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SOAH DOCKET NO. 473-19-3864
PUC DOCKET NO. 49421

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES	**§ § §**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

June 17, 2019

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CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
2019 CEHE RATE CASE
DOCKET 49421-SOAH DOCKET NO. 473-19-3864

SOLAR ENERGY INDUSTRIES ASSOCIATION
REQUEST NO.: SEIA02-01

QUESTION:

Please refer to CenterPoint's response to SEIA 1-12:

a. When a non-exporting system reduces the load profile of a distribution circuit, how is this load reduction different from a customer reducing their load through other means, such as through reducing their demand or turning off a high-powered piece of equipment?
b. Suppose a customer has a high-powered piece of equipment that they turn on and off. Can this this increase and reduction of load cause system level operational impacts circuit level transient effects?
c. The Company's response states: "Non-exporting DGs typically reduce the load profile of a distribution circuit and will cause system level operational impacts as the ratio of generation to load approaches 1." i) At what ratio of generation to load will these system-level operational impacts begin to manifest? ii) How many circuits does the Company have where the ratio of generation to load is greater than 0.8?
d. How many upgrades has the Company performed for the purpose of estimating or monitoring the status of DG systems? If any upgrades were performed, what does the Company do with the information from the DG system?
e. How many upgrades has the Company required DG system owners make for the purpose of estimating or monitoring the status of DG systems? If any upgrades were performed, what does the Company do with the information from the DG system?
f. How many voltage or frequency controllers has the Company installed specifically to stabilize system voltage and frequency issues caused by the installation of DG systems?
g. How many upgrades to equipment, such as wires, transformers, voltage regulators, protective devices, etc. have been installed to address thermal loading issues caused specifically from the load reduction of non-exporting DG systems on circuits with existing exporting DG systems?
h. How many upgrades to breakers or fuses have been performed due to the contribution of distribution grid fault current of DG systems?
i. How many neutral reactors and substation transfers have been installed or upgraded to ensure the maximum fault currents at the substation did not exceed the planning design criteria due to the installation of DG systems?
j. For items d) through i) above, would these issues typically be identified during the interconnection study process? If so, would the customer be responsible for the costs for equipment upgrades required to safely and reliably interconnect the DG system?
k. How many times has the Company re-evaluated the protection scheme coordination required to maintain safety and reliability of the system due to the installation of DG systems?
l. Can a reduction of load from other sources (such as demand response or shutting off a powerful piece of equipment) also increase the potential for transient over-voltage of circuits with high existing exporting DGs?

ANSWER:

In response to the RFI questions that refer back to SEIA 1-12, the following is provided:

a. When a load is reduced it does not supply any additional current during a fault on the power system. A non-exporting resource connected in parallel will both reduce the load and supply additional current during power system fault conditions. This additional source of power impacts existing protection systems and faults on the system will not clear until all sources of current are extinguished.

b. Customer load cycled on and off can cause transient effects that could impact other customers on the system. CEHE performs load interconnection studies to reduce the transient effects of

customer load cycling.

c.
   i. i) It is possible for system-level operational impacts to begin to manifest with generation to load ratios as low as 0.33.

   ii. ii) Based on 2018 minimum circuit loading data in CEHE distribution system, 20 circuits have the ratio of generation to **minimum circuit load** greater than 0.8. However, large generation on these circuits may have additional protection systems to limit system level operational impacts.

d. The Company has not performed any upgrades for the purpose of estimating or monitoring the status of DG systems. CEHE has a pilot program currently under evaluation in which a monitoring device is installed to provide Distribution Operators with situational awareness and DG monitoring.

e. The Company has not required DG system owners make upgrades for the purpose of estimating or monitoring the status of DG systems.

f. CEHE performs pre-interconnection analysis to reduce the impacts of system voltage and frequency issues that may be caused by the installation of DG systems. CEHE leverages this analysis to specify changes to DG system control schemes and provide alternative interconnection options. As a result, CEHE has not installed any voltage or frequency controllers.

g. As of today, CEHE has not made any equipment upgrades to address thermal loading issues caused specifically from DG systems performing load reduction on circuits with existing exporting DG systems.

h. As of today, CEHE has not made any upgrades to breakers or fuses due to the contribution of fault current. However, CEHE is currently evaluating 4 proposed inter-connection projects that could require fuse upgrades.

i. As of today, CEHE has not made any upgrades to breakers or fuses due to the contribution of fault current. However, CEHE is currently evaluating 2 locations that may require neutral reactor installations.

j. The issues stated in items f) through i) would typically be identified during the interconnection study process. DG customers would pay for the costs for equipment upgrades required to safely and reliably interconnect their DG systems, except items d) and e).

k. Protection scheme coordination is evaluated when performing pre-interconnection analysis in order to maintain safety and reliability of the system. Additional re-evaluation of the protection scheme coordination is performed as dictated by system changes.

l. Reduction of load from other sources could potentially result in transient over-voltage of circuits with high existing exporting DGs. However, CEHE requires all DGs operating in parallel to adhere to PUC Substantive Rules and CEHE specifications to mitigate these load cycling transients.

SPONSOR (PREPARER):
Dale Bodden (Dale Bodden)

RESPONSIVE DOCUMENTS:
None

CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of June 2019, a true and correct copy of the foregoing document was served on all parties of record in accordance with 16 Tex. Admin. Code § 22.74.