



Hurricane Irma & Hurricane Harvey

Event Report (Update #21)

REPORT TIME & DATE:	4:00 PM EDT Wednesday, September 6, 2017
INCIDENT START DATE:	Friday, August 25, 2017
PRIMARY LOCATION(S):	Irma: Leeward Islands // Harvey: Gulf Coast (Texas and Louisiana)
REPORT DISTRIBUTION:	Public

EXECUTIVE SUMMARY

As of 2:00 PM EDT, Hurricane Irma was 20 miles east-northeast of St. Thomas and 90 miles east of San Juan, Puerto Rico, moving west-northwest at 16 MPH, with maximum sustained winds of 185 MPH (category 5). Irma will continue to move over portions of the Virgin Islands during the next couple of hours and pass near or just north of Puerto Rico this afternoon or tonight. Irma is then forecast to turn north towards Florida. Southern Florida is likely to begin experiencing tropical storm-force winds late Friday or early Saturday with the center of the storm potentially approaching Florida Sunday morning.

Hurricane Irma

DOE is closely monitoring the storm and ESF #12 responders have been prepositioned with FEMA Incident Management Assistance Teams (IMAT) in Puerto Rico, St. Thomas, and St. Croix. ESF #12 responders are also deployed to both the FEMA Region II and IV Coordination Centers.

Irma Electricity Sector Summary (as of 2:30 PM EDT)

- The U.S. Virgin Island Water and Power Authority de-energized the grid on St. Thomas as a precaution to enable faster restoration. As the storm passes, the grid will be reenergized and restoration efforts will begin on damage infrastructure
- St. Croix and St. John have outages of 13,210 and 1,053 customers, respectively.
- Puerto Rico reported 415,258 customer outages as of 2:30 PM EDT
- DOE is working with Puerto Rico, the Electricity Sub-Sector, and FEMA to help facilitate the movement of mutual aid crews to the island, if needed, after the storm has passed

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

DOE is working with the Energy Information Administration to assess potential impacts to the oil and gas sector from Hurricane Irma. As of the August 25 Weekly Petroleum Status Report, stocks of gasoline in PADD 1 (East Coast) were near the top end of the 5-year range, including PADD 1C (Lower Atlantic).

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

- Five refineries in the Gulf Coast area remain shut down and six refineries are in the process or restarting. At least seven refineries are operating at a reduced rate.

Harvey Electricity Sector Summary (as of 2:30 PM EDT)

- As of 2:30 PM EDT, September 6, the State of Texas has 53,237 customer outages
 - AEP Texas has 30,869 customer outages.
 - Entergy Texas has 15,209 customer outages.
 - CenterPoint Energy has 4,877 customer outages.
- The majority of AEP Texas restoration crews continue to work in the Aransas Pass, Rockport, Victoria, and Port Lavaca/Refugio areas. Most communities have Estimated Times of Restoration (ETRs) of 11 PM EDT Friday, September 8.
- CenterPoint Energy is reporting 3,408 of their customers are inaccessible due to high water.

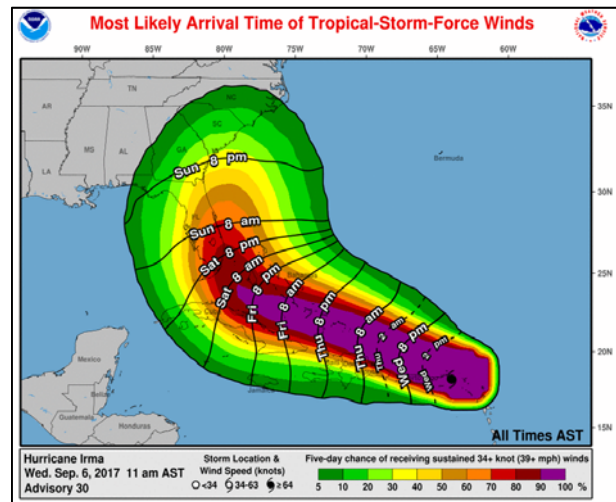
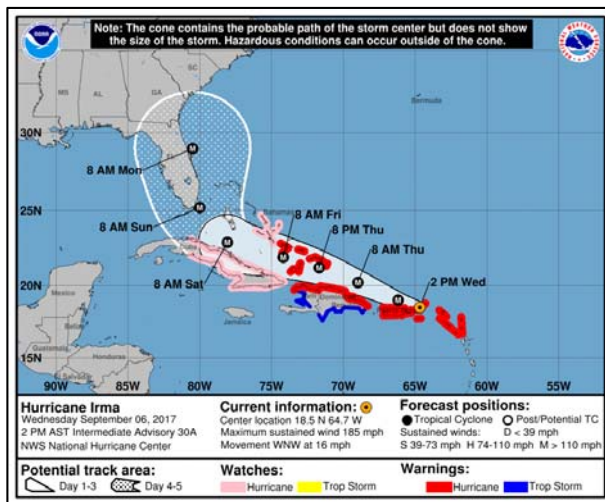


HURRICANE IRMA INCIDENT OVERVIEW

As of 2:00 PM EDT, Irma was 20 miles east-northeast of St. Thomas and 90 miles east of San Juan, Puerto Rico, moving west-northwest at 16 MPH, with maximum sustained winds of 185 MPH (category 5). Hurricane-force winds extend outward up to 50 miles and tropical storm-force winds extend up to 185 miles from the center. On the forecast track, the core of Irma will continue to move over portions of the Virgin Islands during the next couple of hours, pass near or just north of Puerto Rico this afternoon or tonight and pass near or just north of the coast of the Dominican Republic Thursday. Irma is then forecast to turn north and may impact Florida. Southern Florida is likely to begin experiencing tropical storm-force winds late Friday or early Saturday with the center of the storm potentially approaching Florida Sunday morning.

Irma is expected to produce storm surge of 7 to 11 feet above normal tide levels along the coasts of the northern Leeward Islands, including Virgin Islands (except St. Croix) and will be accompanied by heavy surf. In the southeastern Bahamas and Turks and Caicos, storm surge of 15 to 20 is expected, 4 to 6 feet for the northern coast of Puerto Rico and 2 to 4 feet for the southern coast of Puerto Rico and St. Croix.

Hurricane warnings are in effect for the Leeward Islands, including: the U.S. Virgin Islands, Puerto Rico, Vieques and, Culebra and the British Virgin Islands, and the southeastern Bahamas. Hurricane watches and tropical storm warnings have been issued for outlying areas.



HURRICANE HARVEY INCIDENT OVERVIEW

Hurricane 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. Harvey was the strongest hurricane to impact Texas since 1961 and the first category 4 storm to make landfall in the United States since Hurricane Charley impacted Florida in 2004.

The National Weather Service reported showers and thunderstorms Tuesday and into Wednesday, but widespread heavy rainfall is unlikely. Peak river crests are expected to occur this weekend with a slow recession thereafter for upper TX and southwest LA coasts, including Houston and Beaumont.

Hurricane Irma

ELECTRICITY SECTOR

- As of 2:00 PM EDT, U.S. Virgin Island Water and Power Authority (WAPA) reported that all 14,543 customers on the island of St. Thomas (population: 51,634) are without power; however, WAPA de-energized the grid on St. Thomas around 10:00 AM EDT as a precaution to prevent damage. The islands of St. Croix and St. John have outages of 13,210 and 1,053 customers, respectively.
- WAPA is continuing to generate sufficient electricity to maintain operations at the territory's hospitals and airports. Customers without service at the present time should expect to remain without service until Irma has passed and crews can assess damage levels and implement a restoration schedule.
- The Puerto Rico Electric Power Authority (PREPA) is reporting 415,258 customers (approximately 28% of total customers) are without power.
 - DOE is working closely with PREPA, the American Public Power Association, and FEMA on a plan to facilitate mutual aid for Puerto Rico

OIL & GAS SECTOR

OIL & GAS INFRASTRUCTURE

PORTS

- The U.S. Coast Guard has set the following conditions for ports and waterways in the South Atlantic and Caribbean as a result of Hurricane Irma. Ports in five port sectors are either closed or open with restrictions.

Status of Caribbean and Florida Ports as of 02:00 PM EDT 09/06/2017			
Port	Transportation Fuel Imports (b/d)*	Status	Date Stamp
Sector San Juan			
All Puerto Rico Ports	139,000	Port Condition Zulu. Closed.	09/05/17
All U.S. Virgin Islands Ports	18,000	Port Condition Zulu. Closed.	09/05/17



Sector Jacksonville			
Port Canaveral	32,163	Port Condition Whiskey. Open with restrictions	09/06/17
Port of Fernandina	--	Open. COTP notes no "safe havens" exist within the port.	09/06/17
Port of Jacksonville	69,757	Open. COTP notes no "safe havens" exist within the port.	09/06/17
Sector Key West			
All Ports	--	Port Condition X-Ray set, effective 8pm on 9/6. Open with restrictions. Port Condition Whiskey in effect until then.	09/06/17
Sector Miami			
Fort Pierce	--	Port Condition Whiskey. Open with restrictions	09/05/17
Miami	1,500	Port Condition Whiskey. Open with restrictions	09/05/17
Port Everglades	236,053	Port Condition Whiskey. Open with restrictions. COTP issued notice that Port Everglades has gasoline reserves of at least one week stored on site.	09/06/17
Port of Palm Beach	501	Port Condition Whiskey. Open with restrictions	09/05/17
Sector Savannah			
Brunswick	--	Port Sector is monitoring storm closely. Issued warnings to mariners.	09/05/17
Savannah	12,630	Port Sector is monitoring storm closely. Issued warnings to mariners.	09/05/17
Sector St. Petersburg			
Port Manatee	724	Port Condition Whiskey. Open with restrictions.	09/06/17
Tampa	273,686	Port Condition Whiskey. Open with restrictions.	09/06/17

Source: Imports data from [U.S. EIA](#), USACE data (2013), EIA Company Level Imports

EMERGENCY DECLARATIONS & WAIVERS

- Ahead of Hurricane Irma, the State of Florida and Puerto Rico both declared a State of Emergency on September 4. President Trump issued emergency declarations on September 5 for Florida, Puerto Rico, and the U.S. Virgin Islands.
- The multi-state fuel waiver issued by U.S. EPA on August 31 covers Florida and other Southeast states threatened by Hurricane Irma. The waiver allows higher RVP "winter grade" gasoline to be sold and distributed, and allows the use of conventional gasoline in areas that require the use of reformulated gasoline.

Hurricane Harvey

ELECTRICITY SECTOR

ELECTRICITY OVERVIEW AND OUTAGE DATA

Flood waters in Southeast Texas continue to recede, allowing crews to assess damage and begin restoration. Before equipment in flooded areas can be reenergized, equipment at substations will need to dry out and be inspected for damage. There are no unmet needs reported to DOE by any electric utility at this time.

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 09/06/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Texas	53,311	<1%	63,933
Total	53,311	-	*

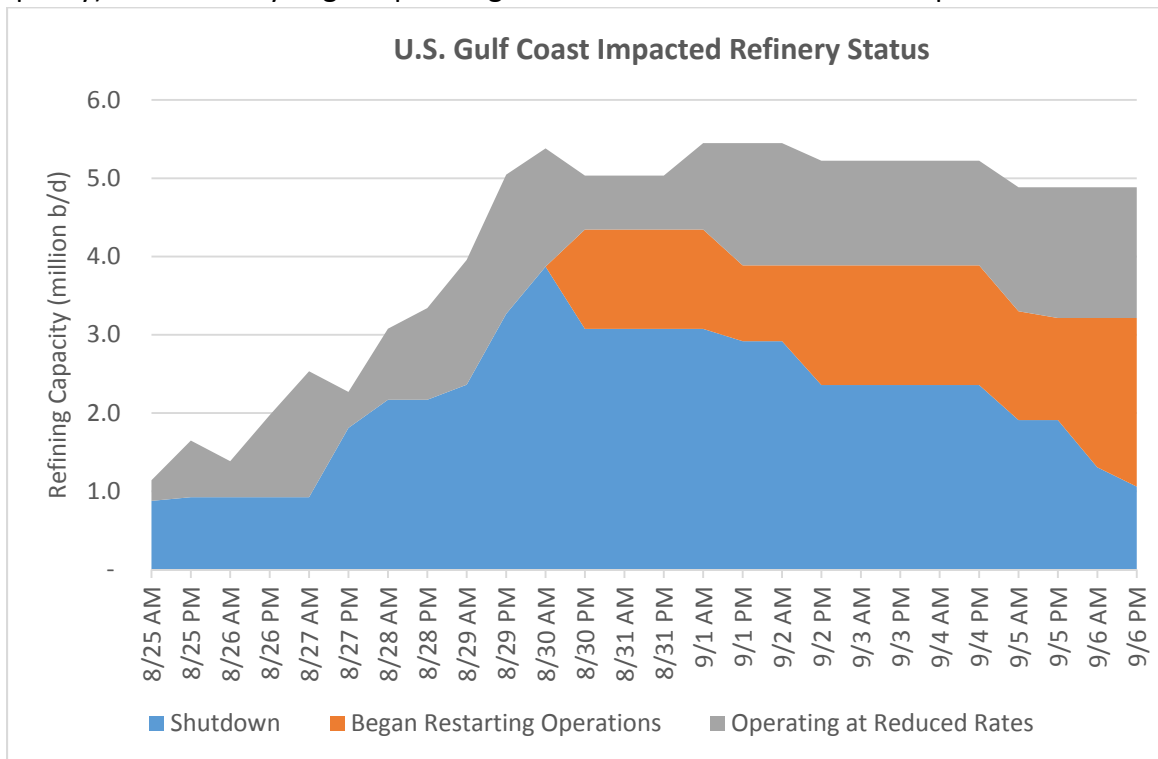
**There is no sum of the Peak Customer Outage column because peaks for individual utilities occur at different times; a total would not reflect peak outages.*

- Texas
 - As of 2:30 PM EDT, September 6, the State of Texas has 53,311 customer outages (<1% of total state customers). This is a 0.14% decrease from the last report.
 - AEP Texas has 30,869 customer outages.
 - Entergy Texas has 15,209 customer outages.
 - CenterPoint Energy has 4,877 customer outages.
 - The majority of AEP Texas restoration crews continue to work in the Aransas Pass, Rockport, Victoria, and Port Lavaca/Refugio areas. Most communities have Estimated Times of Restoration (ETRs) of 11 PM EDT Friday, September 8.
 - Power has been restored to all Entergy Texas customers in the Beaumont area impacted by Hurricane Harvey except for customers served by flood damaged equipment, areas that are still flooded, and areas impacted by the Amelia substation or Bevil substation outages.
 - CenterPoint Energy is reporting 3,408 of their customers are inaccessible due to high water.

OIL & GAS SECTOR

PETROLEUM REFINERIES

- As of 02:00 PM EDT, September 6, five refineries in the Gulf Coast region were shut down, according to public reports. One refinery began restarting operations since the last report. These refineries have a combined refining capacity of 1,060,000 b/d, equal to 10.9% of total Gulf Coast (PADD 3) refining capacity and 5.7% of total U.S. refining capacity.
- Six refineries are in the process of restarting after being shut down. This process may take several days or weeks to start producing product, depending whether any damage is found during restart. Production should be assumed to be minimal until restart is completed. These refineries have a combined capacity 2,154,199 b/d, equal to 22.2% of total Gulf Coast (PADD 3) refining capacity and 11.6% of total U.S. refining capacity. One refinery began restarting operations since the last report.
- At least seven refineries in the Gulf Coast region were operating at reduced rates, according to public reports. These refineries have a combined total capacity of 1,671,276 b/d, equal to 17.2% of total Gulf Coast (PADD 3) refining capacity and 9.0% of total U.S. refining capacity. (NOTE: Actual crude throughput (production) reductions are lower than the total combined capacity). One refinery began operating at reduced rates since the last report.



The above chart summarizes impacts to Gulf Coast refining capacity as a result of Hurricane Harvey over time, as reported in DOE’s Situation Reports. Impacted refining capacity is aggregated into three categories: 1) shutdown refineries (blue), 2) refineries that were shut down and have begun restarting (orange), and refineries that are operating at reduced rates (gray). Refinery statuses are updated based on various news outlets and company websites.

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. Eleven ports are closed or open with restrictions. Crude imports at these ports averaged 2,077,000 b/d from January through May 2017.

Status of Texas and Louisiana Gulf Coast Ports as of 02:00 PM EDT 09/06/2017			
Port	Crude Imports Jan-May 2017 (b/d)	Status	Date Stamp
Sector Corpus Christi			
Brownsville	--	Open.	08/31/17
Corpus Christi	245,000	Port Condition Recovery. Open with restrictions. Allowing vessels up to 43' draft to transit during daytime hours only. Foreign vessels > 100 gross tons, domestic tank vessels > 10,000 gross tons, and domestic non-tank vessels > 1,600 allowed one-way transit only, daylight hours only.	09/05/17
Sector Houston and Galveston			
Freeport	133,000	Open. 24/7. 38-foot max draft.	09/05/17
Galveston	114,000	Port Condition Recovery. Open with restrictions. Ship channel also open with restrictions. Galveston Bay Entrance Channel, Outer Bar Channel, Inner Bar Channel, Bolivar Roads Anchorages, Bolivar Roads Channel, and Galveston Harbor open, no restrictions. Other - 37' draft max, 24/7.	09/05/17
Houston	646,000	Port Condition Recovery. Open with restrictions. Houston Ship Channel open 24/7 below Sidney Sherman bridge with draft restrictions: <ul style="list-style-type: none"> Entrance Channel to Houston Cement West – 40-foot max draft. Houston Cement West to Sidney Sherman Bridge – 36-foot max draft. Intercoastal Waterway open 24/7	09/05/17
Texas City	134,000	Open. 24/7.	09/05/17
Sector Port Arthur and Lake Charles			
Beaumont	33,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/05/17
Lake Charles	218,000	Port Condition Recovery. Open with restrictions. 37 feet draft restrictions of the Calcasieu Ship Channel.	09/05/17
Nederland	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/05/17
Orange	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/05/17



Port Arthur	687,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only. 9/4 USCG allowed some barge traffic; Ships still not allowed to enter port via Neches River; Potential to allow ships on 9/5. West Port Arthur Bridge no restrictions.	09/05/17
Port Neches	--	Port Condition Recovery. Open with restrictions. <ul style="list-style-type: none"> Vessels > 500 gross tons limited to daylight hours above Texaco Island Intersection. Draft restriction of 34 feet in place for waters of Sabine-Neches Waterway below Neches River Intersection. 30-foot draft restriction for waters of Neches River. 	09/05/17
Sabine Pass	--	Port Condition Recovery. Open with restrictions.	09/05/17

Source: U.S. Coast Guard

WAIVERS

- The table below lists fuel-related waivers issued by the U.S. Environmental Protection Agency (U.S. EPA) and State agencies.
- 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 02:00 PM EDT 09/06/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	<p>RVP 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 states located in PADD 1, PADD 2, and PADD 3. The waiver supersedes and expands the areas covered by the August 30 waiver.</p> <p>RFG standard is also waived in the designated regions. 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>RFG 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	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. Waiver expanded to 98 counties required to use low-RVP fuel 8/26. Allows sale of gasoline up to 9.0 psi RVP.	U.S. EPA	08/25/17	09/15/17	Active
LA	RVP requirements of 7.8 psi and 9.0 psi waived in applicable areas. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Louisiana	08/29/17 Expanded: 08/30/17	09/15/17	Active
MI	RVP regulations waived. Permits the transportation and sale of motor fuels 9.0 psi RVP in Wayne, Oakland, Macomb, St. Clair, Livingston, Washtenaw, Monroe, and Lenawee counties, and up to 11.5 psi RVP elsewhere in Michigan.	State of Michigan	08/31/17	09/15/17	Active
MS	RVP standards of 9.0 psi waived. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Mississippi	08/30/17	09/15/17	Active
VA	Waived the RVP limit for gasoline ethanol blends prescribed by regulations.	State of Virginia	09/01/17	09/15/17	Active

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

- Nine states have declared state emergencies due to Harvey. Note that Kansas has not declared a State of Emergency, however is using its resources to assist other states. 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 Texas or Louisiana.
- 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. On August 31, the FMCSA expanded the Regional Emergency Declaration to additional states and Washington, DC.



- The table below summarizes emergency declarations and HOS waivers issued by states in response to the impacts of Hurricane Harvey.

State Emergency Declarations and HOS Waivers as of 02:00 PM EDT 09/06/2017				
State	Details	Effective Dates		Status
		Start	End	
Regional (Multi-State)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA. Applies to Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, South Carolina, Virginia, Washington, D.C. and West Virginia	08/25/17 Expanded 08/31/17	10/26/17	Active
Texas	State of Disaster declared for 61 counties in Texas.	08/23/17 Expanded: 08/30/17 09/01/17	TBD	Active
Louisiana	State of Emergency.	08/23/17	TBD	Active
Kentucky	State of Emergency/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 supplies, goods, and services in the State.	08/30/17	09/29/17	Active
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
North Carolina	State of Emergency/HOS waiver issued for petroleum products, and emergency relief supplies and services through the state.	08/31/17	09/30/17	Active



State Emergency Declarations and HOS Waivers <i>as of 02:00 PM EDT 09/06/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
South Carolina	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/30/17	Active
Michigan	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/15/17	Active
Virginia	State of Emergency/HOS waiver issued for petroleum products through the state.	09/01/17	09/15/17	Active

- On September 1, PHMSA issued an Emergency Stay of Enforcements for operators affected by Hurricane Harvey. The declaration states that PHMSA does not intend to take any enforcement action relating to their noncompliance with certain operator qualification requirements, or pre-employment and random drug testing requirements, arising from the use of personnel for pipeline activities related to response and recovery.
- On September 5, the Federal Energy Regulatory Commission (FERC) approved an emergency waiver tariff, effective immediately, allowing the pipeline system to accept 11.5 RVP gasoline (A3) to fill nominations for 7.8 RVP gasoline (A1) and 9.0 RVP gasoline (A2); and to ship conventional gasoline in lieu of reformulated gasoline. Colonial’s tariffs and tariff practices would not normally permit it to accept product that does not conform to the specifications of the product that was nominated.