday, the company reported its Linden, NJ, facility resumed deliveries to Buckeye Pipeline. Colonial said that the Linden facility continues to run on portable generators.
- As of November 2, Buckeye Pipeline reports that power has been restored to Linden Station. However, the company is in the process of transferring from the previously installed portable generators to main power which should be completed by later today. Once completed, all pipelines out of the Linden Station will be on main power. The pipeline is supplying jet fuel to the 3 airports in the New York City area.

Natural Gas Pipelines

- As of 4:25 pm EDT yesterday (November 1), New Jersey Natural Gas (NJNG) has completed the shutdown of part of its natural gas infrastructure including lines serving gas to New Jersey's barrier islands.

Electric Restoration Information

Connecticut

- The United Illuminating Company has projected it will complete service restoration to 95% of its customers before midnight on Monday (November 5).
- Connecticut Light and Power (CL&P) projected yesterday (November 1) that, assuming good weather, 98% of customers will have power by Monday (November 5) or Tuesday. The company has 1,500 out-of-state workers from as far as Texas and British Columbia assisting CL&P personnel on the restoration effort. The utility stated that in severely damaged areas, workers have needed to completely rebuild entire sections of the electric system.

Maryland

- FirstEnergy Corp. estimated Thursday (November 1) that its Maryland customers will be restored by early evening Saturday, with the exception of the hardest hit area of Garrett County, which requires further assessment.
- Baltimore Gas and Electric Company (BGE) estimated yesterday (November 1) that the vast majority of its remaining customers without power would be restored by tonight. Restoration may not be complete until the weekend for smaller pockets of customers or where there has been significant system damage. BGE has more than 5,600 employees, contractors and out-of-state linemen, tree personnel and support staff on the restoration team. This number includes more than 1,800 out-of-state and contract linemen, tree personnel and support staff from Alabama, Florida, Georgia, Illinois, Indiana, Louisiana, Mississippi, Missouri, Minnesota, New Mexico, North Carolina, Oklahoma, Tennessee and Texas.

Massachusetts

- NSTAR has restored service to the vast majority of its customers who were affected by Hurricane Sandy as of late last night (November 1). The remaining less than one percent will receive service today (November 2).



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- National Grid estimates full restoration by tonight (November 2) for all areas with one exception—service restoration to Berkshire, MA is still being assessed.

New Hampshire

- Public Service of New Hampshire (PSNH) has restored power to all but 100 isolated customers as of midnight last night (November 1).
- New Hampshire Electric Coop (NHEC) was fully restored at 10:00 PM last night (November 1). Mutual assistance crews facilitated that facilitated the restoration were: Eastern Illini Electric Cooperative (IL), Adams Electric Cooperative (IL), Corn Belt Energy Cooperative (IL), Jo-Carroll Energy Cooperative (IL), EnerStar Electric Cooperative (IL), Shelby Electric Cooperative (IL), Rural Electric Convenience Cooperative (IL), Tri-County Electric Cooperative (IL), Wayne-White Counties Electric Cooperative (IL), Egyptian Electric Cooperative (IL), Southeastern Illinois Electric Cooperative (IL), Vermont Electric Cooperative (VT), Burlington Electric Department (VT), Washington Electric Cooperative (VT), Hardwick Electric Department (VT), and Morrisville Water & Light (VT).

New Jersey

- Public Service Electric and Gas (PSE&G) reported today (November 2) that it forecasts to have virtually all of its customers restored to service within the next seven to ten days. The utility stated that the majority of customers will be restored before then. Customers who have individual flooding or downed lines issues may take slightly longer to be restored. The company stated that they continue to make progress on the substations serving Hudson, Essex, and Middlesex counties which were affected by flood waters. PSE&G has assembled over 1,730 technicians – 600 PSE&G workers, 1,050 workers from across the country, and an additional 600 contractors to cut and remove trees. Crews helping in the restoration efforts have arrived from Florida, Georgia, Indiana, Illinois, Missouri, Pennsylvania, Tennessee, Texas, and Wisconsin, as well as Canada.
- Orange and Rockland (O&R), serving New Jersey, New York, and Pennsylvania estimated last night (November 1) that the vast majority of its customers without power should have electricity restored by the end of next with final restoration occurring through the following week. The company has restored 22 of the 27 transmission lines, all of the 17 de-energized substations, and 40 of the 101 downed distribution circuits. More than 1,000 O&R employees and over 1,000 contractors from almost 20 states are working on rebuilding O&R's electric system.
- Jersey Central Power & Light (JCP&L) reported yesterday (November 1) that the majority of its customers will be restored by Wednesday (November 7) and customers in the hardest-hit areas could expect to be restored throughout the following week. Remaining customers will be restored once damaged roads, infrastructure and homes are rebuilt. In the JCP&L service area the storm caused damage to more than 450 utility poles and 12,000 trees have been cut and removed from JCP&L equipment since Monday (October 29). The restoration of the utility's customers is being worked by 6,400 professionals, including 2,500 linemen and 1,500 forestry workers.
- Atlantic City Electric (AEC) reports extensive damage to its system. As of Noon Wednesday (October 31), AEC estimates 90 percent of customers in the Mainland areas (Cape May, Glassboro, Pleasantville, and Winslow Districts) will be restored by midnight on Sunday (November 4). Those in the barrier islands who are capable of receiving power, except for Long Beach Island, should be restored by midnight Sunday. Over 300 mutual assistance crews arrived yesterday (November 1) and more are set to arrive today (November 2). Crews from Arkansas, Texas, Alabama, Florida,



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New Mexico, South Carolina, Mississippi, Indiana, Tennessee, Louisiana, and many other states are assisting in the restoration effort.

- Sussex Rural Electric Cooperative announced yesterday (November 1) that they expect to have everyone who can be reconnected back on at the end of the day today (November 2).

New York

- Consolidated Edison (ConEd) reported that it expects to restore the vast majority of customers who lost power by next weekend, November 10 - 11. The remaining customer restorations could take an additional week or more. Customers served by underground networks in Mid to Lower Manhattan who lost power during the storm will have service by tomorrow. The company stated yesterday (November 1) that it has commitments from more than 1,600 external contractors and mutual aid workers from as far west as California who are expected to arrive in the next few days.
- Central Hudson estimated this morning (November 2) that it expects the majority of the customers without power to be restored by Saturday night (November 3) with some restoration work continuing on Sunday. The company identified more than 170 broken poles and 1,100 instances of downed wires. Central Hudson is deploying 700 employee line personnel, contractors, and mutual aid crews from Florida, Iowa, Indiana, and Wisconsin.
- New York State Electric and Gas (NYSEG) reported late last night (November 1) that the vast majority of the remaining service interruptions in NYSEG's downstate service areas are expected to be restored by midnight Sunday (November 4). The remaining customers will have service restored by midnight Wednesday (November 7). This assessment is based on newly identified damage. More than 2,100 company and contract personnel are working on the massive power restoration effort, primarily in Putnam, Westchester, Sullivan, Dutchess, and Monroe counties.
- Long Island Power Authority (LIPA) reported this morning (November 2) it expects to restore power to the majority of its customers by the weekend of November 10-11. LIPA has restored power to 19 of 21 hospitals, energized supply to the Ronkonkoma and Babylon lines of the Long Island Rail Road, and restored power to 34 of the 50 substations that were out of power. The company is being supported by over 1,200 crews from Niagara Mohawk Power Corp (National Grid), other utilities, and qualified contractors from as far as California and Texas. The teams are currently assisting with restoration efforts, supported by more than 4,500 people behind the scenes from virtually every LIPA department, assisting with activities such as call handling, logistics, and damage assessment.
- Orange and Rockland (O&R), serving New Jersey, New York, and Pennsylvania estimated last night (November 1) that the vast majority of its customers without power should have electricity restored by the end of next week with final restoration occurring through the following week. The company has restored 22 of the 27 transmission lines, all of the 17 de-energized substations, and 40 of the 101 downed distribution circuits. More than 1,000 O&R employees and over 1,000 contractors from almost 20 states are working on rebuilding O&R's electric system.

Ohio

- Ohio Edison, a FirstEnergy Company, announced last night (November 1), that all remaining customers are expected to be restored by late afternoon tomorrow (November 3).



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Pennsylvania

- PECO expects to be able to restore service to approximately 90 percent of customers impacted by the storm by tonight (November 2) and most remaining customers should have service restored during the weekend. Some customers in the most damaged and isolated areas may be without electricity until early next week. PECO announced today (November 2) it has a team of 4,100 PECO crews, contractors and employees from other utilities working to restore service to its customers.
- First Energy, which includes PennPower, WestPenn Power, Met-Ed and Penelec, reported PennPower and WestPenn Power are both fully restored. In the Met-Ed service territory, 85 percent of customers will be in service by the end of the day today (November 2), 95 percent of customers will be restored by the end of the day tomorrow (November 3), and the remainder will be restored early next week. For Penelec, the majority of customers in Erie, Oil City, Johnstown, Clearfield and Lewistown are restored; the majority of customers in Altoona, Mansfield and Towanda were restored yesterday morning (November 1). Across the First Energy utilities, more than 12,000 company personnel, electrical contractors and outside utility resources are assisting with service restoration efforts.
- PPL Utilities reports that, as of 9:00 am yesterday (November 1) (November), roughly 90 percent of the remaining outages are located in the Lehigh Valley and northeast Pennsylvania. Estimated restoration times include Central and Sesquehanna today (November 2), Lehigh and Northeast on Sunday (November 3), and pockets of extensive damage will go in to next week. The utility projects that customers in north central Pennsylvania, an area including communities such as Hazleton, Pottsville, Sunbury, Bloomsburg, Lock Haven and Williamsport, should have the last of their outages restored by 11:00 PM tomorrow (November 3).
- Orange and Rockland (O&R), serving New Jersey, New York, and Pennsylvania estimated last night (November 1) that the vast majority of its customers without power should have electricity restored by the end of next week with final restoration occurring through the following week. The company has restored 22 of the 27 transmission lines, all of the 17 de-energized substations, and 40 of the 101 downed distribution circuits. More than 1,000 O&R employees and over 1,000 contractors from almost 20 states are working on rebuilding O&R's electric system.

Rhode Island

- National Grid stated yesterday (November 1) that it is worked to complete restoration in Rhode Island by midnight tonight with possible isolated customers being restored tomorrow.

Virginia

- Dominion Power reported that it restored service to all affected customers yesterday evening (November 1), except for a very few locations where flooding or severe damage occurred.
- Northern Virginia Electric Cooperative (NOVEC) restored power to its remaining 300 members late last night (November 1). Some of those remaining outages occurred just the day before when trees, weakened by the storm, fell on power lines. NOVEC crews were assisted by crews from North and South Carolina and Maryland.
- Shenandoah Electric Cooperative (SVEC) restored power to all of its member owners yesterday (November 1). SVEC brought in additional manpower, including crews from six cooperatives, and two contractors, from Alabama, North Carolina, and Virginia to facilitate this restoration. In total, SVEC has approximately 425 men and women working to restore electric service.



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- Appalachian Power (AEP), which services Tennessee, Virginia, and West Virginia, released some restoration estimates yesterday (November 1) for Virginia, noting that Lebanon (Russell) and Tazewell (Tazewell) and all surrounding areas should be 90 percent restored by midnight last night (November 1) and Grundy (Buchanan), Clintwood (Dickenson), and Wise County and all surrounding areas should be 90 percent restored by tonight (November 2).
- **Rappahannock Electric Cooperative (REC) had restored service to most of its member owners at 4:30 PM yesterday (November 1).** Some members may still be without power longer, as access to downed lines is proving difficult in certain off-road and mountainous areas. Remaining outages are concentrated in the counties of Greene, Rappahannock, Fauquier and Madison. In addition to REC work crews and contract resources, the restoration work has been bolstered by help from fourteen sister cooperatives in Tennessee, Alabama, South Carolina and Georgia.

West Virginia

- **Appalachian Power (AEP), which services Tennessee, Virginia, and West Virginia, reports that, in West Virginia, most of the remaining outages are in Boone, Fayette, Lincoln, Kanawha, Raleigh and Wyoming counties. Many areas (including Nicholas, Summers, and Greenbrier counties and the towns of Pt. Pleasant, Ripley, Beckley, Bluefield, Hico, Logan, Williamson, Welch, and Pineville and their surrounding areas) will be 90 percent restored by tomorrow night (November 2) while some (Kanawha, Boone, Cabell, Puntman, Clay, and Roane counties) will not until Sunday night (November 4). More than 50 distribution substations were taken out by the storm and 14 remain out of service; the majority of these stations were restored yesterday (November 1). More than 110 circuit breakers were taken out of service due to the storm and all but about 29 have been restored. Approximately 55 transmission lines were affected by storm and 30 remain out of service.**
- **Mon Power, a FirstEnergy subsidiary, reported yesterday (November 1) that more than 1,100 Mon Power employees, contractors, and outside utility crews are continuing damage assessment and restoration efforts to restore power. Although snow and freezing rain continue to hinder the crews, they are making progress. Approximately 550 miles of the more than 900 miles of transmission lines damaged by the storm have been restored as of late yesterday (November 1). Helicopters were grounded again yesterday (November 1) due to poor weather conditions so crews continued assessing transmission line damage by foot. Crews are challenged by the mountainous terrain and some areas received nearly three feet of snow, making the restoration process difficult. While the majority of affected customers in counties served by Mon Power are expected to be restored by the middle of next week, customers in the hardest-hit areas might not be fully restored until the end of next week.**