



# Tropical Storm Harvey

## Event Report (Update #12)

<b>REPORT TIME &amp; DATE:</b>	4:00 PM EDT   Thursday, August 31, 2017
<b>INCIDENT START DATE:</b>	Friday, August 25, 2017
<b>PRIMARY LOCATION(S):</b>	Gulf Coast (Texas and Louisiana)
<b>REPORT DISTRIBUTION:</b>	Public @ <a href="https://energy.gov/oe/downloads/hurricane-harvey-situation-reports-august-2017">https://energy.gov/oe/downloads/hurricane-harvey-situation-reports-august-2017</a>

### EXECUTIVE SUMMARY

Now Tropical Depression Harvey continues to produce heavy rain across western Louisiana, which has led to significant flooding. Harvey is beginning to move out of the region and is forecast to weaken; however, it will continue to produce weather impacts through Friday.

### Electricity Sector Impacts (as of 2:30 PM EDT)

- Texas
  - As of 2:30 PM EDT, August 31, the State of Texas has 186,969 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents 1.6% of customers in the state.
    - AEP Texas has 86,186 customer outages; a 2% decrease from last report. AEP Texas has restored power to approximately two-thirds of the customers left without power and continues working towards the 95% restoration level by September 6.
    - Entergy Texas has 54,658 customer outages; a 1.4% increase from last report.
    - CenterPoint Energy has 38,853 customer outages; a 24% decrease from last report. CenterPoint Energy is reporting 97.8% of customers have power. Of those still affected, 23,000 are impacted by high water.
- Louisiana
  - As of 2:30 PM EDT, August 31, the State of Louisiana has 9,116 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. An increase in outages are expected to be seen as the storm starts making impacts. This represents <1% of customers in the state.

### Oil and Natural Gas Sector Impacts (as of 2:30 PM EDT)

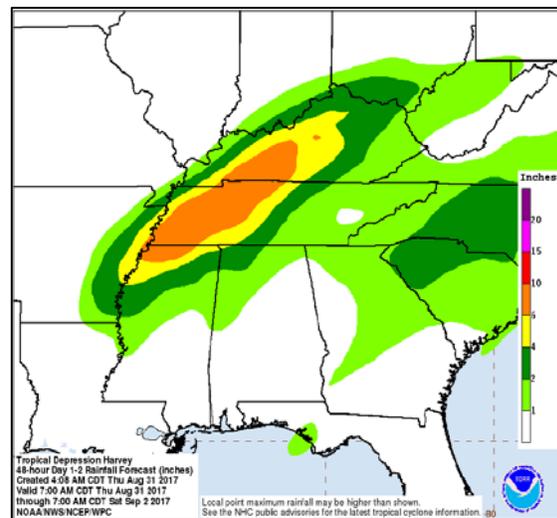
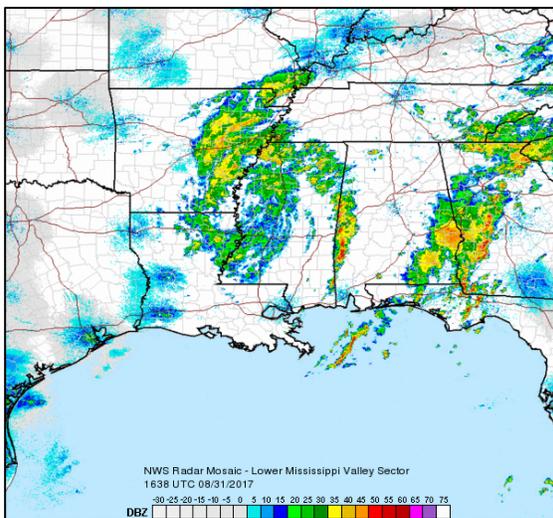
- As of 12:30 PM EDT, August 31, 236,115 b/d (13.49%) of the oil production and 568.09 MMcf/d (17.64%) of the natural gas production in the federally administered areas of the U.S. Gulf of Mexico are shut-in, according to estimates by the Bureau of Safety and Environmental Enforcement (BSEE).
- As of 03:00 PM EDT, August 31, 10 refineries in the Gulf Coast region were shut down, according to public reports. These refineries have a combined refining capacity of 3,075,229 b/d, equal to 31.7% of total Gulf Coast (PADD 3) refining capacity and 16.6% of total U.S. refining capacity.
- The U.S. Coast Guard has set Port Condition Recovery in Houston and Galveston (Open with restrictions) for the ports in Sector Houston and Galveston. In Sectors Corpus Christi, Port Arthur, and Lake Charles the ports remain at Zulu (modified or closed).

- Colonial’s gasoline Line 1 and distillate Line 2 continues to operate intermittently from Lake Charles east to Greensboro, NC and are dependent on terminal and refinery supply. The lines remain down from Houston to Hebert due to impacts from Harvey.
- Colonial currently estimates that it will be able to return to service from Houston Sunday, September 3, following an evaluation of its infrastructure and successful execution of startup.
- The EPA, with concurrence from DOE, issued waivers for gasoline sold in affected counties where low-RVP gasoline is required (9.0 RVP or lower). Allows sale of gasoline up to 11.5 psi RVP in all east coast states located in PADD 1, 2, and 3, and will increase fuel supply flexibility.
- In response to the impacts from Hurricane Harvey, the U.S. Secretary of Energy has authorized the Strategic Petroleum Reserve (SPR) to negotiate and execute two emergency exchange agreements with the Phillips 66 Lake Charles Refinery. This decision will authorize a total of 400,000 barrels of sweet crude oil and 600,000 barrels of sour crude oil to be drawn down from SPR’s West Hackberry site and delivered via pipeline to the Phillips 66 refinery.

**INCIDENT OVERVIEW**

As of 11:00 AM EDT, Tropical Depression Harvey was 35 miles east of Monroe, Louisiana moving northeast at 10 MPH, with maximum sustained winds of 20 MPH and is expected to continue this motion over the next 48 hours. This forecast track takes Harvey into northern Mississippi by Thursday evening and middle Tennessee by Friday.

Harvey is expected to produce additional rainfall accumulations of 3 to 5 inches from eastern Arkansas and northern Mississippi northeastward across western and central Tennessee, western and central Kentucky, southern Ohio, and into West Virginia, with isolated amounts up to 10 inches. These rains will enhance the risk of flash flooding across these areas, especially in northern Mississippi, western Tennessee, and southwest Kentucky. Widespread flooding is expected to continue in and around Houston, Beaumont, Port Arthur, Orange, and toward the Louisiana border through the weekend.



**ELECTRICITY SECTOR**

**OVERVIEW**

Impacted utilities, including Entergy, AEP Texas, and CenterPoint Energy are expecting power outages to last several days. Restoration efforts cannot begin until weather conditions are safe for workers. Sustained wind conditions must be below 34 miles per hour before bucket trucks can be deployed. - High rainfall total and flooding could extend restoration times in many affected areas. Before equipment in flooded areas can be reenergized, waters will need to recede and equipment at substations will need to dry out and be inspected for damage. There are no unmet needs by any electric utility at this time. The Edison Electric Institute (EEI) is reporting that nearly 10,000 resources are being dedicated to the response effort. This includes crews, lineworkers, and support personnel from impacted companies and the industry's mutual assistance network. Mutual assistance crews from at least 21 states are responding. The Electric Reliability Council of Texas (ERCOT) grid continues to be in stable condition. However, 85 transmission lines remain out of service, including two major 345-kV transmission lines serving the Gulf Coast area. As of 2:00 PM EDT Wednesday, August 30, about 7,600 MW of generation capacity was off-line for reasons related to the storm. Governor Abbott of Texas has released a proclamation authorizing utilities to make temporary connections for both distribution and transmission systems.

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 08/31/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Louisiana	9,116	<1%	22,636
Texas	186,969	1.6%	277,973
<b>Total</b>		-	*

*\*There is no sum of the Peak Customer Outage column because peaks for individual utilities occur at different times; a total would not reflect peak outages.*

- Louisiana
  - As of 2:30 PM EDT, August 31, the State of Louisiana has 9,116 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. An increase in outages are expected to be seen as the storm starts making impacts. This represents <1% of customers in the state.
    - Southwestern Electric Power Co. (SWEPCO) has 3,371 customer outages. This is a 44.5% decrease from last report.
    - Entergy Louisiana has 3,204 customer outages. This is a 116% Increase from last report.
    - CLECO Power Inc. has 1,554 customer outages. This is a 58% decrease from last report.
    - Beauregard Electric Coop (BECi) has 974 customer outages. This is a 65% increase from last report.



- Entergy Louisiana expects the vast majority of remaining customers to have power restored by 11 PM EDT Thursday. In Calcasieu Parish alone, the storm damaged 18 poles and 12 transformers.
- Texas
  - As of 2:30 PM EDT, August 31, the State of Texas has 186,969 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents 1.6% of customers in the state.
    - AEP Texas has 86,186 customer outages. This is a 2% decrease from last report.
    - Entergy Texas has 54,658 customer outages. This is a 1.4% increase from last report.
    - CenterPoint Energy has 38,853 customer outages. This is a 24% decrease from last report.
    - Sam Houston Electric Coop has 3,536 customer outages.
  - AEP Texas has restored power to approximately two-thirds of the customers left without power as a result of the storm and continue working towards the 95% restoration level originally projected for the night of Wednesday, September 6.
  - AEP Texas estimates at least 3,100 distribution poles down and 500 transmission structures were damaged or completely knocked down by the storm. Crews had reenergized 208 distribution circuits by Wednesday afternoon, and approximately 111 circuits remain off line.
  - AEP Texas currently has over 4,600 resources from around the country working in the Coastal Bend area to restore power to customers.
  - AEP Texas has released preliminary Estimated Restoration Times (ETR) for 10 communities, including Rockport and Port Aransas. Those ETRs range from 11 PM EDT Thursday to 11 PM EDT Friday, September 8. ETRs are still being determined for other communities and will be released at a later time.
  - CenterPoint Energy is reporting 97.8% of customers have power. Of those still affected, 23,000 are impacted by high water.
  - CenterPoint Energy has received aid from over 800 mutual assistance resources from Westar Energy, Duke Energy, KCP&L, Alabama Power, and others.
  - CenterPoint Energy is operating three staging sites around Houston to mobilize restoration crews.
  - Entergy Texas are unable to restore 4,300 customers due to high water. Damage will be assessed in those areas as flood waters recede.
  - Entergy Texas has reported their Lewis Creek Dam remains stable and secure due to recent hardening efforts and increased inspections of the facility. Reservoir levels remain within the normal range of control.
  - Texas-New Mexico Power continue to estimate most of its customers will be restored by 7 PM EDT Sunday, September 3. Areas in Dickinson, Friendswood, and western Brazoria County cannot be restored due to flood waters.
  - Texas-New Mexico Power does NOT have plans to shut off power to the City of Dickinson or other portions of its service territory despite public speculation.
  - Both units at the South Texas Project (STP) nuclear power facility, with a nameplate capacity of 2760 MW, continue to operate at full power as of 7:20 AM EDT, August 31, per



the Nuclear Regulatory Commission Power Reactor Status Report. The storm has cleared the plant. There are no threats to generation. DOE remains in contact with the Nuclear Regulatory Commission (NRC), which will have an onsite resident throughout the storm.

- The Governor of Texas released a proclamation authorizing utilities to make temporary connections at the distribution and transmission level and use private property and public easements to restore power and reconstruct the electric grid.

**OIL & GAS SECTOR**

**OFFSHORE PRODUCTION**

- As of 12:30 PM EDT, August 31, 236,115 b/d (13.49%) of the oil production and 568.09 MMcf/d (17.64%) of the natural gas production in the federally administered areas of the U.S. Gulf of Mexico are shut-in, according to estimates by the Bureau of Safety and Environmental Enforcement (BSEE).

<b>U.S. Gulf of Mexico Oil &amp; Gas Production Status</b> <i>as of 12:30 PM EDT 08/31/2017</i>			
<b>Production</b>	<b>Pre-Event</b>	<b>Shut-In (08/30)</b>	<b>Shut-In (08/31)</b>
Crude Oil (b/d)	1,750,000	323,760	236,115
Natural Gas (MMcf/d)	3,220	611.09	568.09
<b>Infrastructure</b>	<b>Pre-Event Count</b>	<b>Evacuated (08/30)</b>	<b>Evacuated (08/31)</b>
Manned Platforms	737	102	94
Rigs	31	5	5

Source: BSEE

**ONSHORE PRODUCTION**

- On August 26, the Texas Railroad Commission estimated that approximately 300,000 to 500,000 b/d of crude production had been shut-in in the Eagle Ford region from a pre-storm production estimate of 870,000 b/d. In addition, approximately 3.0 Bcf/d of natural gas production had been shut-in from a pre-storm production estimate of about 6.0 Bcf/d. The Commission had expected most idled production to come back online in the next few days.

**PETROLEUM REFINERIES**

- As of 03:00 PM EDT, August 31, 10 refineries in the Gulf Coast region remain shut down, according to public reports. These refineries have a combined refining capacity of 3,075,229 b/d, equal to 31.7% of total Gulf Coast (PADD 3) refining capacity and 16.6% of total U.S. refining capacity.
- Six refineries had begun the process of restarting, which may take a several days or weeks depending whether they have been damaged. These refineries have a combined capacity of 1,269,720 b/d, equal to 13.1% of total Gulf Coast (PADD 3) refining capacity and 4.2% of total U.S. refining capacity.



- Two refineries in the Gulf Coast region were operating at reduced rates. The refineries have a combined capacity of 688,776 b/d, equal to 7.1% of total Gulf Coast (PADD 3) refining capacity and 3.7% of total U.S. refining capacity.

**PORTS**

- The U.S. Coast Guard has set the following conditions for ports and waterways in the U.S. Gulf Coast region as a result of Harvey.
- On August 30, Louisiana Offshore Oil Port (LOOP) facilities, and pipeline receipts and deliveries at the Clovelly Hub were operating normally. Vessel operations were also continuing as sea conditions allow. LOOP indicated this would be the last Hurricane Harvey advisory update.

<b>Status of Texas and Louisiana Gulf Coast Ports as of 3:00 PM EDT 08/31/2017</b>		
<b>Port</b>	<b>Status</b>	<b>Date Stamp</b>
<b>Sector Corpus Christi</b>		
Brownsville	Open.	08/26/17
Corpus Christi	Port Condition Zulu (Modified). Closed. Port has opened inner harbor to barge movements. Port is assessing damage. Working to restore normal operations by 9/4.	08/30/17
<b>Sector Houston and Galveston</b>		
Freeport	Port Condition Recovery. Open with restrictions.	08/30/17
Galveston	Port Condition Recovery. Open with restrictions.	08/30/17
Houston	Port Condition Recovery. Open with restrictions. Upper Houston Ship Channel from Morgan’s Point inbound to the Turning Basin remains closed for vessel traffic until weather conditions improve.	08/30/17
Texas City	Port Condition Recovery. Open with restrictions.	08/30/17
<b>Sector Port Arthur and Lake Charles</b>		
Beaumont	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Lake Charles	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Nederland	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Orange	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Port Arthur	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Port Neches	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Sabine Pass	Port Condition Zulu. Closed. Unprecedented currents on the Neches River preventing movements for several more days.	08/30/17
<b>Sector Morgan City</b>		



Houma	Houma navigational channel and Bayou Grand Caillou Floodgates closed. Closure will restrict access to Houma.	08/29/17
Berwick	Open with restrictions. Temporary emergency vehicle controls in effect.	08/30/17
Morgan City	Open with restrictions. Temporary emergency vehicle controls in effect.	08/30/17
<b>Sector Lower Mississippi River</b>		
All ports	Due to heavy weather, mariners are advised by the COTP to transit the lower Mississippi, Arkansas, Red, Black, and Ouachita rivers and other river tributaries with caution.	08/30/17

Source: U.S. Coast Guard

**PIPELINES**

- DOE is closely monitoring the petroleum product supply following the impacts from Hurricane Harvey. Currently gasoline stocks in the Southeast are at or above the historic 5-year range.
- The Department will continue working with Environmental Protection Agency (EPA) and the Department of Transportation (DOT) to ensure the appropriate waivers are providing flexibility in the market to alleviate supply issues in the area.
- Colonial Pipeline (lines 1 and 2 from Lake Charles east) is operating intermittently when refinery and terminal product is available to fill the line.
- Colonial is providing regular updates via its website at: <https://harvey.colonialresponse.com/>

**RAIL**

- Rail is critical for the delivery of ethanol to petroleum product terminals for gasoline blending and for the movement of refinery byproducts, including propane, butanes, and sulfur out of refineries. The following rail lines have reported disruptions:
  - On August 25, Kansas City Southern Railway declared force majeure and an embargo on shipments through Laredo and Brownsville-Matamoros going to Houston and Corpus Christi. On August 28, KC Southern declared force majeure and an embargo on the remainder of its network in Texas affected by Harvey.
  - As of August 30, Union Pacific said sections of its track were out of service in 18 of its 28 Houston-area subdivisions, and it was sending traffic along alternate routes through Longview and Dallas. UP was using helicopters and drones to inspect track and facilities in the affected areas. Its workers were reorganizing major rail yards at Settegast, near downtown Houston, and Englewood, including assessing infrastructure, getting trains reassembled and cars back in the yard. Parts of UP’s Englewood Yard were flooded as of late August 29.
  - BNSF said on August 29 that normal train flows in the area were unlikely to resume for “an extended period.”
  - CSX Corp. said on August 30 that it was closely watching weather conditions in Louisiana and the southwestern portion of its operating network.

**WAIVERS**

- The table below lists fuel-related waivers issued by the U.S. Environmental Protection Agency (U.S. EPA) and State agencies. (<https://www.epa.gov/enforcement/fuel-waivers#2017>)
- On August 30, U.S. EPA issued a multi-state (13 states) waiver for requirements of low-RVP conventional gasoline and reformulated gasoline (RFG). Later in the day, the waiver was expanded to include 38 states and Washington, DC.

State Fuel Waivers as of 3:00 PM EDT 08/31/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	<p><b>RVP</b> standard waived for gasoline sold in affected counties where low-RVP gasoline is required (9.0 RVP or lower). Allows sale of gasoline up to 11.5 psi RVP in all east coast states located in PADD 1 – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia; all Midwestern states located in PADD 2 - Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin; and all Gulf coast states located in PADD 3 – Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas. The waiver supersedes and expands the areas covered by the August 30 waiver.</p> <p><b>RFG</b> standard is also waived in the designated states and D.C. Also waived are provisions prohibiting the blending of RFG blendstock with conventional gasolines or blendstocks.</p>	U.S. EPA	08/30/17 Expanded: 08/31/17	09/15/17	Active
TX	<p><b>RFG</b> requirement waived in Houston-Galveston-Brazoria areas. Waiver expanded to four-county Dallas-Fort Worth RFG area 8/26. Allows the sale or distribution of conventional gasoline.</p>	U.S. EPA	08/25/17	09/15/17	Active
TX	<p><b>7.8 psi RVP</b> standard waived for gasoline sold in 20 counties where low-RVP gasoline is</p>	U.S. EPA	08/25/17	09/15/17	Active



	required and are also under the Governor’s Disaster Declaration. Waiver expanded to 98 counties required to use low-RVP fuel 8/26. Allows sale of gasoline up to 9.0 psi RVP.				
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Sources: [U.S. Department of Transportation](#); Governor Office Websites

- Six states have declared state emergencies due to Harvey. These declarations automatically waive select Federal Motor Carrier Safety Regulations (FMCSRs), including hours-of-service (HOS) regulations, for motor carriers hauling resources to aid in restoration efforts. The declarations exempt FCMSR in every state along the motor carrier’s route as long as the final destination is with the declared disaster areas. In addition, the Federal Motor Carrier Safety Administration (FMCSA) declared that issued a Regional Emergency Declaration exempting FMCSRs in the States of Texas and Louisiana.
- The table below summarizes emergency declarations and HOS waivers issued by states.

State Emergency Declarations and HOS Waivers <i>as of 3:00 PM EDT 08/31/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
Regional (Texas & Louisiana)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA.	08/25/17	10/26/17	Active
Texas	State of Disaster declared for Aransas, Austin, Bee, Calhoun, Chambers, Colorado, Brazoria, DeWitt, Fayette, Fort Bend, Galveston, Goliad, Gonzales, Harris, Jackson, Jefferson, Jim Wells, Karnes, Kleberg, Lavaca, Liberty, Live Oak, Matagorda, Nueces, Refugio, San Patricio, Victoria, Waller, Wharton, and Wilson counties.	08/23/17	TBD	Active
Louisiana	State of Emergency declared.	08/23/17	TBD	Active
Kentucky	HOS waiver issued for transporters of food, water, medicine, fuel and other commodities within the affected areas to aid in emergency response of affected areas. All economic requirements normally associated with interstate motor transportation for all vehicles providing relief supplies to affected areas.	08/28/17	09/27/17	Active
Alabama	State of Emergency/HOS waiver issued for petroleum products and petroleum-related	08/30/17	09/29/17	Active



	supplies, goods, and services in and through the State.			
Georgia	State of Emergency/HOS waiver issued for petroleum products through the State.	08/30/17	09/20/17	Active
Kansas	Governor acknowledged state of emergency in Texas and declared that licensing rules, registration and fuel tax permits, and oversize vehicle permit fees are waived for motor carriers and persons operating motor vehicles directly participating in the relief and restoration effort.	08/30/17	09/20/17	Active

Sources: [U.S. Department of Transportation](#); Governor Office Websites

**DOE Strategic Petroleum Reserve Status (from the Office of Fossil Energy)**

DOE Strategic Petroleum Reserve Site Status <i>(as of 8/31/2017)</i>				
	Bayou Choctaw Site	West Hackberry Site	Big Hill Site	Bryan Mound Site
<b>Commercial Power Availability</b>	Available	Available	Available	Available
<b>Drawdown Capability</b>	Drawdown Ready	Drawdown Ready	Drawdown Ready	Drawdown Ready

- In response to the impacts from Hurricane Harvey, the U.S. Secretary of Energy has authorized the Strategic Petroleum Reserve (SPR) to negotiate and execute two emergency exchange agreements with the Phillips 66 Lake Charles Refinery. This decision will authorize a total of 400,000 barrels of sweet crude oil and 600,000 barrels of sour crude oil to be drawn down from SPR’s West Hackberry site and delivered via pipeline to the Phillips 66 refinery.
- The Department will continue to provide assistance as deemed necessary, and will continue to review incoming requests for SPR crude oil. Should the Secretary decide to approve additional requests for an emergency exchange of crude oil from the SPR, the public will be notified.

