

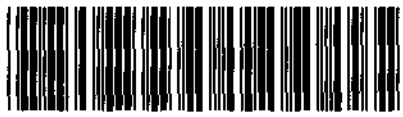


## **Filing Receipt**

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**Item Number - 18**



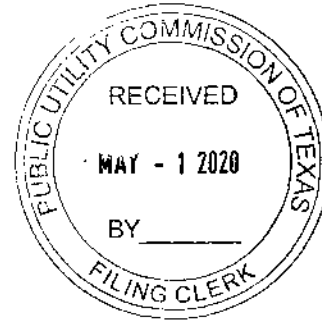
Control Number: 39339



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Project No. 39339  
In Accordance With 16 Tex. Admin Code §25.95

Entergy Texas, Inc.  
Storm Hardening Plan Summary  
Calendar Years 2016-2020

May 1, 2020

Contact Information

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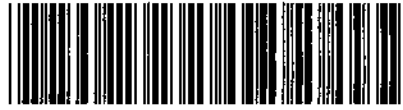
In compliance with 16 Tex. Admin Code (“TAC”) §25.95, Entergy Texas, Inc. (“ETI”) files its material revisions to its 2016 – 2020 Storm Hardening Plan (noted as a) throughout the document) and a summary of its progress implementing the Plan (noted as b) throughout the document).

ETI’s storm hardening strategies are based on the Entergy Hurricane Hardening Study completed in 2007 on behalf of ETI and the other Entergy operating companies, which was filed at the Public Utility Commission of Texas under Project No. 32182 on December 18, 2007. This summary includes ETI’s 2016 - 2020 storm hardening plans and strategies and follows the outline of the rule.

- I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities;
  - a. No material revisions to the Transmission plan since ETI’s May 2019 report. Beginning in October 2018, Distribution Standards were revised to install minimum class 1 or larger poles for backbone feeders south of IH-10.
  - b. No implementation required
  
- II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management;
  - a. ETI’s compliance with 16 TAC §25.96 (filed in Project No. 41381) fully satisfies the vegetation management planning and reporting requirements of 16 TAC §25.95(e)(2).
  
- III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing;
  - a. No material revisions to plan since ETI’s May 2019 report.
  - b. ETI and other Entergy operating companies continued installing the communications network infrastructure to support AMI and Distribution Automation / Smart Grid in 2019. ETI installed 185,963 smart meters in 2019. In 2019, 42 new reclosers were installed on various distribution feeders in Texas.
  
- IV. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees;
  - a. ETI has adopted EpochField as its data collection tool to be implemented in 2020 for damage assessments during routine storms. An upgrade to the software is expected in November 2021, at which time it will be used for major storms as well. This tool utilizes Wi-Fi for real-time updates as assessments are being made for faster analysis and reporting.

- b. Implementation as discussed above.
- V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule;
- a. No material revisions to the Transmission plan since ETI's May 2019 report. Beginning in October 2018, Distribution Standards were revised to install minimum class 1 or larger poles for backbone feeders south of IH-10.
  - b. For distribution pole inspections completed in 2019, see ETI's Infrastructure Improvement and Maintenance 2019 Calendar Year Report filing in Project No. 38068 in accordance with 16 TAC §25.94
- VI. Distribution feeder inspection schedule;
- a. No material revisions to plan since ETI's May 2019 report.
  - b. For distribution pole inspections completed in 2019, see ETI's Infrastructure Improvement and Maintenance 2019 Calendar Year Report filing in Project No. 38068 in accordance with 16 TAC §25.94.
- VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation;
- a. No material revisions to the Transmission plan since ETI's May 2019 report. For Distribution response, see Section III above.
  - b. In 2019, Transmission added seven Distance to Fault links to SCADA on transmission lines. Implementation of sixteen transmission line auto-sectionalizing projects are underway for completion in 2020. Additional analysis is underway to determine 2021-2023 plans. For Distribution response, see section III above.
- VIII. Plans and procedures to comply with the most recent National Electric Safety Code ("NESC") wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system
- a. No material revisions to plan since ETI's May 2019 report.
- IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards;
- a. No material revisions to plan since ETI's May 2019 report.
  - b. Implementation ongoing.
- X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system;
- a. No material revisions to plan since ETI's May 2019 report.
  - b. Implementation complete with annual evaluation and enhancements as appropriate.

- XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities;
  - a. No additional material revisions to plan since ETI's May 2019 report.
  - b. Implementation completed in 2011.
  
- XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.
  - a. No material revisions to the plan since ETI's May 2019 report. ETI has identified its priority loads and maintains such designation of these customers in its database systems such that their specific feeder location is identifiable. These priority loads are included in ETI's storm restoration plans and are taken into consideration during restoration of service after an event. These priority loads are served by approximately 86% of ETI's distribution substations and approximately 62% of ETI's distribution feeders. Given this widespread dispersion of these priority loads, targeted hardening is not a viable option. In other words, a significant rebuild of ETI's facilities would be required. Instead, ETI's storm hardening strategies discussed in Section I will continue to be pursued.
  - b. Annually review the percentage of distribution substations and feeders that serve the priority loads.



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Project No. 39339  
In Accordance With 16 TAC § 25.95

Entergy Texas, Inc.  
Storm Hardening Plan Summary  
Calendar Years 2021 - 2025

April 28, 2021

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In compliance with 16 Texas Admin. Code (“TAC”) § 25.95, Entergy Texas, Inc. (“ETI”) files its Storm Hardening Plan Summary. ETI’s storm hardening strategies are based on the Entergy Hurricane Hardening Study completed in 2007 on behalf of ETI and other Entergy operating companies, which was filed at the Commission under project 32182 on December 18, 2007. ETI has continued to enhance its knowledge and capabilities related to storm hardening. This summary includes ETI’s 2021 - 2025 storm hardening plans and strategies and follows the outline of the rule:

- I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities;
- II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management;
- III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing;
- IV. Plans and procedures to enhance post-storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees;
- V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule;
- VI. Distribution feeder inspection schedule;
- VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation;
- VIII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system;
- IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards;
- X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system;
- XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities;
- XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.

**I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities**

The construction standards, policies, procedures, and practices employed to enhance the reliability of ETI's transmission and distribution facilities, including overhead and underground facilities, is governed by Entergy's design specifications and construction standards. The use of Entergy specifications ensures that ETI's facilities are designed and constructed in accordance with all applicable codes, ordinances, and standard industry practices. Such designs meet or exceed the requirements in the latest revision of the Entergy and NESC (IEEE) specifications pertaining to the design and construction of electrical substations, transmission facilities and distribution facilities. The use of these Entergy standards and specifications for design, material purchase and fabrication, and construction ensures that the quality of the workmanship is consistent with industry practices, thereby maintaining the reliability of the utility system facilities.

The transmission and distribution hardening strategies include:

- A. For Entergy's transmission system, the following strategies will be employed:
- Use steel or concrete poles for construction of new facilities.
  - When necessary to replace existing wood poles, replacement shall be with concrete or steel poles, if material is readily available.
  - Utilize the extreme winds defined in the latest edition of the NESC for new construction and complete line rebuilds.
  - Convert interstate crossings from wood construction to concrete or steel.
- B. For Entergy's distribution system, the following strategies will be employed:
- Install at minimum Class 1 poles on trunk feeders for new construction and replacement in areas south of Interstate 10, and at minimum Class 3 poles on trunk feeders for new construction and replacement in other areas.
  - Install composite poles for use as engineered solutions in hard to access areas, self-supporting poles, and other opportunities as identified by engineering.
  - Expand installation of storm guys.
  - Install steel, ductile iron, composite poles or place facilities underground for new construction and replacement involving interstate crossings.

**II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management**

ETI's compliance with 16 TAC § 25.96 (filed in Project No. 41381) fully satisfies the vegetation management planning and reporting requirements of 16 TAC § 25.95(e)(2).

**III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing**

Entergy's Grid Modernization team is charged with studying and implementing emerging technologies that can provide a positive value to ETI's customers. The team is currently studying customer value associated with grid modernization and new software systems, all designed to optimize power quality, outage resiliency, reduce outage times, promote self-healing (including Automated Load Transfer Systems), and provide ETI's customers with an overall improved experience.

ETI will be installing new reclosers for sectionalization and self-healing capabilities for reliability improvements. These devices will be connected into the Advanced Metering Infrastructure/Distribution Automation (AMI/DA) Communication Network and System Control and Data Acquisition (SCADA). In addition to new reclosers, ETI will also be upgrading existing capable reclosers to connect to the AMI/DA Communication Network and SCADA. In the future the devices will be leveraged into the SCADA and DMS systems for advanced fault locating and centralized FLISR (Fault Location Identification, and Service Restoration). These devices will also be monitored remotely for more proactive maintenance. ETI will be implementing a Relay Asset Management System (RAMS) which will improve management, storage, and documentation for device control configuration files.

**IV. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees;**

Prior to a large storm, damage assessment teams and equipment are pre-deployed to nearby sites. Following the large storm, once it is deemed safe to work, the damage assessment and data collection process begins with ground patrols. Aerial patrols, primarily for transmission lines, commence once wind speeds are deemed safe for personnel and equipment. Based on the actual path of the storm and outages recorded, the preliminary list of assets to inspect is adjusted. For hurricane events, ETI patrols the re-entry routes to identify if any are obstructed such that access by first responders, including utility restoration crews, into the affected area would be hampered. These findings are reported back to the Texas Division of Emergency Management ("TDEM"). The lines crossing the re-entry routes and transmission lines necessary to support system stability are prioritized to be inspected first. Transmission lines that would allow restoration to bulk substations and other priority substations are prioritized next. Simultaneously, the substation and distribution systems are being prioritized as well.

As transmission and substation patrols are completed, the results are written up and supplied to office personnel at local sites. Damage information for transmission

lines includes structure number, environmental conditions, vegetation issues, shield wire, cross arms, insulator, conductor, or pole damages and the respective transmission line number or line segment. Damage information for substations include damage to equipment in the yard, substation perimeter equipment, control house, and electrical equipment within the control house. Office personnel logs the damage assessment information received into Entergy's Consolidated Outage System ("COS"). Once logged, other storm branches utilize the information to make information-based decisions on a recovery plan, in coordination with the distribution recovery plan.

For distribution, ETI presently uses EpochField as its data collection tool for distribution damage assessments during routine storms. ETI is in the process of testing Environmental Systems Research Institute ("ESRI") software for distribution data collection. Entergy is presently working on the licensing agreement and anticipates this new software will be available for distribution storm data collection by June 2021. This tool utilizes Wi-Fi for real-time updates as assessments are being made for faster analysis and reporting.

Entergy is implementing a new suite of software tools, Enterprise Asset Management (EAM), for asset management and work management. Maximo is the new tool for asset management and Click is the new tool for work management. The goal is to provide a seamless transfer of information across business functions such as: PrimaVera P6 (project management), PowerPlan (property accounting), PeopleSoft (HR management), Asset Suite (procurement), and the new Transmission-Outage Management System: T-OMS and the new Distribution-Outage Management System: ADMS. Specific to transmission outage management, the design includes an automatic triggering of a work order in Maximo for an outage case realized by T-OMS. The work order will be assigned to field resources available within Click, executed and field-completed with findings. Additional work orders for repair of specific assets will be created as follow-on children of the initiating work order to retain relationship to the outage case. In the case of multiple follow-on work orders, ability to prioritize and sequencing of crew dispatch. Results of cause and follow-up activity, entered by the field worker in Click, will be reported back to the originating outage case via the integration. For the historical record, the relationship between the outage case and the Maximo work order(s) will be retained. This future enhancement for the automation of work tickets will enhance our ability to study impacts and costs of storm damage which will be used in developing future hardening projects.

**V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule**

ETI's transmission and distribution construction standards are discussed in Section I.

ETI has pole attachment policies which allow third-parties to attach their wires, cables, and other devices to ETI's distribution poles. Any company, or entity, desiring to attach to ETI's distribution poles must submit a detailed proposal providing the type of attachments, the number of attachments, and the desired route. ETI provides standard drawings depicting the allowable manner of construction to the attaching party.

The attaching third-party is subject to the cost of inspecting the overall route as well as the individual poles. In addition, the attaching party must pay for any and all make-ready costs which are deemed necessary to ensure all attachments are made in a manner acceptable and in compliance with ETI's safety standards.

The attaching third-party's construction must meet the current ETI distribution design standards for joint use poles. ETI reserves the right to modify or remove any attachments which fail to meet these standards. These modifications or removals will be at the expense of the attaching party.

The attaching third-party agrees to pay any costs for damages and repairs to ETI facilities as a result of a failure of their cables, wires, or other equipment.

ETI's distribution pole testing program is described in Section VI.

ETI's transmission pole testing program is defined by a Wooden Pole Ground Line Inspection and Treatment Maintenance procedure. The schedule is defined by a Transmission Line Maintenance Interval standard. The standard is to perform wood pole ground line treatment and inspection every 12 years and routine aerial patrols twice per year. The standard also allows for climbing inspections as needed based on the performance of particular lines and conditions identified during routine inspections.

## **VI. Distribution feeder inspection schedule**

Inspecting a distribution feeder is accomplished through six main activities:

- A. Pole Inspection Program
- B. FOCUS (Find, Observe, Collect, Understand & Succeed) Program
- C. OHLM (Overhead Line Preventative Maintenance Program
- D. Feeder Level Investment Program
- E. OCA (Outage Causal Analysis) Program
- F. Daily Activities and Storm Restoration

- A. Pole Inspection Program: Beginning in 2021, based on the 2016-2020 pole inspection results, 10% of ETI's distribution poles will be inspected annually using the more comprehensive inspection method that was piloted in 2016.

- B. FOCUS Program: This program selects circuit devices that meet certain reliability thresholds. All ETI circuit devices are analyzed on a quarterly basis and certain devices are selected based on reliability thresholds. The selected devices with targeted performance improvement are inspected from the selected device to the next downstream protective device(s). The primary focus of the inspection is improving performance by mitigating potential reliability related issues. Items are identified and analyzed to determine corrective actions to be implemented.
- C. OH Line Preventive Maintenance Program: This program addresses the maintenance items identified in the Wood Pole Inspection Program (WPP) and complies with the requirements of NESC 214 (Inspection and tests of lines and equipment). Maintenance items will be worked for the entire feeder including idle facilities.
- D. Feeder Level Investment Program: This program selects certain feeders based on SAIDI and SAIFI performance. These feeders are then analyzed for reliability improvement (such as: repair/replace wire, BIL improvements, feeder storm hardening, adding sectionalizing devices, self-healing networks, reducing customer exposure and customer counts, and relocating the feeder for easier access and reliability.).
- E. OCA Program: This program selects some of the largest Customer interruption and Customer minute outages of the previous month for review of the outage restoration actions and identification of potential additional remediation actions. Corrective actions are then planned and implemented.
- F. Daily Activities and Storm Restoration: In addition to the specific programs mentioned above, field personnel, in the course of their normal daily activities, look for abnormalities that could affect the reliability of the electric system. ETI, also, encourages other interconnected electric service providers with trained field personnel to report any abnormalities in ETI's electric facilities to ETI.

**VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation**

ETI plans to enhance reliability through the implementation of transmission and distribution automation.

- A. For Distribution response, see Section III above.

B. For Transmission: implementation of nine transmission line auto-sectionalizing projects is underway for 2021. Additional analysis is underway to determine 2022-2025 plans. This program:

- mitigates customer impact of outages through automatic sectionalizing improvements,
- includes linking distance to fault (DTF) information to SCADA, and
- includes the installation of motor operated transmission switches, and automatic sectionalizing equipment.

**VIII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system**

ETI's design standards and specifications for transmission, distribution, and substations comply with the latest revision of the National Electric Safety Code (NESC). All Transmission, Distribution and Substation design standards incorporate the maximum wind speeds charts developed by the American Society of Civil Engineers standard ASCE-7 "Minimum Design Loads for Building and Other Structures". Furthermore, standard substation structures have been developed to be used throughout the Entergy System that incorporated the design load combinations that envelop the extreme conditions (wind, ice, seismic) of the entire Entergy system. These robust standard structures will be used in new substation construction and expansions when appropriate.

**IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards**

Entergy utilizes a structural modeling program to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards. Structural analysis using the structure model can factor in loading contributions from attachments (wires, equipment, cables, 3rd party and joint use attachments).

**X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system**

Entergy has developed and continues to enhance its Transmission and Distribution damage prediction model accuracy for tropical cyclones and frozen



precipitation. Improvements and upgrades are continuing to be pursued for efficiencies and accuracies based on pre-event predictions and post event analysis.

**XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities**

A. Plans and procedures for use of structures owned by other entities in the provision of distribution service are implemented through agreements ETI has in place that allow ETI to attach its distribution facilities to poles owned by the Incumbent Local Exchange Carriers throughout ETI's service territory. These agreements allow for current and future attachments as needed by ETI. ETI is able to maintain its standards and specifications for design, material purchase and fabrication, and construction; ensuring the quality of the workmanship is consistent with industry practices even when its facilities are attached to a pole owned by a third party.

B. Poles owned by other utilities replaced by ETI:

- Emergency replacements are worked by ETI distribution crews and billed to the appropriate third-party company (AT&T, etc.).
- Poles identified at the time ETI is performing distribution maintenance belonging to a third-party utility company may be replaced by ETI if the condition of the pole is such that a failure is imminent. This type replacement will be billed to the appropriate third-party company.
- If time allows, ETI will inform the third-party company of the need to replace the pole, allowing them the opportunity to replace the pole.

**XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads**

ETI has identified its priority loads and maintains such designation of these customers in its database systems such that their specific feeder location is identifiable. These priority loads are included in ETI's storm restoration plans and are taken into consideration during restoration of service after an event. These priority loads are served by a majority of ETI's distribution substations and feeders. As of February 25, 2021, approximately 86% of ETI's distribution substations and 63% of ETI's distribution feeders have at least one priority customer. Given this wide-spread dispersion of these priority loads, targeted hardening would require a significant rebuild of ETI's facilities. Instead, ETI's storm hardening strategies discussed in Section I will continue to be pursued.



## Filing Receipt

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# Compliance Filing

Pursuant to 16 Tex. Admin. Code § 25.95

Project No. 39339

Entergy Texas, Inc.

Storm Hardening Plan Summary

Calendar Years 2021 - 2025

Noting 2021 Material Changes and Implementation

May 2, 2022

Pursuant to 16 Tex. Admin. Code (“TAC”) § 25.95, Entergy Texas, Inc. (“ETI”) files its material revisions to its 2021 – 2025 Storm Hardening Plan (the “Plan”) (noted as “a”) throughout the document) and a summary of its progress implementing the Plan (noted as “b”) throughout the document). This update follows the outline of the rule subsection 16 TAC § 25.95(e):

- I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities;
- II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management;
- III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing;
- IV. Plans and procedures to enhance post-storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees;
- V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule;
- VI. Distribution feeder inspection schedule;
- VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation;
- VIII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system;
- IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards;
- X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system;
- XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities; and
- XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.

**I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: The construction standards, policies, procedures, and practices employed are implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management.**

ETI's compliance with 16 TAC § 25.96 (filed in Project No. 41381) fully satisfies the vegetation management planning and reporting requirements of 16 TAC § 25.95(e)(2).

**III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: ETI installed 28 new reclosers. ETI upgraded 43 existing reclosers. ETI replaced 14 existing feeder breakers.

**IV. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees.**

- a) Material Revision: Entergy is presently working on the licensing agreement for the ESRI distribution data collection software and anticipates this new software will be available for distribution storm data collection by August 2022.
- b) 2021 Implementation: Entergy's Enterprise Asset Management (EAM) tools were implemented in 2021 as discussed in ETI's report filed on April 28, 2021.

**V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: For distribution pole inspections completed in 2021, see ETI's Infrastructure Improvement and Maintenance 2021 Calendar Year Report filing in Project No. 38068 in accordance with 16 TAC § 25.94.

**VI. Distribution feeder inspection schedule.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation:
  - ETI performed 53,414 pole inspections. ETI completed 2,905 C-Truss pole restorations and a total of 34 OSMOSE identified priority pole replacements.
  - ETI completed 137 FOCUS projects that included the inspection and improvement of facilities.
  - ETI completed designs for 9 Feeder Level Investment Program projects in 2021, and construction completed 5.

**VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: ETI completed nine transmission line auto-sectionalizing projects in 2021. Implementation of fifteen projects are underway for 2022.

**VIII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: The design standards and specifications for transmission, distribution, and substations are implemented at the time of design of projects to be constructed, at the time of maintenance, or

at the time of repair (if materials and time allows for the updated design).

**IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: The structural modeling program is implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: Implementation is complete. Ongoing enhancements are implemented as appropriate.

**XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: The plans and procedures were implemented as appropriate throughout the year.

**XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.**

- a) ETI has no material revisions to the Plan since ETI's report filed on April 28, 2021.
- b) 2021 Implementation: ETI has identified its priority loads and maintains such designation of these customers in its database systems such that their specific feeder location is identifiable. These priority loads are included in ETI's storm restoration plans and are taken into consideration during restoration of service after an event. These

priority loads are served by a majority of ETI's distribution substations and feeders. As of April 23, 2022, approximately 87% of ETI's distribution substations and approximately 71% of ETI's distribution feeders have at least one priority customer. Given this wide-spread dispersion of these priority loads, targeted hardening will require a prioritization of the priority loads and subsequently the substations and feeders that serve them. At this time, ETI's storm hardening strategies discussed in Section I will continue to be pursued.





## **Filing Receipt**

**Filing Date - 2023-05-01 02:28:28 PM**

**Control Number - 39339**

**Item Number - 190**

# Compliance Filing

Pursuant to 16 Tex. Admin. Code § 25.95

Project No. 39339

Entergy Texas, Inc.

Storm Hardening Plan Summary

Calendar Years 2022 - 2026

Noting 2022 Material Changes and Implementation

May 1, 2023

Pursuant to 16 Tex. Admin. Code (“TAC”) § 25.95, Entergy Texas, Inc. (“ETI”) files its material revisions to its 2022 – 2026 Storm Hardening Plan (the “Plan”) (noted as “a”) throughout the document) and a summary of its progress implementing the Plan (noted as “b”) throughout the document). This update follows the outline of the rule subsection 16 TAC § 25.95(e):

**Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities.**

- a) Material Revision: ETI has updated its windspeed map to further harden the coastal counties that are more susceptible to damaging hurricane winds. This updated windspeed map and its extreme wind loads are applied to all new ETI designs.
- b) 2022 Implementation: The construction standards, policies, procedures, and practices employed are implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**I. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management.**

ETI’s compliance with 16 TAC § 25.96, as detailed in its annual Vegetation Management Report filed in Project No. 41381, fully satisfies the vegetation management planning and reporting requirements of 16 TAC § 25.95(e)(2).

**II. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing.**

- a) ETI has no material revisions to the Plan since ETI’s report filed on May 2, 2022.
- b) 2022 Implementation: ETI installed 36 new reclosers. ETI upgraded 4 existing reclosers. ETI replaced 12 existing feeder breakers.

**III. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees.**

- a) Material Revision: Entergy is presently working on implementing the ESRI based Distribution Damage Assessment Collection Tool and anticipates this new software will be available for storm data collection by August 2023.
- b) 2022 Implementation: Entergy’s AirDAT (Air Data Acquisition Tool) is scheduled to be implemented in 2023. This tool will utilize LiDAR from a fixed

wing drone to identify damages to structures post-storm for enhanced data collection.

**IV. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule.**

- a) Material Revision: ETI's application of NESC Rule 250C, as well as the increased load demands, requires the utilization of stronger poles. All pole materials can provide the strength required, but the supply of stronger wood poles is currently constrained. As a result, ETI has expanded the selection of wood, composite, and steel to stronger class poles. Concrete poles were also added as an additional supply option.
- b) 2022 Implementation: For distribution pole inspections completed in 2022, see ETI's Infrastructure Improvement and Maintenance 2022 Calendar Year Report filing in Project No. 38068 in accordance with 16 TAC § 25.94.

**V. Distribution feeder inspection schedule.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022.
- b) 2022 Implementation:
  - ETI performed 58,605 pole inspections. ETI completed 3,997 C-Truss pole restorations and a total of 191 OSMOSE identified priority pole replacements.
  - ETI completed 33 FOCUS projects that included the inspection and improvement of facilities.
  - ETI completed designs for 8 Feeder Level Investment Program projects in 2022, and completed construction on 1.

**VI. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation.**

- a) Material Revision: ETI increased the Design Wind Speed rating for the counties along the coast. This measure was undertaken to further enhance reliability along the coastal zone.
- b) 2022 Implementation: ETI completed 3 transmission line auto-sectionalizing projects in 2022. Implementation of 7 projects are underway for 2023.

**VII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022. However, ETI currently uses the 2017 NESC while the 2023 version is under review for adoption.
- b) 2022 Implementation: The design standards and specifications for transmission, distribution, and substations are implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**VIII. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022.
- b) 2022 Implementation: The structural modeling program is implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**IX. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022.
- b) 2022 Implementation: Implementation is complete. Ongoing enhancements are implemented as appropriate.

**X. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022.
- b) 2022 Implementation: The plans and procedures were implemented as appropriate throughout the year.

**XI. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 2, 2022.
- b) 2022 Implementation: ETI has identified its priority loads and maintains such designation of these customers in its database systems such that their specific feeder location is identifiable. These priority loads are included in ETI's storm restoration plans and are taken into consideration during restoration of service after an event. These priority loads are served by a majority of ETI's distribution substations and feeders. As of April 25, 2023, approximately 94% of ETI's distribution substations and approximately 61% of ETI's distribution feeders have at least one priority customer. Given this wide-spread dispersion of these priority loads, targeted hardening will require a prioritization of the priority loads and subsequently the substations and feeders that serve them. At this time, ETI's storm hardening strategies discussed in Section I will continue to be pursued.



## **Filing Receipt**

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# Compliance Filing

Pursuant to 16 Tex. Admin. Code § 25.95

Project No. 39339

Entergy Texas, Inc.

Storm Hardening Plan Summary

Calendar Years 2023 - 2027

Noting 2023 Material Changes and Implementation

May 1, 2024



Pursuant to 16 Tex. Admin. Code (“TAC”) § 25.95, Entergy Texas, Inc. (“ETI”) files its material revisions to its 2023 – 2027 Storm Hardening Plan (the “Plan”) (noted as “a” throughout the document) and a summary of its progress implementing the Plan (noted as “b”) throughout the document). This update follows the outline of the rule subsection 16 TAC § 25.95(e):

**I. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities.**

- a) ETI has no material revisions to the Plan since ETI’s report filed on May 1, 2023.
- b) 2023 Implementation: The construction standards, policies, procedures, and practices employed are implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**II. Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management.**

ETI’s compliance with 16 TAC § 25.96, as detailed in its annual Vegetation Management Report filed in Project No. 41381, fully satisfies the vegetation management planning and reporting requirements of 16 TAC § 25.95(e)(2).

**III. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide enhanced outage resilience, faster outage restoration, and/or grid self-healing.**

- a) ETI has no material revisions to the Plan since ETI’s report filed on May 1, 2023.
- b) 2023 Implementation: ETI installed 1 new recloser, upgraded 177 existing reclosers, and replaced 8 existing feeder breakers.

**IV. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees.**

- a) ETI has no material revisions to the Plan since ETI’s report filed on May 1, 2023.
- b) 2023 Implementation: Entergy’s AirDAT (Air Data Acquisition Tool) has been delayed. In 2023, Entergy collaborated with other electric utilities in data collection methods in preparation of adoption. This tool utilizes LiDAR from a fixed wing drone to identify damages to structures post-storm for enhanced

data collection. Entergy also implemented the ESRI based Distribution Damage Assessment Collection Tool and began collecting storm data in August 2023.

**V. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: For distribution pole inspections completed in 2023, see ETI's Infrastructure Improvement and Maintenance 2023 Calendar Year Report filing in Project No. 38068 in accordance with 16 TAC § 25.94.

**VI. Distribution feeder inspection schedule.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation:
  - ETI performed 40,646 pole inspections. ETI completed 3,152 C-Truss pole restorations and a total of 194 OSMOSE identified priority pole replacements.
  - ETI completed 38 FOCUS projects that included the inspection and improvement of facilities.
  - ETI completed the last 9 projects of the Feeder Level Investment Program ("FLIP") in 2023. With the completion of the FLIP program, ETI will focus towards targeted underperforming devices aligned with ETI's distribution resilience efforts.

**VII. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: ETI completed 4 transmission line auto-sectionaling projects and 15 new distribution self-healing network projects in 2023.

**VIII. Plans and procedures to comply with the most recent National Electric Safety Code (NESC) wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system.**

- a) Material Revision: On August 1, 2022, the IEEE SA (IEEE Standards Association) published its five-year update to the NESC to be effective beginning February 1, 2023. While ETI has approved the adoption of the 2023 NESC wind loading standards, ETI's standards for structure wind loading continue to exceed NESC wind loading requirements.
- b) 2023 Implementation: The design standards and specifications for transmission, distribution, and substations are implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**IX. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: The structural modeling program is implemented at the time of design of projects to be constructed, at the time of maintenance, or at the time of repair (if materials and time allows for the updated design).

**X. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: Implementation is complete. Ongoing enhancements are implemented as appropriate.

**XI. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: The plans and procedures were implemented as appropriate throughout the year.

**XII. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.**

- a) ETI has no material revisions to the Plan since ETI's report filed on May 1, 2023.
- b) 2023 Implementation: ETI has identified its priority loads and maintains such designation of these customers in its database systems such that their specific feeder location is identifiable. These priority loads are included in ETI's storm restoration plans and are taken into consideration during restoration of service after an event. These priority loads are served by a majority of ETI's distribution substations and feeders. As of April 15, 2024, approximately 72% of ETI's distribution substations and approximately 41% of ETI's distribution feeders have at least one priority customer. Given this wide-spread dispersion of these priority loads, targeted hardening will require a prioritization of the priority loads and subsequently the substations and feeders that serve them. At this time, ETI's storm hardening strategies discussed in Section I will continue to be pursued.