

Control Number: 47552



Item Number: 38

Addendum StartPage: 0

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Executive Director



Greg Abbott
Governor

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PUBLIC UTILITY COMMISSION

Public Utility Commission of Texas

TO: Central Records

FROM: Stephen Journeay
Director, Commission Advising & Docket Management

RE: Project 47552, *Issues Related to the Disaster Resulting from Hurricane Harvey*, Governor's Disaster Proclamation.

DATE: October 11, 2017

Attached are copies of the handouts provided to the Commissioners at the September 28, 2017 Open Meeting.

- Entergy Texas – Response to Hurricane Harvey
- AEP Texas – Hurricane Harvey Update
- Texas-New Mexico Power Company – Hurricane Harvey Update

Q:\CADM\Memos\Central Records\47552 memo to file.docx



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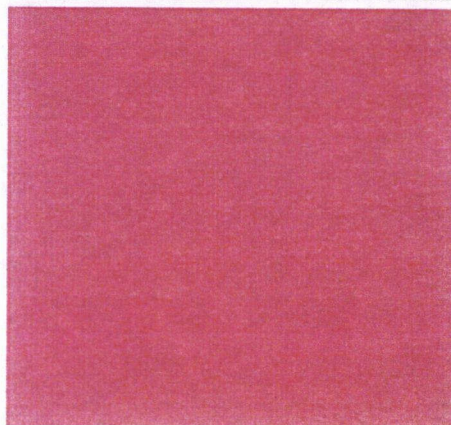
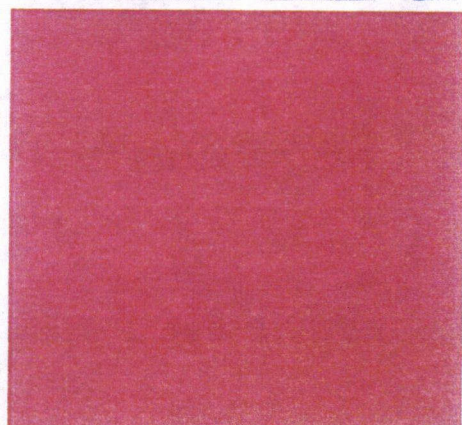
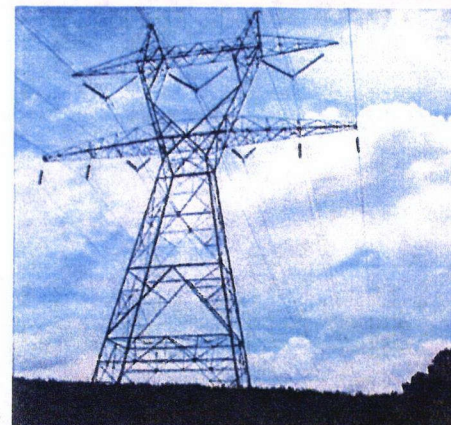
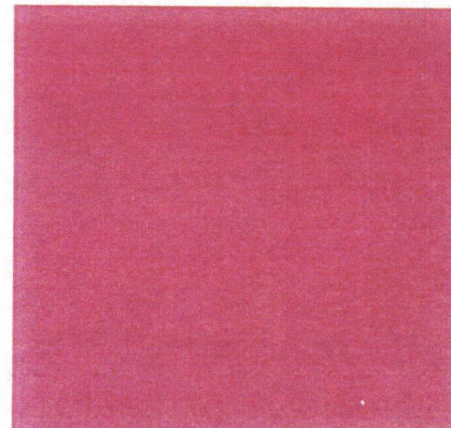
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Response to Hurricane Harvey

September 28, 2017



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Storm Impact August 25 – September 8

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Long-lasting Storm

- 15 days before the storm finally left ETI's footprint
- Significant wind and rain event created challenges across the region.

Record-breaking Rainfall

- 49.31 inches near Dayton
- Neches River in Beaumont crested at the saltwater barrier on Sept. 1, at 9.7 feet higher than the previous record

Logistics Challenges

- Flooding made moving crews and materials difficult across the region
- 237 roads were closed across ETI's service area
- Beaumont lost its water supply requiring Entergy Texas to move its storm command center from Beaumont to Conroe and the Distribution Operations Center from Beaumont to Baton Rouge



Customer Impact

- ~ 186,000 customers experienced a sustained interruption out of the ~450,000 (41%) total customers.
- The total number of outage cases closed during this time was 4,262 – all customers that can take power have been restored.

Restoration Response

- Equipment installed: 218 poles, 489 transformers, 452,500 feet of wire/cable, 1,926 cross arms, 54 reclosers, 46 regulators, 4,563 meters.
- Approximately 2,045 employees, contractors and mutual assistance partners participated in the Entergy Texas restoration efforts.
- Utilized 16 airboats, seven high-water vehicles, eight helicopters, 16 tankers for fuel transport.



Flooding significantly damaged substation infrastructure

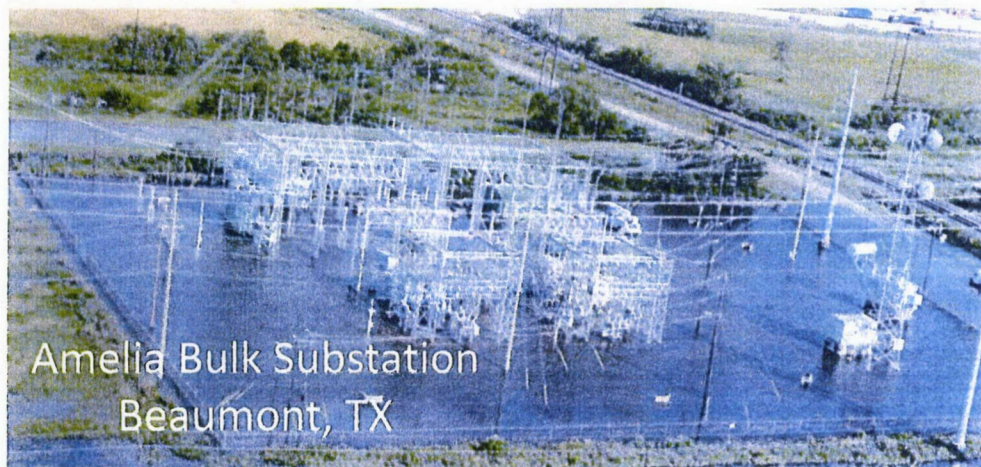
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Flooding significantly damaged substation infrastructure

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Damage Report: *Transmission & Substation*

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- 111 transmission line segments impacted, including trip & reclose events
- 151 substation events where the station was out for 30 seconds or greater
- 17 substations are considered to have taken flood waters, most with minor repairs
- 6 Substations completely flooded

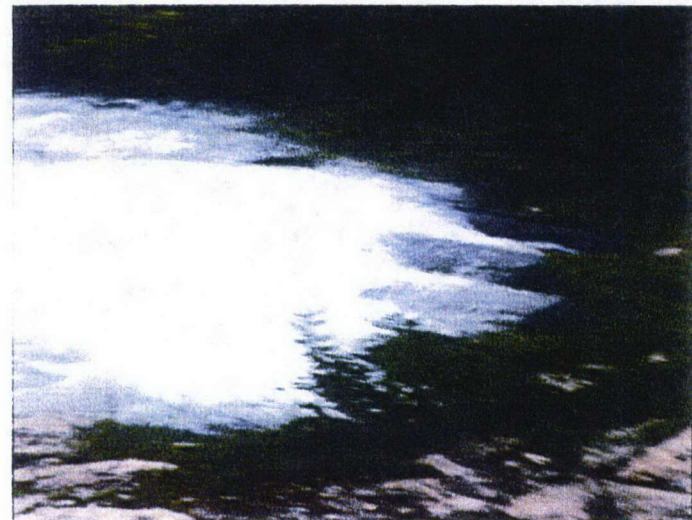


| Substation | Location | Return to Service | Work Around | Who loaned the Mobile Sub |
|--------------|-----------|-------------------|----------------------|-----------------------------|
| Amelia Bulk | Beaumont | Nov 17 2017 | Mobile Sub Installed | Entergy Mississippi |
| McDonald | Silsbee | Sept 28 2017 | Mobile Sub Installed | ONCOR |
| Bevil | Beaumont | Oct 11 2017 | Mobile Sub Installed | CLECO |
| Kountze Bulk | Silsbee | Oct 4 2017 | Switched in Field | |
| Vidor | Vidor | Oct 6 2017 | Mobile Sub Installed | Washington St Tammany Co-Op |
| Viway | Rose City | Oct 2 2017 | Switched in Field | |

Harvey Effects: *ETI* Generation (Lewis Creek)

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- Lewis Creek was available and online for MISO dispatch throughout the storm event.
- The dam improvement project team completed the soil stabilization portion of the project prior to the event. The dam performed extremely well throughout the event (no slides or other issues).
- The plant received approximately 22 inches of rain and extensive runoff from the surrounding areas into the reservoir
- Five siphon tubs operated 24x7 to manage the reservoir level. The five siphon tubs are able to move ~134,000 gals per second.



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Harvey Effects: *ETI Generation (Sabine)*

- A core team of 30 employees were stationed at the plant during the storm to protect and operate the units. Access to the plant was limited due to street flooding
- Sabine Unit 3 was online throughout and the remaining units were proactively taken offline.
- Unit 4 safely return to service on 9/5 to help the restoration effort
- The plant received approximately 28 inches of rain in 36 hours. The bottom floor of the administration building flooded
- When Neches River crested, Sabine had approximately 18 inches left of freeboard before the water would impact critical equipment.



Getting the Message Out: *Customer Communications*

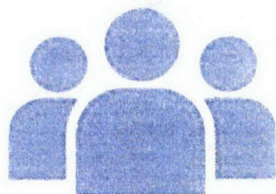
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Customers

Provided updates to customers on restoration times via calls, texts, web updates. Used communications to set customer expectations regarding restoration.

- 80 Storm Center updates received 70,000 visits
- 43,000 visits to ETI news room
- 316,411 proactive calls and 349,107 proactive texts to customers
- 24-hour phone center access



Communities

Ensured close communication and coordination with all key stakeholders to keep officials apprised of restoration efforts. Close collaboration with federal, state and local officials played a key role in quick restoration.



Media


Utilized social and traditional media to keep customers updated with restoration information. Social media also played a major role in responding to customer inquiries regarding outage information.


- Media Outreach
 - 14 Press releases
 - Interviews, press conferences & conference calls
- Social media activities
 - 500 proactive messages
 - 1,200 inquiries responded to
 - 20 videos published with 74,000 views


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Direct from Customers: Social Media Response


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 **Tiffany Harwell** Hopefully people will understand the dangers of your job. Please be safe and we're patiently waiting.
Like Reply

 **Patti Hebert Ross** God bless you for your dedication and hard work to take care of us.
Like Reply

 **Lauren Caywood Rothe** Thank you, Entergy and the linemen that leave their families behind and put their life on the line.
Like Reply


 **Kathy Court Thomas** Thanks you. Be safe out there.
Like Reply


 **Heather Hall Slagle** Thank y'all for your quick response! May God bless y'all and keep y'all safe.
Like Reply

 **Dena Caldwell** Thank you for all of your hard work. Stay safe.
Like Reply

 **Cathy Howes Scarborough** LOVE our linemen. Be safe out there! God bless each and every one of you.
Like Reply


 **Tracy Mercer Springfield** Prayers for the linemen..
Like Reply


 **Lavelle Jones Perin** Thank you so much to the Entergy line crews for all their hard work under very bad conditions.
Like Reply


 **Christie Batey** I know for a fact the men are working very hard, someone I love dearly included. Definitely safety first, we want them to come to their families.
Like Reply


 **Barbara Irvine** Thank you Entergy!
Like Reply


 **Faye Gillespie** Thank y'all Entergy.
Like Reply


 **Lynae Dobson Langford** Thank you for working so hard. God bless all of you. Stay safe.
Like Reply

 **Hedy Kirby** Thank you for all you do under dangerous conditions.
Like Reply

 **Pam Cunningham** Good job guys, remember work safe... Live Safe!!!
Like Reply


 **Laura Riordan Socha** Thank you for your hard work! Please be safe!
Like Reply


 **Doreen Saeger Coffey** Thank you, linemen and all workers pulling double duty with Entergy! You guys are awesome!
Like Reply

 **Amber Denea Lacouture** Thank you to all that are out working in every capacity! Stay safe.
Like Reply

 **Dawn O'Leary** Thank you !!!Mississippi line workers for giving us back our electricity in Cleveland Tx off 1010.
Like Reply

 **James Murphy** Thank you for the help.
Like Reply

 **Laura Elaine Wasson Reed** Great job Entergy!!! Thank you to each and every member of the response teams!
Like Reply

 **Maureen McGuire Perry** Thank you so much for all of the work that you do! We just got power on in Bridge City!! God Bless you and God Bless Texas.
Like Reply

 **Nelda Hinojosa** Thank you so much!!!
Like Reply

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Going Home: *Post Recovery*

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Customers

- Entergy performed a walk down of neighborhoods that were flooded to inspect the effects on the meter and determine if customers could take service without any safety hazards to the meter.
- As of today, Entergy is still inspecting and repairing damaged distribution, transmission and substation equipment as well as performing storm-related vegetation work.
- Entergy has relaxed some of its fees and credit policies.

Employees

- Over 250 employees' homes were damaged and 26 were uninhabitable – most of these employees continued restoration work.

Relief Efforts

- Entergy will be coordinating with FEMA and other agencies to assist flood victims.
- Entergy Corporation committed \$400,000 in charitable contributions to provide aid to individuals and families who have been impacted.



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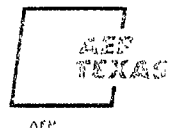
Hurricane Harvey Update

9-28-2017



Hurricane Harvey

- Category 4 hurricane made landfall in the Coastal Bend area of the AEP Texas service territory on August 25th
- At peak, 220,000 outages
 - Restored power to 96% by day 14
- Tremendous support from community leaders and the public in the impacted areas
- Collaborative efforts with other Texas utilities, ERCOT and Regional Mutual Assistance Groups



HURRICANE HARVEY RECAP:

September 2017

549



downed or
damaged
transmission
structures



Restored power to

219,000

customers

5,500



distribution
poles repaired
or replaced

3 million

Total feet of transmission and distribution
conductor replaced approximately 712 miles

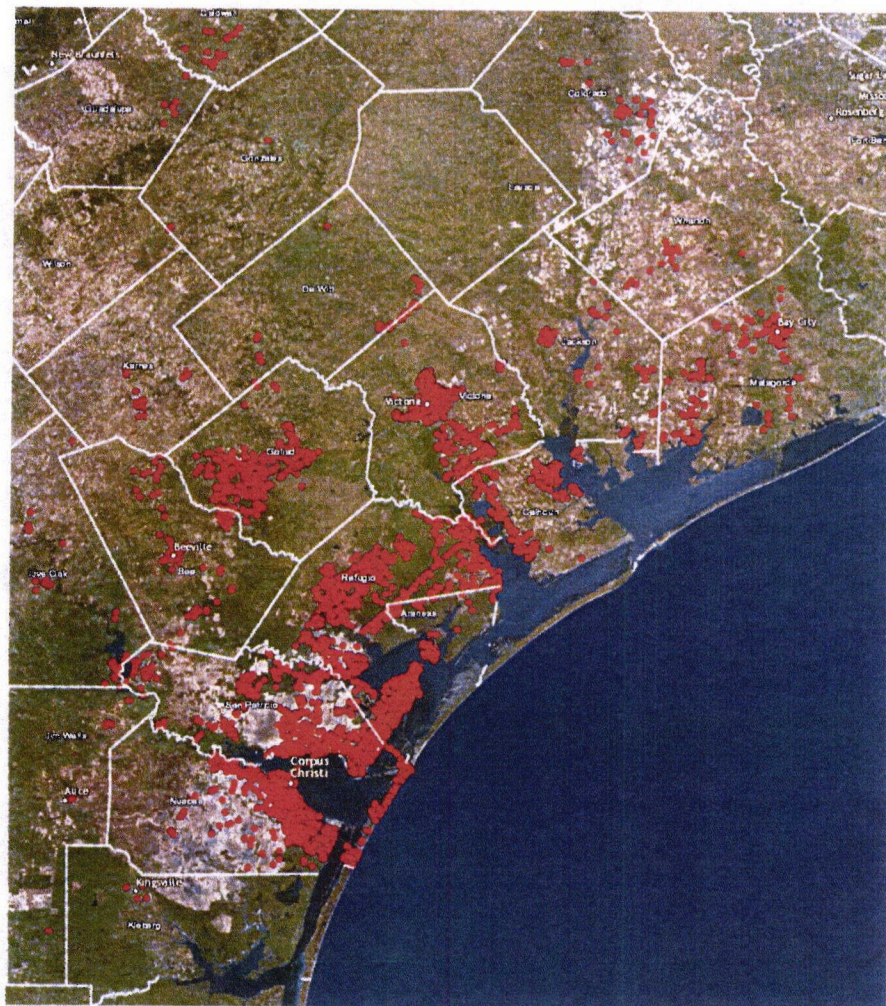


5,600

Total number of workers
participating at the peak
of the restoration effort

Communication Efforts

- State and Local Emergency Management coordinators and contact with key stakeholders
- Central FEMA Coordinator
- Participation in town hall and customer meetings
- Restoration updates, news releases and media interviews
- Social media – Facebook, Twitter
- AEP Texas website and outage map

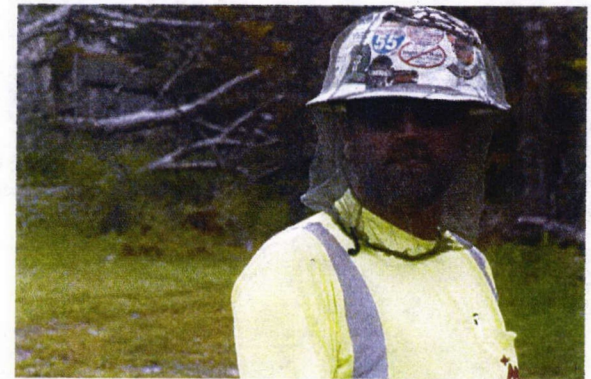


Non-ping meters

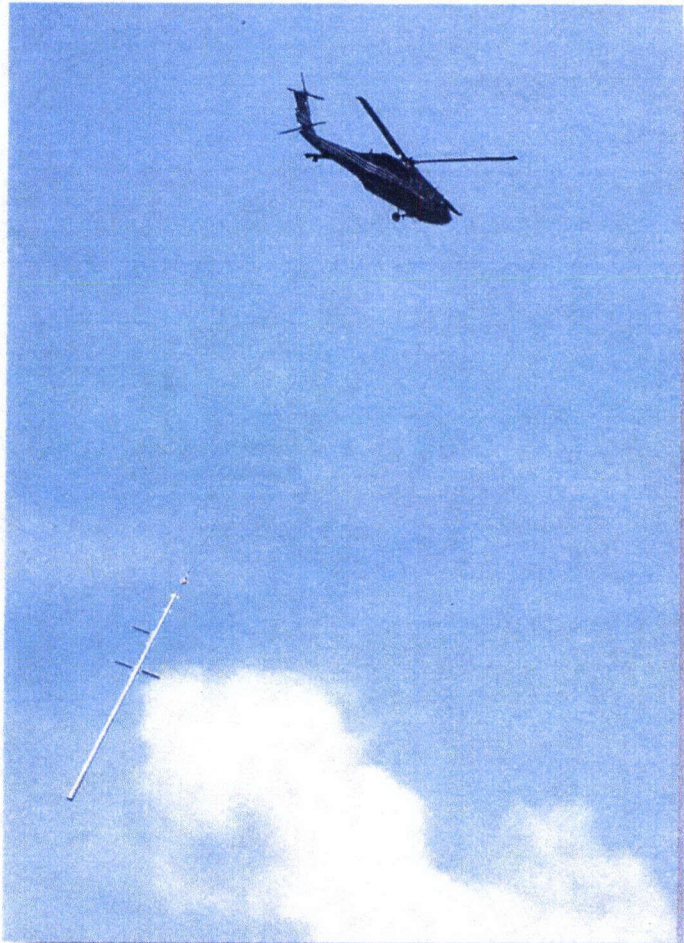


Pole damage

Major areas impacted by Hurricane Harvey included: Corpus Christi, Port Aransas, Aransas Pass, Rockport, Fulton, Refugio, Port Lavaca, Bay City and Victoria.



Flooding, mosquitos, as well as windy and muddy conditions created special challenges for work crews.

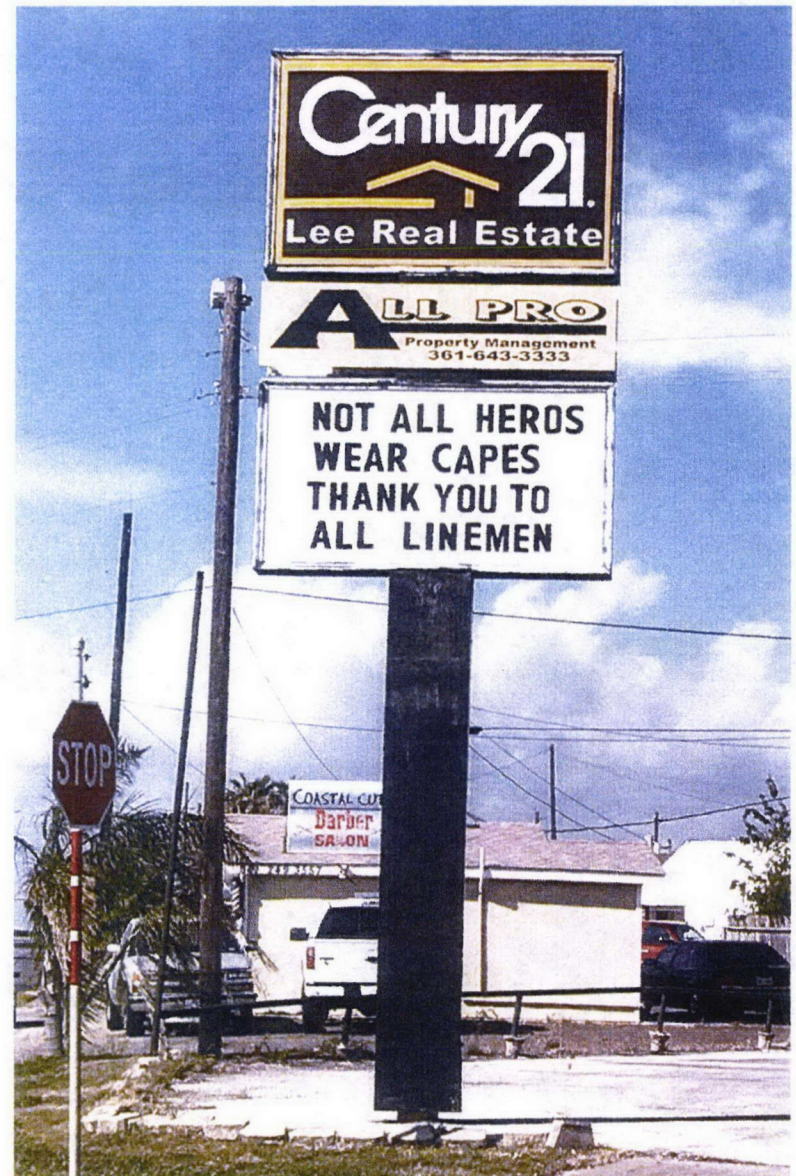


To address these challenges, specialized equipment and technology, such as drones, ATVs, pictometry and helicopters were utilized during the assessment and restoration efforts.

Special Thanks:

Many thanks to state and local leadership, as well as the PUCT staff for all of their help.

A special “Thanks” to the communities we serve and to the 5,600 workers who were able to restore service to 96 percent of those impacted within a two-week period of time.



Appendix



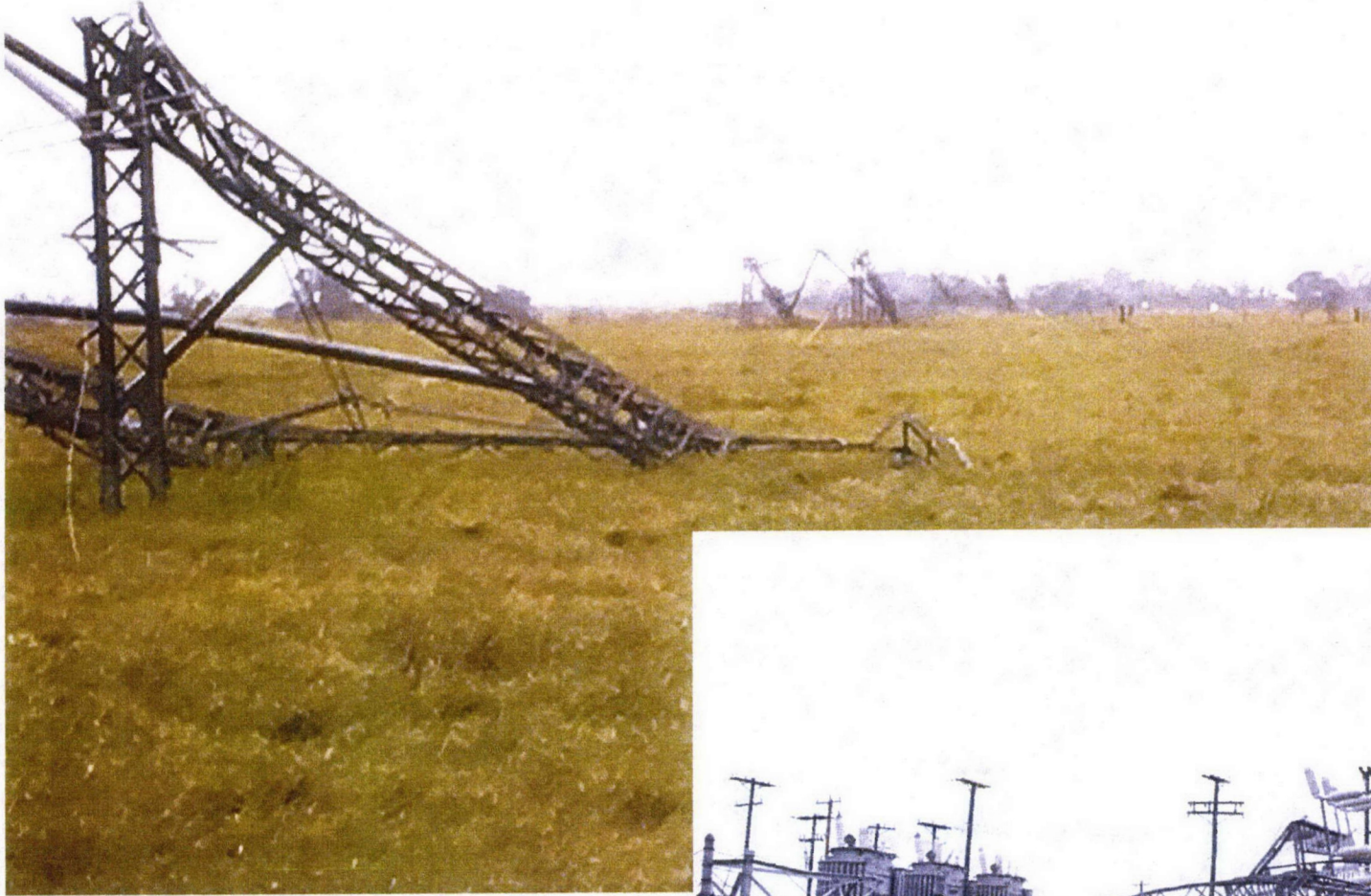
Damage Summary

TRANSMISSION:

| | |
|--|----------------------------------|
| Substations impacted/restored | 68 |
| Transmission lines locked out during storm | 61 |
| Transmission line structures downed | 549 |
| Estimated conductor replaced (miles/feet) | 333 miles or 1.8 million feet |

DISTRIBUTION:

| | |
|---|--------------------------------|
| Distribution poles damaged or replaced | 5,726 |
| Transformers damaged or replaced | 1,413 |
| Breakers that locked open | 270 |
| Estimated conductor replaced (miles/feet) | 379 miles or 2 million feet |



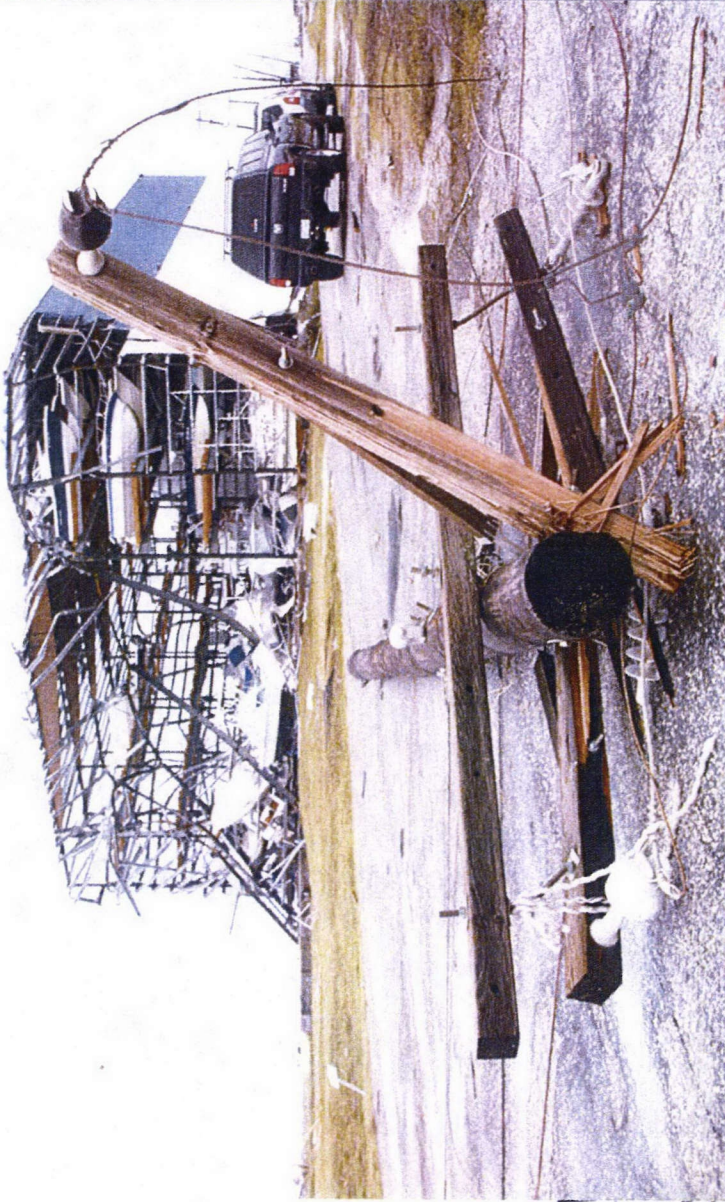
STP-to-Whitepoint 345-kV transmission structures

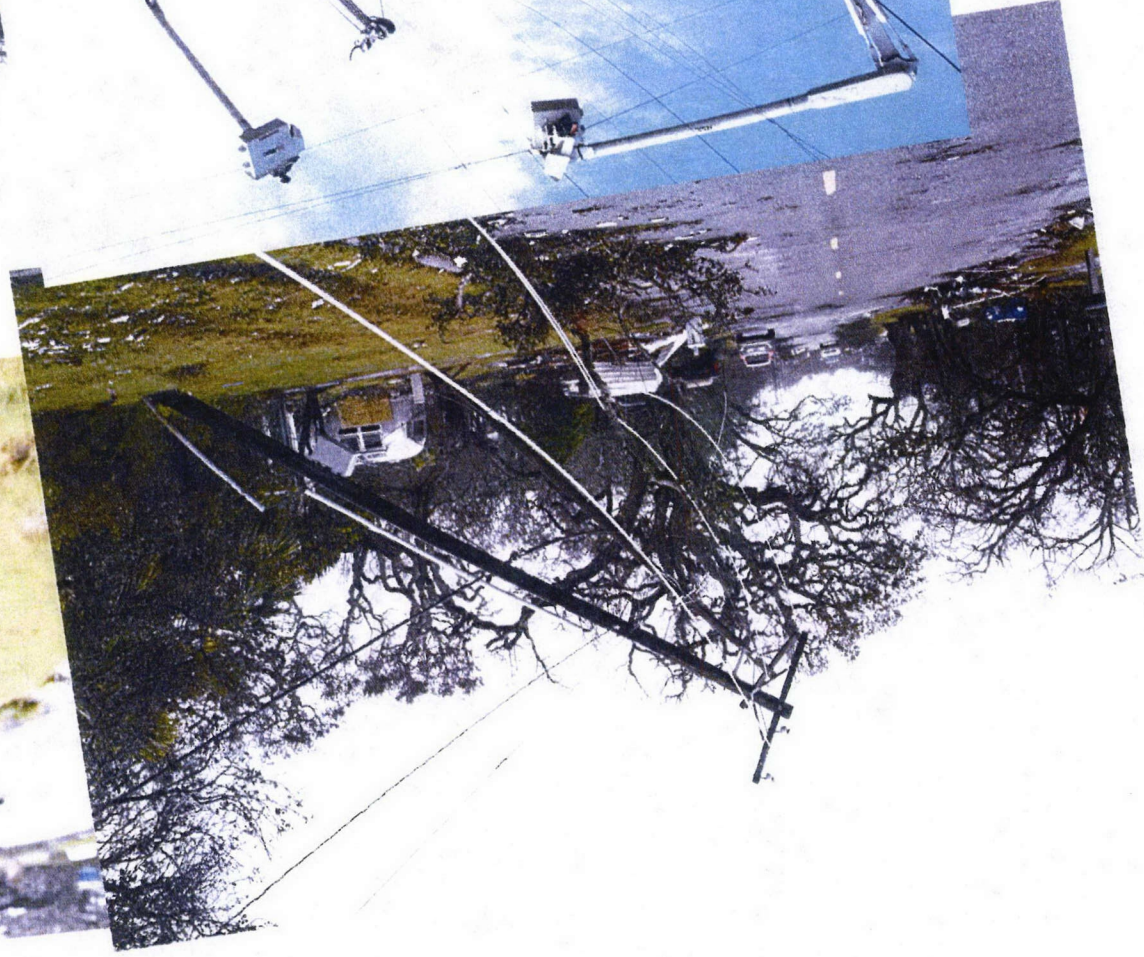
Transmission Damage



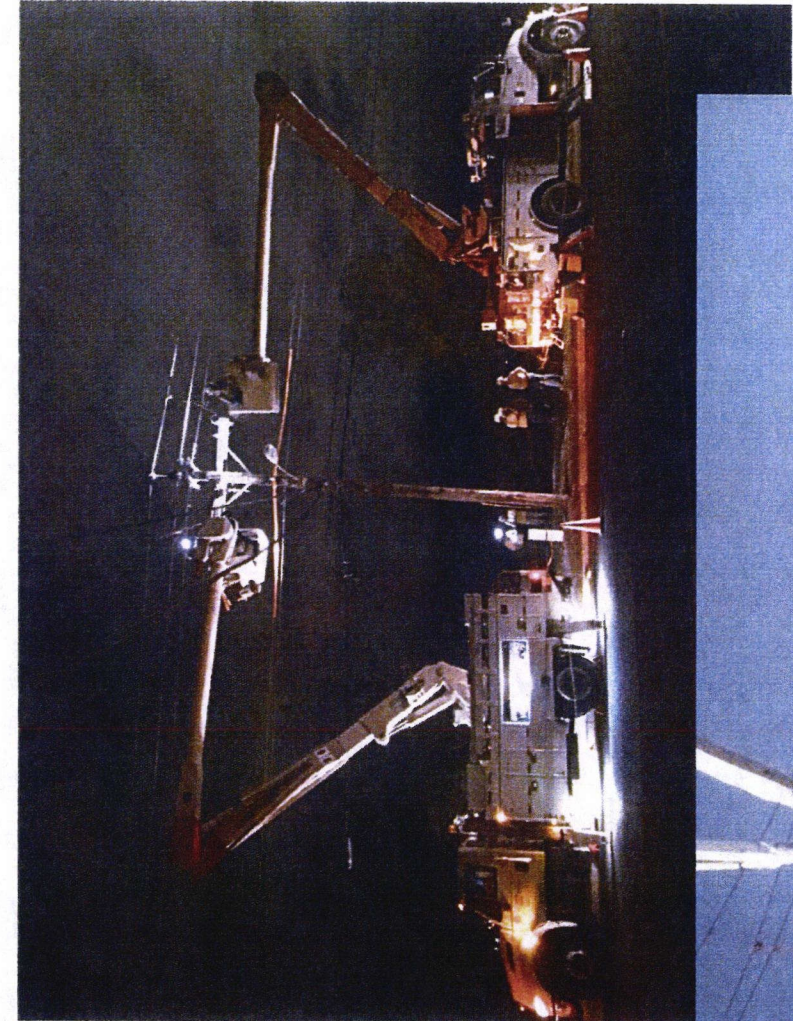
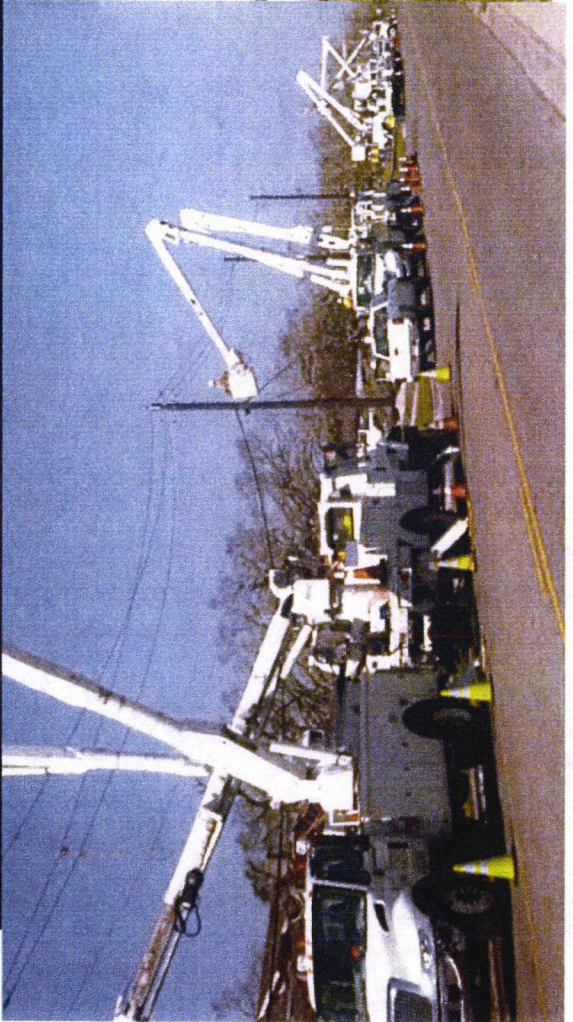
Tatton Substation

Distribution Damage





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When I think of the challenge that presented itself to you right after Harvey's landfall, the only adjective that comes close is herculean. The task was unimaginable, and you worked with a rapidity that was nearly miraculous. Thank you. Thanks also for providing such constant communications. You set a few standards here, and I wanted to take a moment to express my gratitude.

Facebook posting examples

Other Participants in the Restoration Effort

| | | |
|---|--|------------------------------------|
| AEP Ohio | Disaster Resource Group | Pike Electric |
| AEP Appalachian Power | Empire District | Plaska |
| AEP Indiana Michigan Power | Evers Electric | Powerline Services |
| AEP Kentucky Power | Excel Energy | Power Secure |
| AEP Public Service Company of Oklahoma | Great Southwestern | ProForce |
| AEP Southwestern Electric Power Company | Hargrave Power Inc. | QUALITY POWER LINE |
| 5 Star | Higher Power | Quanta Utility Services |
| Ameren Illinois | Hugo Garcia Electric | Quantum Hargrove |
| Ameren Missouri | INTREN Inc. | R&J Environmental |
| Asplundh | Irby Construction | RS Electric Utility Services |
| Associated Diversified Services | J F Electric Inc. | Safety Management Group (SMG) |
| Austin Energy | James Power Line | SAM Flight Operations |
| B&B Utility Contractors | Kansas City Power & Light | Service Electric Company |
| BBC Electric | Lewis Tree Service | SEC - Southern Electric Corp. |
| BHI Energy | LineTec | Storm Services |
| Base Logistics | Louisville Gas & Electric - Kentucky Utilities | Sumter Utilities |
| Bird Electric | LPE, Inc. | Sun Coast Resources |
| Bison Electric | Mammoth | SUN TECH ELECTRICAL |
| CANFER | MasTec | T&D Solutions LLC |
| Centerpoint | Mesa Line Services | Tech Serv Consulting |
| Chain Electric Company | MYR Group | Texas New Mexico Power |
| City Public Service | OG&E Electric Services | UC Synergetic |
| CT Drilling & Construction | Oncor Electric Delivery | Westar |
| Davey Resource Group | One Source Restoration | Willbros T&D Services |
| Davey Tree Company | One Source T&D | William E Groves Construction Inc. |
| David H. Elliot Company | Par Electrical Contractors | Wright Tree Services |

Also, many thanks to Midwest Mutual assistance Group, Texas Mutual Assistance Group and Southeastern Electric Exchange

Texas-New Mexico Power Company Hurricane Harvey Update

September 28, 2017



Prepared for:
Public Utility Commission of Texas

Prepared by:
Neal Walker,
President of TNMP

TNMP Affected Service Areas

TNMP Affected Areas:

► Bay Area

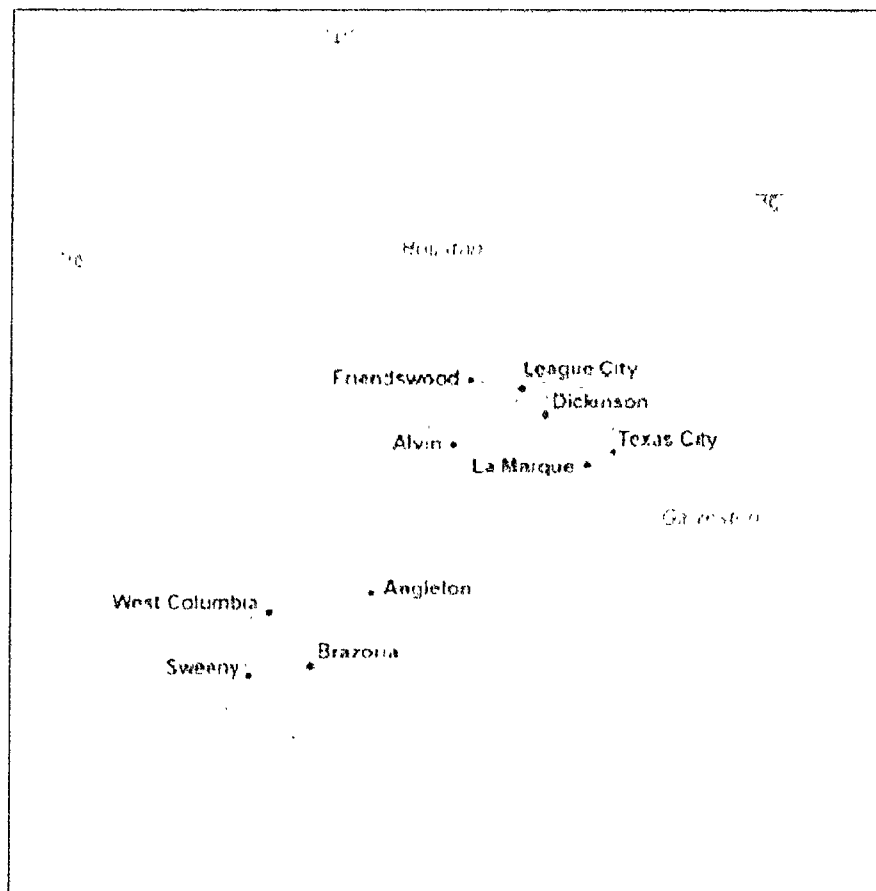
- Alvin
- Friendswood
- League City

► Brazos Area

- Angleton
- Brazoria
- Sweeney
- West Columbia

➤ Mainland

- Dickinson
- La Marque
- Texas City



Restoration Summary

- **Transmission and Industrial Summary**
 - No transmission outages
 - No loss of service to industrial customers
- **Distribution Summary**
 - Distribution outages only
 - Less than 20,000 at peak
 - 1,720 Outages worked
 - 77,968 customers restored
- **Equipment Damaged/Replaced**
 - Distribution Poles - 50
 - Pad-mount Transformers - 84
 - Overhead Transformers - 86
 - Meters – Approximately 700
- **Restoration Support Effort**
 - TNMP Field and Craft Employees – 171
 - TNMP Support Employees – 10
 - Contractors/ Foresters – 288
 - Additional support on standby – 61

TNMP Texas City Office



Sweeney



Brazoria



Sweeney

