



Filing Receipt

Filing Date - 2025-02-24 02:40:05 PM

Control Number - 57579

Item Number - 37

**SOAH DOCKET NO. 473-25-11558
PUC DOCKET NO. 57579**

APPLICATION OF CENTERPOINT	§	
ENERGY HOUSTON ELECTRIC, LLC	§	BEFORE THE STATE OFFICE
FOR APPROVAL OF ITS 2026-2028	§	OF
TRANSMISSION AND DISTRIBUTION	§	ADMINISTRATIVE HEARINGS
SYSTEM RESILIENCY PLAN	§	

**TEXAS INDUSTRIAL ENERGY CONSUMERS FIRST REQUEST FOR
INFORMATION TO CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC**

Pursuant to 16 T.A.C. § 22.144, Texas Industrial Energy Consumers (“TIEC”) requests that CenterPoint Energy Houston Electric, LLC (“CenterPoint”) provide all of the information requested in Exhibit “A” within the time frame specified under the procedural schedule set in this proceeding.

Pursuant to 16 T.A.C. § 22.144(c)(2), TIEC further requests that answers to the requests for information be made under oath. Each answer should identify the person responsible for preparing that answer (other than the purely clerical aspects of its preparation) and the name of the witness in this proceeding who will sponsor the answer and who can vouch for its accuracy. In producing documents pursuant to this request for information, please indicate the specific request(s) to which the document is being produced. These requests are continuing in nature, and should there be, for any reason, a change in circumstances which would modify or change an answer supplied by you, such changed answer should be submitted immediately as a supplement to your original answer pursuant to 16 T.A.C. § 22.144(i). Please answer each request and sub-request in the order in which they are listed and in sufficient detail to provide a complete and accurate answer to the request. TIEC further requests that each item of information be made available as it is completed, rather than upon compilation of all information requested.

All information responsive to the requests on the attached Exhibit “A” should be sent to the following persons via overnight courier, on a piecemeal basis as individual items become available:

Michael A. McMillin
John R. Hubbard
O'Melveny & Myers LLP
500 West 2nd St., Suite 1900
Austin, TX 78701
(737) 261-8600
mmcmillin@omm.com
jhubbard@omm.com
ommesevice@omm.com

DEFINITIONS AND INSTRUCTIONS

A. “CenterPoint Energy Houston Electric, LLC”, “CenterPoint”, “the Company” or “you” refers to CenterPoint Energy Houston Electric, LLC, and its affiliates, subsidiaries, and any person acting or purporting to act on their behalf, including without limitation, attorneys, agents, advisors, investigators, representatives, employees or other persons.

B. The terms “document” or “documents” are used in their broadest sense to include, by way of illustration and not limitation, all written or graphic matter of every kind and description whether printed, produced, reproduced or stored by any process whether visually, magnetically, mechanically, electronically or by hand, whether final or draft, original or reproduction, whether or not claimed to be privileged or otherwise excludable from discovery, and whether or not in your actual or constructive possession, custody, or control. The terms include writings, correspondence, telegrams, memoranda, studies, reports, surveys, statistical compilations, notes, calendars, tapes, computer disks, data on computer drives, e-mail, cards, recordings, contracts, agreements, invoices, licenses, diaries, journals, accounts, pamphlets, books, ledgers, publications, microfilm, microfiche and any other data compilations from which information can be obtained and translated, by you if necessary, into reasonably usable form. The definition includes electronic information that has been deleted. “Document” or “documents” shall also include every copy of a document where the copy contains any commentary or notation of any kind that does not appear on the original or any other copy.

C. Pursuant to Rule 196.4 of the Texas Rules of Civil Procedure, TIEC specifically requests that any electronic or magnetic information (which is included in the definition of “document”) that is responsive to a request herein be produced on CD-ROM in a format that is compatible with Adobe Acrobat, Microsoft, Macintosh and/or Word Perfect and be produced with your response to these requests. If emails are responsive to these requests, please provide a searchable .pdf copy of the entire email string. Attachments to emails should be provided with the email in searchable .pdf form, unless it is stored in a different format, in which the attachment should be produced in its native format and provided on CD-Rom.

D. The terms “and” and “or” shall be construed both disjunctively and conjunctively as necessary to make the request inclusive rather than exclusive.

E. "Each" shall be construed to include the word "every" and "every" shall be construed to include the word "each."

F. "Any" shall be construed to include "all" and "all" shall be construed to include "any."

G. The term "concerning," or one of its inflections, includes the following meanings: relating to; referring to; pertaining to; regarding; discussing; mentioning; containing; reflecting; evidencing; describing; showing; identifying; providing; disproving; consisting of; supporting; contradicting; in any way legally, logically or factually connected with the matter to which the term refers; or having a tendency to prove or disprove the matter to which the term refers.

H. The term "including," or one of its inflections, means and refers to "including but not limited to."

I. Words used in the plural shall also be taken to mean and include the singular. Words used in the singular shall also be taken to mean and include the plural.

J. The present tense shall be construed to include the past tense, and the past tense shall be construed to include the present tense.

K. If any document is withheld under any claims of privilege, please furnish a list identifying each document for which a privilege is claimed together with the following information: date, sender, recipients of copies, subject matter of the document, and the basis upon which such privilege is claimed. This instruction is not intended to impose an obligation greater than contemplated by the Commission's rules and any applicable orders in this case.

L. Pursuant to 16 T.A.C. § 22.144(h)(4), if the response to any request is voluminous, please provide a detailed index of the voluminous material.

M. If the information requested is included in previously furnished exhibits, workpapers, and responses to other discovery inquiries or otherwise, in hard copy or electronic format, please furnish specific references thereto, including Bates Stamp page citations and detailed cross-references.

N. The term "emails" includes the entire email string and all attachments found anywhere within the email string. Please refer to paragraph "D." regarding specific instructions for producing such items.

O. "Communications" refers to correspondence of any kind, including emails.

P. "Identify" and "describe" shall have the meaning set forth below according to the context in which the term is used:

- i. When used in reference to an individual, shall mean to state his or her full name, business affiliation, job title, and business address and telephone number;

- ii. When used in reference to a corporation, shall mean to state its full name, its state of incorporation, its address and its principal place of business;
- iii. When used in reference to any entity other than an individual or corporation, shall mean to state its official name, its organizational form and its address;
- iv. When used in reference to a document, shall mean to state the type of document, date, author, addressee, title, its present location, the name and address of its custodian, and the substance of the contents thereof. In lieu of identifying any document, copies thereof may be furnished; and
- v. When used in reference to a communication, shall mean to state the form of the communication (e.g., telephone conversation, letter, telegram, teletype, telecopy, written memorandum, face to face conversation, or any other form), the date of the communication or the dates on which the communication was sent and/or received if not the same, the parties to the communication, the party who initiated it, the substance of the communication, and the present location and the name and address of the custodian if the communication was non-verbal and/or of any written memorialization of the communication.

Respectfully submitted,

O'MELVENY & MYERS LLP

/s/ Michael A. McMillin

Michael A. McMillin

State Bar No. 24088034

John R. Hubbard

State Bar No. 24120909

500 West 2nd St., Suite 1900

Austin, TX 78701

(737) 261-8600

kcoleman@omm.com

mmcmillin@omm.com

jhubbard@omm.com

OMMeservice@omm.com

**ATTORNEYS FOR TEXAS INDUSTRIAL
ENERGY CONSUMERS**

CERTIFICATE OF SERVICE

I, John R. Hubbard, Attorney for TIEC, hereby certify that a copy of this document was served on all parties of record in this proceeding on this 24th day of February, 2025 by electronic mail, facsimile, and/or First Class, U.S. Mail, Postage Prepaid.

/s/ John R. Hubbard

John R. Hubbard

**SOAH DOCKET NO. 473-25-11558
PUC DOCKET NO. 57579**

APPLICATION OF CENTERPOINT	§	
ENERGY HOUSTON ELECTRIC, LLC	§	BEFORE THE STATE OFFICE
FOR APPROVAL OF ITS 2026-2028	§	OF
TRANSMISSION AND DISTRIBUTION	§	ADMINISTRATIVE HEARINGS
SYSTEM RESILIENCY PLAN	§	

**TEXAS INDUSTRIAL ENERGY CONSUMERS FIRST REQUEST FOR
INFORMATION TO CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC**

- TIEC 1-1** Please provide in “live” Excel format all Figures and Exhibits in the Application, Testimony, Resiliency Plan, and Guidehouse report, along with all supporting workpapers.
- TIEC 1-2** Referring to the proposed utility-scale microgrid pilot program:
- a. Does CenterPoint consider the microgrid program a part of its System Resiliency Plan under 16 TAC § 25.62?
 - b. Is CenterPoint intending to apply its proposed accounting language to the microgrid program?
- TIEC 1-3** Referring to various places that discuss flexibility (i.e., Application at page 20, SRP at page 34, and Direct Testimony of Eric D. Easton at page 16), please summarize and restate the flexibility approval that CenterPoint is seeking from the Commission in this filing.
- TIEC 1-4** Referring to Figures APP-4 and APP-5, provide the same tables, but inclusive of 2024 cost.
- TIEC 1-5** Referring to Figure APP-6, for each action in GHRI Phase One:
- a. State the transmission-related quantity and cost.
 - b. State whether or not any portion of the action is included in this SRP.
 - c. For each action which is included in this SRP per subpart (b), state the quantity and cost.
- TIEC 1-6** Referring to Figure APP-7, for each action in GHRI Phase Two:
- a. State whether or not the action is on-track for completion by June 1, 2025.
 - b. For each action that is not on-track in response to subpart (a), state the reason for the delay.

- c. State the transmission-related quantity and cost.
- d. State whether or not any portion of the action is included in this SRP.
- e. For each action which is included in this SRP per subpart (d), state the quantity and cost.

TIEC 1-7 Referring to the Application at page 9, provide workpapers that support the statement that Phase One and Phase Two GHRI will lead to more than 125 million fewer customer outage minutes.

TIEC 1-8 Does CenterPoint expect to incur any cost related to this SRP in 2025? If yes, please provide workpapers listing each measure and the estimated capital and O&M expense to be incurred in 2025.

TIEC 1-9 Referring to the SRP at page 51, is CenterPoint seeking approval to spend more money than what is shown in Figure APP-1 on page 2 of the Application to accomplish the scope of the measures listed in Figure APP-1? If yes, please state the amount of additional spend. If no, please elaborate as to what “additional” means in this context.

TIEC 1-10 Referring to the Transmission System Hardening Resiliency Measure in the SRP at pages 88-92:

- a. State the quantity of 138 kV wooden structures being replaced.
- b. State the quantity of 345 kV wooden structures being replaced.
- c. Confirm that zero 69 kV wooden structures are proposed for replacement under this measure.
- d. Confirm that CenterPoint will have zero remaining 138 kV and 345 kV wooden structures if this measure is executed.
- e. State the current total quantity of legacy transmission steel towers in service, by vintage and by voltage.
- f. State the quantity of legacy transmission steel towers that have been replaced in the past 10 years due to a resiliency event, by year, by vintage, by voltage, and by resiliency event.
- g. State the quantity of legacy transmission steel towers that have been replaced in the past 10 years for reasons other than a resiliency event, by year, by vintage, and by voltage.
- h. State the criteria used to define a transmission steel tower as “legacy.”

- i. Describe how CenterPoint determined to replace the 242 structures that are in this SRP out of the total quantity that meet its legacy criteria.
- j. Describe and provide an illustration or photograph that depicts a double circuit 345 kV tangent structure that is also considered a legacy transmission steel tower.
- k. Describe in more detail what “additional necessary structures” includes and excludes.
- l. State the costs to replace wooden structures and to replace legacy transmission steel structures. If this does not equal the total cost listed, explain the remaining cost as well.
- m. State the cost to replace “additional necessary structures.”
- n. What is CenterPoint’s historical failure rate for non-wood transmission structures exposed to wind speeds which exceeded the Company's at-the-time design criteria?
- o. What failure rate, or failure rate improvement, did CenterPoint assume for its new transmission structures in this SRP?
- p. Please discuss the alternatives that were considered for the legacy transmission steel towers.
- q. When did CenterPoint transition from an asset centric program-based approach?
- r. Is the transition away from an asset centric program-based approach limited to resiliency plans or is this a total company transition?

TIEC 1-11 Referring to the 69kV Conversion Projects Resiliency Measure in the SRP at pages 92-95:

- a. State the approximate circuit miles proposed for conversion.
- b. Are new 138 kV transformers required? If yes, state the quantity.
- c. State which of the proposed conversions are on circuits with NERC violations to be resolved.
- d. State the NERC requirements that require CenterPoint to have “greater switching options.”
- e. Do the conversions allow CenterPoint to meet minimum NERC requirements, or do these options go above and beyond NERC requirements?

- f. State CenterPoint's total quantity of 69 kV wooden structures.
- g. State the quantity of 69 kV wooden structures that will be replaced with this measure.
- h. Is the high loading on existing 138 kV circuits a NERC violation?
- i. State the method in 16 TAC § 25.62 under which this measure is being implemented.
- j. Was hardening the 69 kV system in its current ROW considered as an alternative? If no, please explain why it was not considered. If yes, provide the cost to harden the circuits proposed for conversion in the SRP.

TIEC 1-12 Referring to the S90 Tower Replacement Resiliency Measure in the SRP at pages 96-99.

- a. State the quantity of S90 towers to be replaced that directly support conductors that cross major highways.
- b. What is CenterPoint's historical failure rate for S90 towers exposed to wind speeds which exceeded the Company's at-the-time design criteria?
- c. State the quantity of S90 towers that have been replaced in the past 10 years due to a resiliency event, by year, by vintage, by voltage, and by resiliency event.
- d. State the quantity of S90 towers that have been replaced in the past 10 years for reasons other than a resiliency event, by year, by vintage, and by voltage.
- e. Provide the project number and/or other locations in which the alternative of building new lines to a higher capacity are being discussed by ERCOT and other TSPs.

TIEC 1-13 Referring the Coastal Resiliency Upgrades Resiliency Measure in the SRP at pages 99-102:

- a. State the reason that the 69 kV to 138 kV conversion in this measure was not included in the 69 kV Conversion Projects measure.
- b. Are there existing NERC violations to be resolved? If yes, provide the evidence supporting this.
- c. Does the measure allow CenterPoint to meet minimum NERC requirements, or does this measure go above and beyond NERC requirements?

- d. Provide the cost to execute the following projects in this measure: (1) 69 kV to 138 kV conversion; (2) Installation of new underwater cable; (3) Re-routing of transmission line; and (4) Construction of new transmission circuit. If the total of the projects does not equal the total for this measure, please state the remaining cost and its purpose.
- e. Has this project been proposed for ERCOT RTP? If yes, why is this project not moving forward there? If no, please explain the reason it has not been proposed.
- f. Referring to Exhibit ELS-2, page 108, this project is described as mitigating low voltages, overloads, and power quality concerns – as such, explain why CenterPoint does not consider this a reliability project.

TIEC 1-14 Referring to the Mobile Substation Resiliency Measure in the SRP at pages 124-126:

- a. Provide a table in “live” Excel format that lists all mobile substations in CenterPoint’s current inventory, along with the following information: MVA, input and output voltage configuration(s), asset age, and cost functionalization. If any are expected to be retired this year, please identify them.
- b. Provide a table in “live” Excel format that lists all mobile substations that are on-order or planned to be ordered in 2025 (excluding this SRP), along with the following information: MVA, input and output voltage configuration(s), and cost functionalization.
- c. Provide a table in “live” Excel format that lists the six mobile substations proposed in this SRP, along with the following information: MVA, input and output voltage configuration(s), and cost functionalization.
- d. In the past 10 years, state the maximum quantity of mobile substations that were simultaneously actively supplying customers during a resiliency event. How many of the quantity listed were deployed for reasons other than the resiliency event?
- e. For subpart (d), provide the date and resiliency event.
- f. In the past 10 years, has CenterPoint experienced a resiliency event situation in which all of its mobile substations were deployed and it would have benefitted from additional mobile substations? If yes, please describe the resiliency event and provide relevant information that substantiates that additional mobile substation(s) would have provided incremental benefit.
- g. Describe how CenterPoint will distinguish its SRP mobile substations from its current inventory.

- h. In determining the type and quantity of mobile substations necessary, did CenterPoint perform any benchmarking with other utilities? If yes, please provide the benchmarking analysis.

TIEC 1-15 Referring to the Digital Substation Measure in the SRP at pages 168-171:

- a. Does CenterPoint have any fully deployed digital substations? If yes, list each substation and the year of completion. If no, state the reason.
- b. If the answer to subpart (a) is yes, did CenterPoint rely upon its existing digital substations in determining the resiliency benefits?
- c. If the answer to subpart (a) is no, how did CenterPoint determine the resiliency benefits upon which it relied?

TIEC 1-16 Referring to the Wildfire Strategic Undergrounding Measure in the SRP at 174-177:

- a. State the quantity of circuits, circuit miles of transmission line, and the voltages that would be converted to underground.
- b. Estimate the functionalized cost of this measure.
- c. Reconcile the benefit of undergrounding transmission lines in this measure with the statement in the Transmission Hardening, 69kV Conversion, and other transmission measures that undergrounding is “cost prohibitive” at “5 to 10 times more costly than overhead lines” at a cost of “\$20 million per mile.”
- d. Describe the alternatives considered for this measure.

TIEC 1-17 Referring to the Wildfire Vegetation Management Measure in the SRP at 177-179:

- a. State the quantity of circuits, circuit miles of transmission line, and voltages that would receive vegetation management for wildfire risk.
- b. Estimate the functionalized cost of this measure.
- c. Describe how fire-retardant material is considered vegetation management.
- d. Describe what it means for fire-retardant material to be “placed near” transmission tower structures and how that addresses wildfire risk.
- e. Describe how this measure is distinguished from normal vegetation management.
- f. Describe the alternatives considered for this measure.

- g. Do the transmission lines that CenterPoint proposes in this measure currently meet NERC requirements for vegetation management?
- h. How did CenterPoint decide which circuits to place in the Wildfire Strategic Underground Measure and which circuits to place in the Wildfire Vegetation Management Measure?

TIEC 1-18 Referring to Appendix A, page 28, please provide a copy of the referenced PUC report or the location one can be obtained.

TIEC 1-19 Referring to Appendix A, Figure AA-40, please elaborate on the benefit of LIDAR in analyzing for tree fall risk. For example, is the analysis done automatically or with AI? Does it enable remote identification compared to field surveys? How is the LIDAR data gathered?

TIEC 1-20 Referring to Appendix B, page 13, does the reference to “Distribution Circuit Rebuilds” that includes transmission structures refer to a Resiliency Measure in the SRP? If yes, please elaborate on the measure being referenced and clarify if the measure being referenced includes transmission structure spend.

The following requests pertain to the Direct Testimony of Nathan Brownell.

TIEC 1-21 Referring to page 21, line 15, through page 22, line 2:

- a. Can a capital project provide benefits for more than one type of purpose? If anything other than yes, please explain in detail.
- b. Can a capital project have more than one purpose? If anything other than yes, please explain in detail.
- c. List all the purposes that the CenterPoint capital accounting system provides when categorizing capital projects, among which resiliency event mitigation would be one of the purposes.
- d. In assigning a purpose to a capital project, does CenterPoint have formalized definitions and a process? If yes, please provide this standard or manual that contains this information, along with descriptions of where to look for this information. If no, please describe the informal process that CenterPoint uses to assign a purpose to a capital project.
- e. Does the CenterPoint capital accounting system allow a capital project to be categorized under more than one purpose as listed in subpart (c)? If yes, please describe how cost is assigned to purposes in this case.
- f. Describe how CenterPoint determined that the purpose of the Resiliency Measures in this SRP was to mitigate resiliency events.

- g. Do the BCA calculations for any Resiliency Measure include more than a de minimis and/or ancillary amount of monetized non-resiliency benefit? If yes, state the percentage of non-resiliency benefit for each Resiliency Measure for which Guidehouse determined a BCA and provide supporting workpapers showing how the percentages were calculated.

TIEC 1-22 Referring to page 31, lines 11-14:

- a. List the Resiliency Measures referenced.
- b. For each Resiliency Measure in subpart (a), list the cost, quantity, and voltage of wooden transmission structures being replaced, the total cost of which should equal \$1.468 billion.

TIEC 1-23 Referring to page 32, lines 2-4, please identify the responses in CenterPoint's first SRP that are being referenced here.

TIEC 1-24 Referring to page 35, lines 10-18:

- a. State the specific feedback that CenterPoint received from customers, communities, local officials, or state officials that was considered in CenterPoint's proposed transmission-related projects. Please provide detailed references and documentation and identify the specific Resiliency Measures.
- b. State the specific references in the Commission's report on Hurricane Beryl that were considered in CenterPoint's proposed transmission-related projects. Please provide detailed references and documentation and identify the specific Resiliency Measures.
- c. State the specific recommendations in PA Consulting's Hurricane Beryl after-action report that were considered in CenterPoint's proposed transmission-related projects. Please provide detailed references and documentation and identify the specific Resiliency Measures.

The following requests pertain to the Direct Testimony of Eugene L. Shlitz.

TIEC 1-25 Referring to page 1:

- a. Provide a table in "live" Excel format that states the change in frequency and magnitude of extreme weather events, by type, and by year, from now and extending out to cover the time horizon used to calculate the benefits used to quantify the benefits in the BCA.
- b. For each Resiliency Measure, provide the BCA results if extreme weather events did not increase in frequency and magnitude, but instead were held flat to current levels.

- TIEC 1-26** Referring to page 2:
- a. State the confidence interval for each measure that the BCA results will outweigh the costs over the life of the measure.
 - b. State the life used for each individual measure.
 - c. State the BCA formula and describe the calculation in detail.
 - d. State the formula to convert CMI to dollars and describe the calculation in detail.
 - e. In applying VOLL, was a single number used for all measures, customers, and event types? If no, provide all VOLLs used and describe how and where they were applied.
- TIEC 1-27** Referring to page 3:
- a. Provide an illustrative example calculation that demonstrates how to derive the benefit cost of each Resiliency Measure listed in the table using the capital cost, O&M cost, and BCA results. If the example calculation does not represent all Resiliency Measures in the table, please provide a calculation for each Resiliency Measure.
 - b. Provide an illustrative example calculation that demonstrates how to derive the CMI dollar benefits and System Restoration Cost benefits that totalize to the benefit cost calculated in subpart (a). If the example calculation does not represent all Resiliency Measures in the table, please provide a calculation for each Resiliency Measure.
- TIEC 1-28** Referring to page 12, please confirm that the Circuit Level Analysis was not applied to the transmission system. If not confirmed, please point to the information that explains how this analysis was applied to the transmission system.
- TIEC 1-29** Referring to page 22, in your opinion, does Good Utility Practice favor a project with a higher net customer benefit as compared to a project with a lower net customer benefit (all other considerations being equal)?
- TIEC 1-30** Referring to page 30, footnote 15, please elaborate on how the focus on costs and outage reduction measures over the three-year plan changes the results of the quantified net benefits compared to not having this focus.
- TIEC 1-31** Referring to page 31, for each qualitative benefit listed, explain how the VOLL utilized by Guidehouse does not already take the qualitative benefit into consideration.
- TIEC 1-32** Referring to page 34, please provide the unredacted version of the survey.

- TIEC 1-33** Please provide a corrected copy of the testimony that resolves the portions which state “Error! Reference source not found.”
- TIEC 1-34** Referring to page 50:
- a. Provide a copy of Figure ELS-6 in “live” Excel format inclusive of the raw data.
 - b. State the year that historical data ends and projected data begins.
 - c. Provide the source and link to the historical data used.
 - d. Does the historical data utilize any data smoothing, or is each year unadjusted?
 - e. Was this same data source relied upon to calculate BCAs?
- TIEC 1-35** Referring to Exhibit ELS-2, page 24, state whether the data in Figure 2-1 relied upon to inform the modeling of increased severity and frequency of extreme weather events that, in turn, was used in calculating the BCAs? If yes, please describe where and how it was used.
- TIEC 1-36** Referring to Exhibit ELS-2, page 59:
- a. Is the reference to using RCP8.5 referring to the Scenarios in Table 4-1? If not, please elaborate on what RCP8.5 means and the source of this information.
 - b. Does RCP8.5 result in the highest FWI results of the Scenarios in Table 4-1?
 - c. Why did Guidehouse choose this Scenario over other Scenarios in developing its FWI as illustrated in Figures 4-26 and 4-27?
- TIEC 1-37** Referring to Exhibit ELS-2, page 69:
- a. In applying VOLL to calculate BCAs for Resiliency Measures, was VOLL modified or adjusted from \$35,000 per MWh to account for differences such as Resiliency Measures, customer types and quantities by circuit, resiliency event types, regional cost-of-living, and resiliency event duration? If yes, provide all VOLLs used and describe how and where they were applied.
 - b. Describe how load growth was incorporated into the BCA analysis and used to calculate BCAs.
 - c. Provide the derivation of the 6 kW average customer load.
- TIEC 1-38** Referring to Exhibit ELS-2, page 100:

- a. Provide an illustrative example of how a severe wind event would translate into a 345 kV tower failure and then into BCA results including the use of the failure percentages.
- b. Provide the derivation of 729 MW of load at risk and average restoration time of 72 hours.

TIEC 1-39 Referring to Exhibit ELS-2, page 105, state the quantity of S90 towers that are wooden.

TIEC 1-40 Referring to Exhibit ELS-2, page 107:

- a. Provide the derivation of the 75% likelihood of load loss for a common mode, double contingency (N-2) failure on a tower line. Additionally, describe why this failure mode was selected.
- b. Provide the derivation of 729 MW of load at risk and average restoration time of 60 hours.
- c. Does this failure mode require two separate circuits to fail at the same time?
- d. Provide the past 10 years history of this failure mode for S90 towers during extreme weather, categorized by extreme weather event.

TIEC 1-41 Referring to Exhibit ELS-2, page 236, explain why there appears to be a significant change in wind speed along a single vertical and horizontal line at roughly 30 degrees north and 95 degrees west.

TIEC 1-42 Referring to Exhibit ELS-2, page 270-271, identify the locations of the 11 utilities who responded to the survey. Additionally, identify the locations of the 9 utilities in Figure A-2.

The following requests pertain to various witnesses as referenced therein.

TIEC 1-43 Referring to the Direct Testimony of Eric D. Easton at page 19, lines 12-21:

- a. Confirm that the model referenced was developed by CenterPoint employees and is fully CenterPoint owned. If anything other than yes, please describe the development and ownership in more detail.
- b. Provide a copy of the model and a narrative of how to run and adjust the model.
- c. For each variable input, list the variable name along with a description, the range of potential values, the value or values that CenterPoint used in modeling the data for this SRP, and evidence supporting the value or values selected.

- d. For each fixed variable, list the variable name along with a description, the range of potential values, the value CenterPoint used in modeling the data for this SRP, and evidence supporting the value selected.
- e. For each formula used in the model that uses a combination of fixed and variable inputs to calculate outputs, list the formula, describe how it is applied, and provide the equation.
- f. For each formula used outside the model and which either calculates an input variable or adjusts an output from the model, list the formula, describe how the formula is applied, and provide the equation.
- g. Provide a flowchart along with description that illustrates the model, and sub-models, and which illustrates the various functions and components, as well as how the various inputs and models are integrated to arrive at the outputs.

TIEC 1-44 Referring to the Direct Testimony of Ronald W. Bahr at page 12, lines 1-3:

- a. State the basis in the SRP Rule that supports the inclusion of investments to “maintain” resiliency.
- b. State the investment cost, by Resiliency Measure, that was included in the SRP in order to “maintain” CenterPoint’s system.

TIEC 1-45 Referring to the Direct Testimony of Muss Akram at page 12, line 11, through page 14, line 6:

- a. Provide the documentation supporting the claimed investment made by Florida Power & Light (FPL).
- b. Provide the claimed FPL investment data, but split between transmission and distribution.
- c. Does Figure MA-8 represent FPL’s estimate of storm recovery savings or CenterPoint’s estimate of FPL’s storm recovery savings? If it represents CenterPoint’s estimate, please explain why FPL’s estimate of storm recovery savings was not used.

TIEC 1-46 Referring the Direct Testimony of Jeff W. Garmon at page 8, provide Figure JG-1 and Figure JG-2 in “live” Excel format with further expansion to show functionalized capital and O&M expense by each of the 39 Resiliency Measures and 1 microgrid project.