



Tropical Storm Harvey

Event Report (Update #6)

REPORT TIME & DATE:	4:00 PM EDT Monday, August 28, 2017
INCIDENT START DATE:	Friday, August 25, 2017
PRIMARY LOCATION(S):	Gulf Coast (Texas and Louisiana)
REPORT DISTRIBUTION:	Public

EXECUTIVE SUMMARY

Harvey continues to produce heavy rain across southeastern Texas and Louisiana, which has led to significant flooding. Harvey will continue to impact the region through middle of the week with an additional 15 – 25 inches of rain expected through Friday. Harvey made landfall around 11:00 PM EDT on Friday, August 25 between Port Aransas and Port O’Connor, Texas as a category 4 hurricane.

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

- Texas: 292,704 customers power outages (2.5% of total customers)
 - AEP Texas is the most significantly impacted utility
 - AEP estimates 95% of outages in Corpus Christi area will be restored by late Wednesday and expects 95% of outages restored for most other areas by Saturday; however, estimates may be updated upon completion of damage assessments
 - Restoration in severely damaged or flooded areas will be delayed and utilities are reminding customers that before electricity can be restored to homes or business impacted by flooding, customers need to have electrical equipment inspected
- Louisiana: 2,582 customer power outages (<1% of total customers)

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

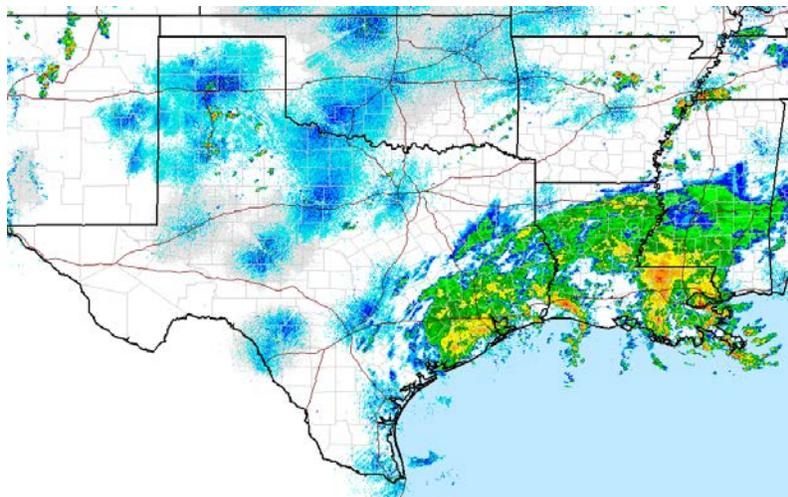
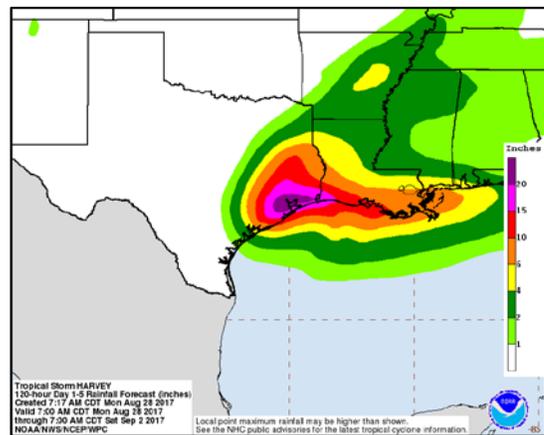
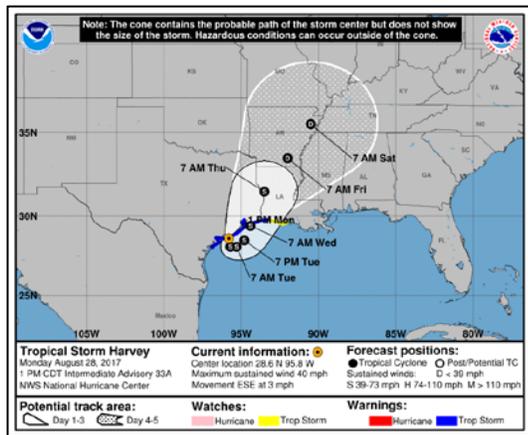
- As of Monday 19% of oil production 18% of natural gas production in Gulf of Mexico was shut-in
- Six refineries in the Corpus Christi area and four refineries in the Houston/Galveston area are shut down. Three refineries in the Houston/Galveston region area and one refinery in the Beaumont/Port Arthur area were operating at reduced rates.
- Retail gas station outages have been reported in the impacted region; however, overall stocks of gasoline and distillate in the region are at or above the top-end of the 5-year range.

INCIDENT OVERVIEW

As of 2:00 PM EDT, Harvey was 40 miles east-southeast of Port O’Connor, Texas moving east-southeast at 3 MPH, with maximum sustained winds of 40 MPH (tropical storm). Tropical-storm-force winds extend outward up to 175 miles. Harvey is currently drifting erratically toward the east-southeast, and a slow motion toward the southeast is expected later today through tonight. A gradual turn toward the northeast and a continued slow forward speed are expected Tuesday and Tuesday night. On the forecast track, the center of Harvey is expected to be just offshore of the middle and upper coasts of Texas through Tuesday night.

Harvey is expected to produce additional rain accumulations of 15 to 25 inches through Friday over the upper Texas coast and into southwestern Louisiana. Isolated storm totals may reach 50 inches over the upper Texas coast, including the Houston/Galveston metropolitan area. Elsewhere, Harvey is expected to produce total rain accumulations of 5 to 15 inches farther south into the middle Texas coast, farther west toward the Texas Hill Country, and farther east across south-central Louisiana. Storm surge of 1 to 3 feet is still possible throughout the coastal areas under a tropical storm warning.

A tropical storm warning is currently in effect from Mesquite Bay, Texas to Cameron, Louisiana and flood and flash flood warnings have been issued throughout the region.



ELECTRICITY SECTOR

OVERVIEW

Impacted utilities, including Entergy, AEP Texas, and CenterPoint Energy have issued statements and 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 Southeastern Electric Exchange and the Midwest Mutual Assistance Group are actively monitoring the need for mutual assistance and crew deployments to respond to power outages in Texas and Louisiana. A federal major disaster declaration was approved on August 25, 2017 for the State of Texas and August 28, 2017 for the State of Louisiana. The Electric Reliability Council of Texas (ERCOT) reports “normal” system status and does not expect the need for the use of extraordinary measures to maintain system reliability.

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 08/28/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Louisiana	2,582	<1%	8,215
Texas	292,704	2.5%	306,058
Total	295,286		*

**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 28, the State of Louisiana has 2,582 customer outages. This represents <1% of customers in the state.
 - Entergy Louisiana has 1,052 customer outages
 - Southwestern Electric Power Co. (SWEPCO) has 620 customer outages
 - CLECO Power Inc. has 472 customer outages.
 - Beauregard Electric Coop (BECi) has 271 customer outages.
 - Entergy Louisiana expects extended outages due to floodwaters.
 - Entergy New Orleans is anticipating the storm to take a northeasterly track as forecasted. Entergy New Orleans is monitoring the storm’s progression and feeder bands.
 - SWEPCO is sending 187 personnel to assist in AEP Texas restoration efforts.
 - CLECO Power Inc. crews, along with contractor crews, are currently on stand-by and prepared to restore service. CLECO is monitoring the storm.
 - The President approved the Governor’s request for a Federal Emergency Declaration.
 - The Governor of Louisiana has declared a state of emergency.



- The Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) has deployed two Emergency Management Assistance Compact (EMAC) Advance Team personnel to Texas in response to the storm. Texas made the request for personnel through the EMAC.
- Texas
 - As of 2:30 PM EDT, August 28, the State of Texas has 292,704 customer outages. This represents 2% of customers in the state.
 - AEP Texas has 145,778 customer outages. This is a 0.9% decrease from last report.
 - CenterPoint Energy has 92,976 customer outages. This is a 13% increase from last report.
 - Entergy Texas has 32,230 customer outages. This is a 34% increase from last report.
 - Texas New Mexico Power has 7,854 customer outages. This is a 57% decrease from last report.
 - AEP Texas reports approximately 3,000 personnel from Kentucky, Illinois, Missouri, and other states are working to restore power. Estimated Times of Restoration (ETRs) may be impacted by flooding and newly ordered evacuations. However, AEP Texas has not changed their ETR projections.
 - AEP Texas projects that by 11 PM EDT Wednesday, crews will have restored power to 95% of the customers within the City of Corpus Christi and the Sinton area. Restoration for the majority of all other areas impacted by the storm is expected to reach the 95% by 11 PM EDT Saturday. Restoration dates and times are still to be determined for Rockport, Port Aransas, Fulton, Woodsboro, Port Lavaca, Lamar and Bayside. The damage in these communities is the most severe and will require the most amount of repairs.
 - AEP Texas has issued a preliminary report of 54 substations and 56 transmission lines out of service.
 - CenterPoint Energy is unable to address impacted customers in downtown Houston until floodwaters have receded and electric infrastructure has dried out.
 - CenterPoint Energy has reported an additional 70 crews arrived Monday morning.
 - Texas-New Mexico Power has changed their overall estimate of 100% restoration to Thursday, August 31 at 7:00 PM EDT, a difference of 72 hours from the previous estimate. TNMP crews are being severely impaired by flooding in the I-45 corridor.
 - Entergy Texas has reported their Lewis Creek Dam remains stable and secure due to recent hardening efforts and increased inspections of the facility.
 - Entergy Texas personnel cannot access some of their electrical facilities that provide service due to debris and flooding. Within their service territory, they are reporting flooding in the cities of Beaumont, Dayton, Winnie, The Woodlands, Navasota, and Cleveland, which may result in slower restoration.
 - Guadalupe Valley Electric Cooperative (GVEC) suspended overnight restoration efforts. GVEC resumed those efforts on Sunday morning.
 - On Saturday night, the Governor of Texas added 20 counties to the state disaster declaration, bringing the total to 50 counties.



OIL AND GAS SECTOR

OFFSHORE PRODUCTION

- As of 12:30 PM EDT, August 28, 331,370 b/d (18.94%) of the oil production and 583.39 MMcf/d (18.12%) 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).

U.S. Gulf of Mexico Oil & Gas Production Status <i>as of 12:30 PM EDT 08/28/2017</i>			
Production	Pre-Event	Shut-In (08/27)	Shut-In (08/28)
Crude Oil (b/d)	1,750,000	378,633	331,370
Natural Gas (MMcf/d)	3,220	827	583.39
Infrastructure	Pre-Event Count	Evacuated (08/27)	Evacuated (08/28)
Manned Platforms	737	105	98
Rigs	31	6	5

Source: BSEE

PETROLEUM REFINERIES

- As of 03:00 PM EDT, August 28, all six refineries in the Corpus Christi area and four refineries in the Houston/Galveston area were shut down, according to public reports. These refineries have a combined refining capacity of 2,170,149 b/d, equal to 43.2% of total Texas Gulf Coast refining capacity and 11.8% of total U.S. refining capacity. In addition, three refineries in the Houston/Galveston region area and one refinery in the Beaumont/Port Arthur area were operating at reduced rates. Two more refineries in the Beaumont/Port Arthur area were operating at near full capacity but were considering shutting down.

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.
- In addition, Louisiana Offshore Oil Port (LOOP) facilities are currently reporting normal operations. LOOP is executing its Inclement Weather Plan and will update Shippers accordingly.

Status of Texas and Louisiana Gulf Coast Ports as of 3:00 PM EDT 08/28/2017		
Port	Status	Date Stamp
Sector Corpus Christi		
Brownsville	Open.	08/26/17
Corpus Christi	Port Condition Zulu. Closed. Port is assessing damage. Working to restore normal operations by 9/4.	08/28/17
Sector Houston and Galveston		
Freeport	Port Condition Zulu. Closed. To remain at Zulu for next 48 hours.	08/28/17



Galveston	Port Condition Zulu. Closed. To remain at Zulu for next 48 hours.	08/28/17
Houston	Port Condition Zulu. Closed. To remain at Zulu for next 48 hours.	08/28/17
Texas City	Port Condition Zulu. Closed. To remain at Zulu for next 48 hours.	08/28/17
Sector Port Arthur and Lake Charles		
Beaumont	Port Condition X-Ray. Open with restrictions.	08/27/17
Lake Charles	Port Condition X-Ray. Open with restrictions.	08/27/17
Orange	Port Condition X-Ray. Open with restrictions.	08/27/17
Port Arthur	Port Condition X-Ray. Open with restrictions.	08/27/17
Sabine Pass	Port Condition X-Ray. Open with restrictions.	08/27/17

Source: U.S. Coast Guard

NATURAL GAS UTILITIES

- On August 27, CenterPoint Energy (Houston metropolitan area) reports that its natural gas system is functioning normally. The company has responded to leak calls in areas of the city that our crews have been able to safely access.

WAIVERS

- The U.S. Environmental Protection Agency (EPA) has approved a request made by the Texas Commission on Environmental Quality (TCEQ) to waive requirements for reformulated gasoline (RFG), Reid vapor pressure (RVP), and Texas Low Emission Diesel (TxLED) that apply in some counties covered by the Governor’s Disaster Proclamation. The waiver was issued after consultation with the U.S. Department of Energy to address a fuel supply emergency caused by refinery shutdowns and evacuations associated with Hurricane Harvey.

State Fuel Specification Waivers as of 3:00 PM EDT 08/28/2017				
State	Waived Requirement	Effective Dates		Status
		Start	End	
Texas	RFG requirement waived in Houston-Galveston-Brazoria areas. Allows the sale or distribution of conventional gasoline.	08/26/17	09/15/17	Active
Texas	7.8 psi RVP standard waived for gasoline sold in 20 counties where low-RVP gasoline is required and are also under the Governor’s Disaster Declaration.	08/26/17	09/15/17	Active
Texas	TxLED requirement waived in 29 counties that require TxLED and are also under the Governor’s Disaster Declaration.	08/26/17	09/15/17	Active

Source: U.S. Environmental Protection Agency

- In response to Harvey, the Federal Motor Carrier Safety Administration (FMCSA) declared that an emergency exists that warrants issuance of a Regional Emergency Declaration in the States of Texas and Louisiana and an exemption from certain Federal Motor Carrier Safety Regulations



(FMCSRs), including hours-of-service (HOS) regulations, to addresses possible emergency conditions creating a need for immediate transportation of supplies, equipment and persons into and from those States.

- Texas and Louisiana have declared state emergencies due to Harvey. These declarations automatically waive select 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 Texas or Louisiana.

State Emergency Declarations and HOS Waivers <i>as of 3:00 PM EDT 08/28/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
Regional (Texas & Louisiana)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA.	8/25/17	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.	8/23/17	TBD	Active
Louisiana	State of Emergency declared.	8/23/17	TBD	Active

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

