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

REBUTTAL TESTIMONY  
OF  
MARTIN W. NARENDORF JR.  
ON BEHALF OF  
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

June 2019



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| Exhibit R-MWN-1 | Responses to Requests for Information |
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**REBUTTAL TESTIMONY OF MARTIN NARENDORF JR.**

**I. INTRODUCTION**

**Q. PLEASE STATE YOUR NAME AND OCCUPATION.**

A. My name is Martin W. Narendorf Jr. I am employed by CenterPoint Energy Houston Electric, LLC (“CenterPoint Houston” or “the Company”) as Vice President of High Voltage Operations.

**Q. ARE YOU THE SAME MARTIN W. NARENDORF THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING?**

A. Yes.

**Q. WHAT IS THE PURPOSE AND SCOPE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?**

A. The purpose of my rebuttal testimony in this proceeding is to respond to intervenor positions challenging the prudence, reasonableness, and necessity of both the operations and maintenance (“O&M”) expenses incurred by my organization and the approximately \$3.0 billion in transmission, substation, and Major Underground capital investment placed in service from January 2010 through December 2018. My testimony reiterates the thorough approach CenterPoint Houston takes to ensuring capital is prudently spent and demonstrates that the capital disallowances proposed by the intervenors and Public Utility Commission of Texas (“PUC” or “Commission”) Staff should be rejected in their entirety. Specifically, I rebut the direct testimony of City of Houston witness Scott Norwood, and his suggested disallowance related to the Company’s Major Underground Rehabilitation Program. I also rebut Office of Public Utility Counsel witness Karl Nalepa’s challenges to four capital projects. In addition, I demonstrate why Staff witnesses

1 Tom Sweatman's and Blake P. Ianni's proposed disallowance of certain substation  
2 and transmission capital costs should be rejected. Finally, I will address  
3 Mr. Norwood's contention that the Company has not sufficiently supported its  
4 requested level of O&M expenses in FERC Account 560 and 570.

5 **II. SUMMARY OF INTERVENOR AND STAFF POSITIONS**

6 **Q. DO OTHER COMPANY WITNESSES ALSO RESPOND TO THE**  
7 **POSITIONS TAKEN BY MR. NORWOOD, MR. NALEPA, AND MR.**  
8 **SWEATMAN?**

9 A. Yes. While I address Mr. Norwood's proposed disallowance of the Major  
10 Underground Rehabilitation Program, Company witness Randal M. Pryor  
11 addresses Mr. Norwood's claim regarding the Underground Cable Assessment and  
12 Life Extension Program. Company witnesses Michelle M. Townsend and  
13 Kristie L. Colvin address Mr. Norwood's incorrect contention that CenterPoint  
14 Houston included "indirect corporate costs" in its prior Distribution Cost Recovery  
15 Factor ("DCRF") filings. With regard to Mr. Nalepa's five proposed adjustments  
16 related to capital projects, Ms. Colvin addresses why two of the capital projects are  
17 properly booked to plant in service based on the FERC Uniform System of  
18 Accounts. I address reasonableness and prudence of the remaining three capital  
19 projects identified by Mr. Nalepa. Finally, Mr. Pryor and Ms. Townsend also  
20 address the reasonableness of the test year O&M expense in the FERC accounts  
21 identified in Mr. Norwood's Table 3.

22 **Q. SHOULD ANY OF THE INTERVENOR POSITIONS DESCRIBED ABOVE**  
23 **BE ADOPTED BY THE COMMISSION?**

24 A. No. My testimony coupled with that of other CenterPoint Houston witnesses

1 clearly establishes that each of the capital projects challenged by Mr. Norwood,  
2 Mr. Nalepa, and Mr. Sweatman was prudently constructed and managed and that  
3 the cost associated with these capital projects was reasonable. These projects are  
4 necessary for system safety and reliability and, as such, the Company should be  
5 allowed to recover its costs associated with the investment.

6 **III. RESPONSE TO INTERVENOR CAPITAL INVESTMENT ARGUMENTS**

7 **A. Description of CenterPoint Houston's Asset Investment Strategy**  
8 **("AIS") Tool**

9 **Q. DO YOU HAVE ANY GENERAL COMMENTS REGARDING MR.**  
10 **NORWOOD'S PROPOSAL TO REMOVE CAPITAL INVESTMENT**  
11 **ASSOCIATED WITH THE COMPANY'S UNDERGROUND CABLE LIFE**  
12 **EXTENSION PROGRAM AND MAJOR UNDERGROUND**  
13 **REHABILITATION PROGRAM?<sup>1</sup>**

14 **A.** Yes. Mr. Norwood's proposal appears to be the result of his misunderstanding of  
15 how the Company uses its AIS tool. He also fails to recognize the substantial  
16 benefits provided by these programs.

17 **Q. MR. NORWOOD'S TESTIMONY SUGGESTS THAT A LOW AIS SCORE**  
18 **SUPPORTS A CONCLUSION THAT A CAPITAL PROJECT WAS NOT**  
19 **PRUDENT. DO YOU AGREE?**

20 **A.** No. Mr. Norwood's conclusion incorrectly assumes that CenterPoint Houston  
21 relies on the AIS tool to evaluate the prudence of undertaking a capital project. This  
22 is incorrect.

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<sup>1</sup> Direct Testimony of Scott Norwood at 14-17.

1    **Q.     WHAT IS THE PURPOSE OF THE AIS TOOL?**

2    A.     AIS is an evaluation tool that was developed to help the Company understand the  
3           relative value of select programs and projects. It does that by determining a  
4           project's benefit (value) by calculating the load that is at risk (expressed in Mwh)  
5           if the project is not executed. The risk calculation in the tool does not represent any  
6           monetary benefit to the customer. Rather, it is a "non-monetized" benefit/cost  
7           calculation in that "monetary" benefits are not calculated for a project in  
8           determining its value. In addition, not all capital projects are evaluated using the  
9           AIS tool. For these reasons, the AIS tool should not be misconstrued as a tool  
10          utilized by the Company to justify capital investments.

11   **Q.     HOW IS THE AIS TOOL USED BY THE COMPANY?**

12   A.     AIS is a tool that is simply used to assist in the *optimization* of the Company's  
13          annual capital portfolio. All of the capital projects entered into the AIS tool are  
14          developed, analyzed, and justified apart from the AIS process. Basic project  
15          information for the Project Evaluation Forms ("PEFs") is developed prior to input  
16          into the AIS tool. Cost information and operational benefits, as well as design or  
17          reliability criteria violations that may drive the need for the projects are inputs into  
18          the AIS tool. In fact, the AIS tool does not optimize all capital projects but only a  
19          select amount. In sum, relying on the output of the tool for project justification as  
20          Mr. Norwood is not appropriate and is not a proper use of the tool's output.

1   **Q.   MR. NORWOOD ALSO SUGGESTS THAT, IN ORDER TO**  
2       **DEMONSTRATE THAT A CAPITAL PROJECT IS PRUDENT, THE**  
3       **UTILITY MUST SHOW THAT IT REPRESENTS MONETARY**  
4       **(ECONOMIC) BENEFIT TO CUSTOMERS.<sup>2</sup> HOW DO YOU RESPOND?**

5   A.   CenterPoint Houston regularly invests capital in order to continue to provide safe  
6       and reliable electric service to its customers. While these capital investments  
7       cannot readily be linked to direct economic benefit to specific customers, in  
8       general, the provision of safe and reliable electric service to CenterPoint Houston's  
9       customers provides economic benefit to all customers depending on the provision  
10      of safe and reliable electric service to their residences, businesses and enterprises.  
11      This is the basic test of prudent capital investment that the investment is reasonable  
12      and necessary to allow the supply of safe and reliable delivery of electric service to  
13      customers.

14   **Q.   IS MR. NORWOOD'S UNDERSTANDING OF THE PEFS REFERENCED**  
15       **IN HIS TESTIMONY CORRECT?**

16   A.   No. While AIS does generate the PEF as part of its reports, the data is based on  
17       input by a project sponsor. AIS does not automatically retrieve input from any  
18       other sources or systems other than project sponsors. The PEFs are simply the  
19       compilation of sponsor input into a standard template that is then used to compare  
20       the relative value of each project.

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<sup>2</sup> Direct Testimony of Scott Norwood at 16-17.

1           **B.      Capital Program Prudence**

2   **Q.   MR. NORWOOD CLAIMS THAT CENTERPOINT HOUSTON HAS NOT**  
3       **PROVIDED SUFFICIENT DOCUMENTATION TO JUSTIFY RECOVERY**  
4       **OF THE INVESTMENT ASSOCIATED WITH THE MAJOR**  
5       **UNDERGROUND REHABILITATION PROGRAM.<sup>3</sup> DO YOU AGREE?**

6   A.   No, I do not. CenterPoint Houston's capital investment in the Major Underground  
7       Rehabilitation Program is supported by the Company's books and records and the  
8       capital project reports included in the Company's Rate Filing Package in  
9       WP RMP-2. This program comprises approximately \$57 million of the \$3 billion  
10      in High Voltage Operations capital investment that the Company seeks to recover  
11      in this case. It is both impractical and unrealistic to expect the Company to provide  
12      detailed information on each capital program or project that comprises this total.  
13      More importantly, Mr. Norwood offers no challenge to the reasonableness and  
14      necessity of the program nor does he argue that the costs associated with the Major  
15      Underground Rehabilitation Program were imprudent. He simply complains that  
16      more information should have been provided.

17 **Q.   IF MR. NORWOOD DESIRED ADDITIONAL INFORMATION**  
18 **REGARDING THE UNDERGROUND CABLE REHABILITATION**  
19 **PROGRAM, COULD HE HAVE REQUESTED THIS INFORMATION AS**  
20 **PART OF THE DISCOVERY PROCESS?**

21 A.   Yes. However, no such request was made. In fact, although the Company  
22      responded to more than 1,300 requests for information, including subparts,

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<sup>3</sup> Direct Testimony of Scott Norwood at 14.

1 throughout the discovery process, not a single request sought information regarding  
2 CenterPoint Houston's Major Underground Rehabilitation Program.

3 **Q. PLEASE DESCRIBE THE MAJOR UNDERGROUND REHABILITATION**  
4 **PROGRAM.**

5 A. The Major Underground Rehabilitation Program has been in place at the Company  
6 for over thirty years. Anytime there is a failure or operation of underground cable  
7 or equipment, the Company tests the remaining cable and equipment in the area. If  
8 the testing indicates any additional problems or causes additional failures, the cable  
9 and equipment are proactively replaced. Customers served by the Major  
10 Underground infrastructure have redundancy in their service so they are switched  
11 to another feed when there is a fault or operation, but that fault or operation is  
12 typically an indication that the assets are beginning to fail, which is why the  
13 Company chooses to perform testing at that point.

14 **Q. WHY IS THE ABILITY TO IDENTIFY POTENTIAL MAJOR**  
15 **UNDERGROUND CABLE AND EQUIPMENT FAILURES BEFORE THEY**  
16 **OCCUR IMPORTANT TO CENTERPOINT HOUSTON?**

17 A. Unlike overhead transmission and distribution facilities, the underground cable  
18 system is unique and does not lend itself to routine testing and maintenance because  
19 of the inability to visually inspect the cables and associated equipment which are  
20 installed below ground. However, the underground assets are well protected from  
21 interference from external elements and are able to maintain cooler temperatures  
22 which helps extend the useful life of the cable. Although customers have enjoyed  
23 a reliability benefit of underground service, this reliability is threatened by aging

1 infrastructure that is difficult to access for quick repair and service restoration. For  
2 these reasons, the Company employs a proactive approach to Major Underground  
3 Rehabilitation.

4 **Q. PLEASE DESCRIBE THE CUSTOMERS SERVED BY THE MAJOR**  
5 **UNDERGROUND SYSTEM.**

6 A. The Major Underground system serves the majority of the central business center  
7 in downtown Houston, the Texas Medical Center, and many other areas of critical  
8 and highly important businesses and commercial customers. These customers  
9 depend on continuous supply of safe and reliable electric service to their building  
10 facilities to conduct business in the Houston area and provide a multitude of  
11 services to Houston residents and businesses. The proactive inspection and  
12 maintenance of the Major Underground facilities that serve these customers is vital  
13 to the continuous supply of reliable power to these customers. Through this  
14 proactive maintenance program, issues with Major Underground cable and  
15 equipment can be determined proactively and resolved preventing unplanned  
16 outages to these customers. Additionally, if the assets are allowed to run to failure,  
17 the chance of violent failures with environmental and safety repercussions  
18 increases.

19 **Q. ARE MAJOR UNDERGROUND CABLE AND EQUIPMENT FAILURES**  
20 **EASILY REPAIRED?**

21 A. Failures in the underground three phase network system require a significant effort  
22 and response to restore. Initially crews must determine the exact location of the  
23 fault and isolate that faulted area from the rest of the cable system. Considering

1       that all this equipment is located underground, this fault location effort can be  
2       difficult to perform and can take numerous hours before the location of the faulted  
3       cable or equipment is identified. Second, the crews must isolate the faulted area of  
4       the underground system for restoration work that needs to be conducted to repair  
5       the faulted section of the system. If possible, customers outside of the isolated  
6       faulted area are restored as rapidly as possible. Next, the crews must safely and  
7       efficiently make the repairs necessary to restore the faulted section of the cable  
8       system. This may require replacing faulted cable and may require the replacement  
9       of damaged equipment and relay controls and other devices. The last step of the  
10      sequence is to make sure all crews have completed work and are clear of the isolated  
11      section and obtain a release to the switching order that provided the isolation of the  
12      faulted section and reenergize and restore to normal operations the area where the  
13      fault occurred. In many cases, this step to restore the system to normal operations  
14      can cause additional necessary switching outages to customers as CenterPoint  
15      Houston restores the system back to normal condition. By proactively replacing  
16      damaged or faulty equipment that is identified through proactive inspections of the  
17      underground system, these lengthy outages can be avoided for our customers  
18      providing a higher level of reliable service.

19   **Q.   WHAT BENEFIT DO CUSTOMERS RECEIVE FROM THE MAJOR**  
20   **UNDERGROUND REHABILITATION PROGRAM?**

21   A.   Customers receive enhanced reliability because the program allows for the  
22       proactive replacement of cable and other underground equipment. Unscheduled  
23       outages due to failures can be avoided and the proactive replacements can often be  
24       completed without a customer outage. Customers also see a cost benefit because

1 the costs associated with violent failures of Major Underground equipment can be  
2 significant for both the Company and the customer. As I mentioned earlier,  
3 customers served by the major underground infrastructure include the Houston  
4 Medical Center, Galveston Medical Center, parts of the Galleria, Bush  
5 Intercontinental Airport, and all downtown Houston. Any outage experienced by  
6 these customers could present a significant impact to hundreds, if not thousands, of  
7 individuals living, working or receiving medical treatment. Moreover, proactive  
8 maintenance of these assets allows the Company to perform work during scheduled  
9 outages to mitigate or minimize impacts to customers that are particularly sensitive  
10 to service interruptions.

11 **Q. MR. NORWOOD SUGGESTS THAT IN ORDER TO JUSTIFY**  
12 **RECOVERY OF THE COSTS ASSOCIATED WITH THE MAJOR**  
13 **UNDERGROUND REHABILITATION PROGRAM, THE COMPANY**  
14 **MUST DEMONSTRATE A MATERIAL IMPROVEMENT IN ITS**  
15 **EXISTING LEVEL OF SERVICE RELIABILITY.<sup>4</sup> DO YOU AGREE?**

16 **A.** No. As with the Company's Underground Cable Life Extension Program, it is not  
17 possible to calculate the direct benefit to SAIDI for customer reliability of projects  
18 or programs that are proactive and predictive in nature. Proactive work resolves a  
19 problem before the problem occurs—the Major Underground cable or equipment  
20 does not fail, the underground cable doesn't fault—therefore, no service  
21 interruption from which to calculate reliability metrics such as SAIDI has occurred,  
22 and no customers have unnecessarily experienced outages due to equipment that

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<sup>4</sup> Direct Testimony of Scott Norwood at 17-18.

1 has been allowed to “run to failure.” However, there is certainly a positive and  
 2 direct reliability impact for these and similar proactive programs, such as proactive  
 3 pole replacement, it just cannot be *directly* calculated. The Company for some time  
 4 now has committed to understanding its system and making appropriate proactive  
 5 replacements. The Company should not forgo proactive inspection and  
 6 replacement of equipment simply because it can’t “directly” calculate the SAIDI  
 7 impact.

8 **Q. IS THE COMPANY’S MAJOR UNDERGROUND REHABILITATION**  
 9 **PROGRAM REASONABLE AND NECESSARY?**

10 A. Yes. The Major Underground Rehabilitation Program has been in place at the  
 11 Company for over thirty years. Customers receive enhanced reliability because the  
 12 program allows for the proactive replacement of cable and other underground  
 13 equipment. Unscheduled outages due to failures can be avoided and the proactive  
 14 replacements can often be completed without a customer outage. This is especially  
 15 important given that the Major Underground system serves the majority of the  
 16 central business center in downtown Houston, the Texas Medical Center, and many  
 17 other areas of critical and highly important businesses and commercial customers.

18 **C. Capital Project Prudence**

19 **Q. HOW DO YOU RESPOND TO MR. IANNI’S RECOMMENDATION THAT**  
 20 **COSTS ASSOCIATED WITH LINE CLEARANCE PROJECT HLP/00/1055**  
 21 **BE CLASSIFIED AS O&M INSTEAD OF CAPITAL?**

22 A. As stated in the Company’s response to PUC RFI No. 6-22, which is attached to  
 23 my testimony as Exhibit R-MWN-1, the work associated with this project includes  
 24 modifications to, not maintenance of, existing transmission and distribution circuits

1 which includes the replacement of retirement units such as poles, towers,  
2 conductors, and other capital facilities. These clearance issues develop over time  
3 and it is necessary to correct them to meet NESC requirements. Specific in-service  
4 dates of the transmission and distribution lines that needed to be modified is  
5 immaterial to the nature of the work being performed.

6 **Q. HOW DO YOU RESPOND TO MR. NALEPA'S RECOMMENDATION**  
7 **THAT TWO SUBSTATION PROJECTS (HLP/00/0011 AND HLP/00/0012)**  
8 **SHOULD HAVE BEEN EXPENSED RATHER THAN CAPITALIZED?<sup>5</sup>**

9 A. Mr. Nalepa incorrectly categorizes these two projects as involving activities  
10 necessary to maintain a capital asset. In reality, these projects involved the  
11 replacement of capital equipment or structures on a scheduled or unscheduled basis.

12 The larger of these two projects, HLP/00/0011, includes capital labor and  
13 equipment costs incurred while replacing failed equipment on an unscheduled  
14 basis. Types of equipment included in this category are breakers, micro-processor  
15 relays, power line carrier systems, SCADA sets, disconnect switches, and other  
16 essential substation capital equipment that has failed.

17 The second project, HLP/00/0012, deals with the scheduled replacement of  
18 equipment and structures. Types of equipment replaced in this category includes  
19 battery banks, battery chargers, addition or upgrade of carrier systems, varmint  
20 control fence installation, relay scheme upgrades, and SCADA replacements. The  
21 work included in this project is retirement unit replacement work, not repair of  
22 existing equipment, which is why it is properly capitalized and not expensed as

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<sup>5</sup> Direct Testimony of Karl Nalepa at 36-37.

1 Mr. Nalepa suggests. Ms. Colvin further supports the Company's accounting  
2 treatment of these two projects in her rebuttal testimony.

3 **Q. SHOULD LANGUAGE IN THE PROJECT DESCRIPTION BE A REASON**  
4 **TO DISALLOW PROPERLY RECORDED CAPITAL INVESTMENT?**

5 A. No. The language used for the project descriptions is intended to provide a general  
6 description of the work performed—no more, no less. The project description is  
7 not an indicator used to determine if a project is treated as capital or O&M.  
8 Whether the project should be capitalized is driven by the FERC USOA, which, as  
9 Ms. Colvin testifies, the Company is required to follow. Mr. Nalepa does not  
10 dispute that the projects at issue are required to be capitalized by the FERC USOA.  
11 In fact, his testimony ignores those instructions altogether.

12 **Q. HOW DO YOU RESPOND TO MR. NALEPA'S ASSERTION THAT**  
13 **FOUNDATION REPLACEMENTS DUE TO ALKALI-SILICA REACTION**  
14 **SHOULD BE REMOVED FROM PLANT IN SERVICE?<sup>6</sup>**

15 A. Mr. Nalepa wrongly states that the project costs associated with foundation  
16 replacements due to the presence of Alkali-Silica Reaction ("ASR") in the  
17 foundation were incurred because of errors in the original installation of these  
18 foundations. CenterPoint Houston made no errors that caused the ASR issue.  
19 Rather, ASR is a condition that exists due to the concrete materials, not the method  
20 of installation. When the cracking issues associated with ASR were first identified,  
21 CenterPoint Houston implemented actions to mitigate the impacts to Company  
22 facilities. Once CenterPoint Houston was aware of the ASR issue, changes were

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<sup>6</sup> Direct Testimony of Karl Nalepa at 38.

1 made to the concrete specification to reduce the risk of this occurring in newly  
2 poured concrete. Additionally, CenterPoint Houston proactively took actions to  
3 replace foundations that are showing effects of ASR. In short, it is not reasonable  
4 for Mr. Nalepa to expect that the Company could have or should have been aware  
5 of the issues associated with ASR at the time the original foundations were laid.  
6 Mr. Nalepa also does not challenge the prudence of the corrective actions taken by  
7 CenterPoint Houston to mitigate the impacts of ASR on the Company's facilities  
8 and these capital costs should be recovered through rates.

9 **Q. ARE MR. NALEPA'S AND MR. SWEATMAN'S RECOMMENDATIONS**  
10 **REGARDING CAPITAL ADJUSTMENTS FOR THE SELECTED**  
11 **TRANSMISSION AND SUBSTATION PROJECTS APPROPRIATE?**

12 A. No. CenterPoint Houston should be allowed to recover the full amount spent on  
13 these projects. As I discuss below, both Mr. Nalepa and Mr. Sweatman  
14 inappropriately rely on the initial estimates for the subject projects as support for  
15 their recommended disallowances. In addition, Mr. Nalepa and Mr. Sweatman  
16 selectively ignore information provided during discovery that supports the full  
17 recovery of the investments made in the challenged capital projects. During the  
18 discovery phase of this proceeding, the Company responded to numerous detailed  
19 questions regarding transmission and substation projects. The Company has  
20 provided project lists, estimated costs, actual costs, and explanations of any  
21 variances. This documentation supports the reasonableness of the actual costs  
22 incurred for these capital projects and demonstrates that CenterPoint Houston's

1 variance percentage between its estimates and final project costs evidences the  
2 importance CenterPoint Houston places on capital project cost control.

3 **Q. PLEASE ADDRESS THE REASONABLENESS OF THE FINAL COSTS**  
4 **ASSOCIATED WITH THE ALEXANDER ISLAND AND LA MARQUE**  
5 **SUBSTATION PROJECTS.**

6 A. The Company's response to PUC RFI No. 6-24, which is attached to my rebuttal  
7 testimony as Exhibit R-MWN-1 explains the reasons for the variances for the  
8 Alexander Island and La Marque projects.

9 While the explanation for Alexander Island did include discussion of  
10 construction errors, this is not the sole reason for the difference in the initial  
11 estimate and final project cost. As you can see in Exhibit R-MWN-2, the Company  
12 filed an updated final cost estimate of \$536k prior to construction. This final cost  
13 estimate was developed after detailed engineering and construction input and  
14 reflects an expectation that the project would cost more than we initially estimated  
15 due to scope changes. During construction, two flat tap structure foundations were  
16 staked in the wrong direction, requiring rework. While some material had to be  
17 reordered, the Company was able to chip out stub angles and reuse them on the new  
18 foundations, saving as much money as possible on the material reorder.

19 The Company's discussion of LaMarque substation also included reference  
20 to a material error but again, construction errors were not solely responsible for the  
21 variance in cost. The original estimate submitted to the Commission provided for  
22 a total of four structures but after detailed engineering, seven structures were  
23 ultimately required. During construction, one structure had to be moved and rotated

1 to avoid underground utilities. One structure was staked in close proximity to the  
2 next, which required one foundation to be rebuilt. Again, the Company saved and  
3 reused as much material as possible to minimize the financial impacts of any errors.

4 **Q. YOU STATED EARLIER THAT THE COMPANY'S VARIANCE RATE**  
5 **ON CAPITAL PROJECTS DEMONSTRATES THE ATTENTION PAID TO**  
6 **PROJECT COST CONTROL. PLEASE EXPLAIN.**

7 A. The Company's response to PUC 1-38, which is attached to my rebuttal testimony  
8 as Exhibit R-MWN-1, lists all new transmission lines that were filed on the  
9 Monthly Construction Progress Report ("MCPR") between January 1, 2010 and  
10 December 31, 2018. Please refer to Exhibit R-MWN-2 for a modification of the  
11 Company's response to PUC RFI No. 1-38. If all customer funded projects are  
12 removed from the response to PUC RFI No. 1-38, the remaining projects for which  
13 the Company is seeking recovery evidence an average cost variance of  
14 approximately -8.5%. For the sum of these projects, the total amount initially  
15 estimated was approximately \$57.3 million and the total actual costs was  
16 approximately \$53.4 million. These numbers speak to the conscientious approach  
17 CenterPoint Houston takes toward managing its capital spend on transmission  
18 projects.

19 **Q. HOW DOES THE COMPANY DEVELOP AND REPORT TRANSMISSION**  
20 **PROJECT ESTIMATES?**

21 A. MCPR instructions provided on the Commission's website<sup>7</sup> require updated  
22 estimates at the start of construction for CCN projects, but not for non-CCN

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<sup>7</sup> [https://www.puc.texas.gov/industry/electric/forms/transconsrt/MCPR\\_Instructions.pdf](https://www.puc.texas.gov/industry/electric/forms/transconsrt/MCPR_Instructions.pdf).

1 projects. The Initial Estimated Project Costs for both CCN and non-CCN projects  
2 filed as part of the MCPR are developed prior to detailed engineering or  
3 construction analysis. They are also used internally for project approval and  
4 budgeting purposes. The estimates are based on very preliminary design without  
5 any geotechnical or subsurface engineering data or right of way research and very  
6 limited construction input, so they rely heavily on assumptions. After the Company  
7 has been able to secure right of way access and conduct soil analysis, detailed  
8 engineering is completed and the designs are sent to construction for detailed  
9 estimates. While this Final Estimated Project Cost is still an estimate, it is created  
10 with more detailed information than the initial estimate. The MCPR allows for  
11 updated estimates to be filed as the project progresses, and the Company makes  
12 every effort to update these estimates as project specifics change even on non-CCN  
13 projects where it is not a requirement.

14 **Q. HAVE MR. NALEPA AND MR. SWEATMAN RELIED ON INITIAL**  
15 **PROJECT ESTIMATES RATHER THAN FINAL PROJECT ESTIMATES**  
16 **TO SUPPORT THEIR POSITIONS?**

17 A. Yes. In fact, Mr. Sweatman suggests that the recovery of capital project costs  
18 should be capped at no more than 10% of the initial cost estimate.

19 **Q. IS THIS REASONABLE?**

20 A. No. As I explained, the Initial Estimated Project Costs rely heavily on assumptions  
21 and are prepared and developed prior to detailed engineering or construction  
22 analysis. For this reason, if any comparison is to be drawn between estimates and

1 the final actual cost of a capital project, it should be based on the Final Estimated  
2 Project Cost.

3 **Q. WHY DOES THE COMPANY FILE PROJECTS WITH INITIAL**  
4 **PROJECT ESTIMATES INSTEAD OF WAITING FOR FINAL**  
5 **ESTIMATES?**

6 A. Transmission projects filed on the MCPR must be approved prior to the start of  
7 construction. These projects can be administratively approved if no comments are  
8 received within 45 days. CenterPoint Houston balances several factors while  
9 planning for transmission projects including internal budgeting and resource  
10 scheduling, ERCOT outage restrictions, and customer outage coordination.  
11 CenterPoint Houston endeavors to file projects as early as practicable to allow  
12 ample time for the review and approval process while also providing the flexibility  
13 to execute projects at the most fitting time. CenterPoint Houston's Final  
14 Construction Reports compare the final actual cost to the final estimate, rather than  
15 the initial estimate. The Company uses the reporting tools available to keep parties  
16 updated on changing project information, including cost and schedule, and reviews  
17 final project information during the closeout process to gather lessons learned and  
18 apply them to continuous improvement of capital project execution.

19 **Q. HOW DOES THE COMPANY DEVELOP SUBSTATION ESTIMATES**  
20 **AND WHY MIGHT THEY DIFFER FROM ACTUAL SUBSTATION**  
21 **COSTS?**

22 A. For all substations, the estimated cost is usually made at least a year and a half in  
23 advance of construction. Estimates are based on projected costs, rule of thumb

1 guidelines, and a preliminary understanding of actual conditions, including  
 2 environmental conditions, and project scope, before the work order is prepared.  
 3 These estimates are used for “planning purposes.” The Engineering Project  
 4 Justification and Construction Summaries for distribution substations,  
 5 Exhibit DB-5 in Dale Bodden’s direct testimony, are planning documents and  
 6 reflect planning estimates. As such, there will be a difference between the  
 7 estimated cost and the actual cost.

8 **Q. DID CENTERPOINT HOUSTON PROVIDE INFORMATION THAT**  
 9 **RECONCILED THE ESTIMATED AND ACTUAL COSTS OF**  
 10 **SUBSTATION PROJECTS IN RESPONSE TO DISCOVERY?**

11 A. Yes. The actual costs of these projects were provided in response to PUC RFI  
 12 No. 1-39, and a reconciliation between the estimated costs of several distribution  
 13 substations in Ms. Bodden’s direct testimony Exhibit DB-5 and the actual costs  
 14 shown in PUC RFI No. 1-39 was provided in response to PUC RFI No. 5-8. Both  
 15 of these RFI response are provided in Exhibit R-MWN-1. The purpose of this  
 16 reconciliation was to provide an “apples to apples” comparison of the cost of the  
 17 substation, inside the substation fence.

1   **Q.   MR. SWEATMAN ARGUES THAT 10-15% IS A REASONABLE**  
2       **EXPECTATION FOR CONTINGENCY OR COST VARIANCE IN A**  
3       **TRANSMISSION OR SUBSTATION PROJECT.<sup>8</sup>   HOW DO YOU**  
4       **RESPOND?**

5   A.   I would generally agree if Mr. Sweatman based his 10-15% contingency on  
6       CenterPoint Houston's final cost estimates, rather than the Company's initial cost  
7       estimates. I would also point out that any utility, including CenterPoint Houston  
8       should have the opportunity to rebut a 10% contingency cap on cost recovery if the  
9       utility presents well-substantiated reasons for the overrun.

10   **Q.   DOES MR. SWEATMAN AGREE?**

11   A.   I believe that he does. Mr. Sweatman testifies on page 6 of his testimony that it is  
12       reasonable for the final cost of projects to differ from the estimate. He goes on to  
13       recommend that cost overruns be limited to 10% of the estimate "absent a well-  
14       substantiated justification."

15   **Q.   HAS CENTERPOINT HOUSTON PROVIDED WELL-SUBSTANTIATED**  
16       **JUSTIFICATIONS FOR ALL CAPITAL PROJECTS CHALLENGED BY**  
17       **MR. SWEATMAN?**

18   A.   Yes. The information provided in my direct and rebuttal testimonies, the direct  
19       testimony of Ms. Bodden, and CenterPoint Houston's responses to PUC RFI  
20       Nos. 1-37, 1-38, 1-40, 6-24, 11-1 and 11-2, which are included as  
21       Exhibit R-MWN-1 to my rebuttal testimony, provide ample justification to explain  
22       the reasonableness and necessity of any cost overrun of 10% or higher.

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<sup>8</sup> Direct Testimony of Tom Sweatman at 5-6.

1   **Q.   PLEASE   SUMMARIZE   THE   COMPANY’S   EVIDENCE**  
 2       **DEMONSTRATING THAT THE COSTS ASSOCIATED WITH THE**  
 3       **CAPITAL PROJECTS CHALLENGED BY MR. SWEATMAN WERE**  
 4       **REASONABLE, NECESSARY, AND PRUDENTLY INCURRED.**

5   **A.**   Below is a detailed response explaining the justification for the costs associated  
 6       with each of the following capital projects identified in Mr. Sweatman’s direct  
 7       testimony. I have discussed previously in this testimony why Mr. Sweatman’s  
 8       conclusions regarding the Alexander Island and LaMarque substation costs are  
 9       misplaced.

10           1. **Sandy Point Substation:** As Mr. Sweatman states on page 10 of his  
 11       testimony, the Company identified the Sandy Point Substation project twice  
 12       because only transmission work is filed on the MCPR. Depending on the nature of  
 13       the RFI, the Company would have provided either a transmission-only or  
 14       substation-only response. Mr. Sweatman offers no factual support for his opinion  
 15       that better management and oversight should have been able to compensate for the  
 16       extra work required due to the substation site changing. In reality, a change in  
 17       substation siting can directly impact the cost of a transmission project because the  
 18       route of the transmission line needed to interconnect the substation changes and  
 19       essentially becomes a different project. Depending on when this change or other  
 20       changes occur, it may be necessary to build temporary bypass to meet the project  
 21       schedule and/or avoid long-term outages. Mr. Sweatman’s statement that changes  
 22       to this project went unnoticed is also not accurate. As I explained in my direct  
 23       testimony, the Company has well-established cost control processes in place to

1 monitor and ensure the reasonableness and necessity of costs as a project progress  
2 from start to finish. Ultimately, the project is necessary to serve load and the cost  
3 was not unreasonable, simply different than what we initially expected.

4       **2. Dow Substation:** To be clear, CenterPoint Houston has not included  
5 costs associated with this project in its rate base. This project was a customer  
6 funded project as confirmed in the Company's response to PUC RFI No. 6-24,  
7 which is included as Exhibit R-MWN-1 to my rebuttal testimony. For this reason,  
8 Mr. Sweatman's proposed adjustment for the Dow Substation should be rejected.

9       **3. Flewellen to Fort Bend:** PUC RFI No. 6-24(c) asks for information  
10 regarding "Flewellen to Rosenberg" with a cost variance of 49%. The response the  
11 Company provided for "Flewellen to Rosenberg" is the proper response for the  
12 project in question – "Flewellen to Fort Bend." As stated in the Company's  
13 response to PUC RFI No. 6-24, this project occurred in parallel to a substation  
14 upgrade project, converting 69kV circuits and substation to 138kV. Since the initial  
15 estimates do not include detail design plans or construction input, the additional  
16 coordination that was needed to ensure continuity of service was not fully budgeted.  
17 These costs were prudently spent and necessary for the scope of the project even  
18 though they were not accounted for in the initial estimate. Again, this demonstrates  
19 the reasonableness of budget updates as more information becomes available.

20       **4. Fort Bend to Rosenberg:** The primary reason for cost variance on this  
21 project was the change in line routing due to ROW constraints which necessitated  
22 additional bypass work and construction crew mobilization. While Mr. Sweatman  
23 opines that better management and oversight could have identified this issue, the

1 fact is that easement and land right research and negotiations cannot be finalized  
2 prior to the route selection process. From a practical perspective, there is inherent  
3 ROW risk associated with every project and it is not possible to identify all issues  
4 in advance of project initiation. When presented with difficult land right  
5 circumstances, the Company does its best to complete important project work  
6 within the planned budget and timeframe while ensuring continuity of service for  
7 customers and operating the grid safely and effectively. In this case, that meant  
8 building additional bypass and making construction crews available for other  
9 important jobs.

10 5. **W.A. Parrish Substation:** This project had a cost variance of  
11 approximately 10.7% from its initial budget. For this project, the Company filed  
12 an updated estimate of \$446,000. When comparing the final actual cost to the final  
13 estimate, the project actually came in 5.7% *under* budget. Please see  
14 Exhibit R-MWN-2 for a list of projects provided in response to PUC RFI No. 1-38  
15 and any associated updated estimates.

16 6. **Jones Creek:** As Mr. Sweatman states, the Company responded with a  
17 thorough explanation of cost increases for the Jones Creek Project in PUC RFI  
18 No. 11-2, attached as Exhibit R-MWN-1. The response included discussion of a  
19 raised distribution site and Mr. Sweatman asserts that the Company did not address  
20 the need for this substation. To be clear, the Company has not yet constructed the  
21 distribution substation at the Jones Creek site, but the need was anticipated at the  
22 time so preliminary site work was performed. The Jones Creek project had many  
23 scope changes throughout the project that caused costs to increase. CenterPoint

1 Houston has internal governance procedures that required the project cost variance  
2 to be approved by the Executive Committee. The presentation used for that  
3 approval is attached as Exhibit R-MWN-3.

4           **7. Springwoods:** Mr. Sweatman states that the Company has indicated a  
5 15.8% cost overrun for the transmission construction portion of Springwoods  
6 substation, which is incorrect. As stated in the Company's response to PUC RFI  
7 No. 6-24, which is attached as Exhibit R-MWN-1, the transmission-only portion of  
8 this project had a -10% difference, or a 10% underspend on transmission work. As  
9 stated in the Company's response to PUC RFI No. 5-8, the initial estimated cost for  
10 the substation-only portion of Springwoods was \$10.6 million and the actual cost  
11 was approximately \$11.8 million. Cost variance for the construction of  
12 Springwoods substation inside the fence was primarily driven by increased site  
13 improvement costs for vegetation clearing and additional dirt backfill quantities  
14 (\$800,000) and unplanned wire-wall security fence (\$300,000), for a total of  
15 \$1,100,000 which was not included in the initial estimate.

16           **8. Tanner:** Mr. Sweatman states that the Company has indicated a 15.8%  
17 cost overrun for the transmission construction portion of Tanner substation, which  
18 is incorrect. As stated in the Company's response to PUC RFI No. 6-24, the  
19 transmission-only portion of this project had a -10.5% difference, or a 10.5%  
20 *underspend* on transmission work. As stated in the Company's response to PUC  
21 RFI No. 5-8, the estimated cost for the substation-only portion of Tanner was  
22 \$13,334,667 and the actual cost was \$11,655,667, representing a -12.6%  
23 underspend. The estimated costs included site improvements for a transmission

1 laydown yard that was not built on the backside of the site and the removal of the  
2 mulch yard which was no longer required because the owner became responsible  
3 for this removal (minus \$2,600,000). The estimated cost did not include site  
4 security (\$250,000), additional construction and commissioning resources to meet  
5 the schedule (\$150,000), and the increased cost for the substation power  
6 transformers (\$430,000).

7           **9. Sandy Point:** The Company's response to PUC RFI No. 6-24 explains  
8 that the substation site changed after the initial estimates were completed for the  
9 transmission portion of the Sandy Point substation project and that this change  
10 increased the actual cost of the project. The Company had to acquire new land for  
11 facilities, lease a lay down yard, build additional temporary facilities, demobilize  
12 and remobilize crews which resulted in increased cost. While Mr. Sweatman  
13 opines that this was an "oversight," the fact is that these costs were prudently spent  
14 to build the facilities needed to serve load in this area.

15           As stated in the Company's response to PUC RFI No. 5-8, the estimated  
16 cost for the substation-only portion of Sandy Point was \$7,619,697 and the actual  
17 cost was \$9,360,513. The estimated cost did not foresee pipeline removals,  
18 environmental sampling and disposal (\$400,000). Also, the estimate  
19 underestimated the labor for site security, overtime to meet the schedule, and  
20 additional labor for foundation installation due to unfavorable soil conditions near  
21 the Port of Houston (\$1,100,000).

1           In sum, this information establishes that CenterPoint Houston has met any  
2           perceived burden to substantiate and justify final capital project costs in excess of  
3           its final budget estimate.

4   **Q.   IS A BUDGET OVERRUN ON ANY GIVEN PROJECT INDICATIVE OF**  
5           **COST CONTROL ISSUES ASSOCIATED WITH A UTILITY'S CAPITAL**  
6           **PROGRAM?**

7   A.   No, especially when viewed in light of the \$3 billion in transmission capital  
8           investment that CenterPoint Houston has made between 2010 through 2018. In  
9           fact, Mr. Nalepa was only able to find two projects totaling approximately  
10          \$3.5 million that he claims overran their budgets due to construction errors. By  
11          applying his arbitrary and unsupported 10% overrun cut off, Mr. Sweatman is only  
12          able to identify \$20,328,742 of capital he incorrectly felt should be disallowed.  
13          These recommended disallowances represent approximately 0.12% and 0.68%,  
14          respectively, of the approximately \$3.0 billion High Voltage Operations capital for  
15          which the Company is seeking recovery. This remarkably low error rate proves  
16          that CenterPoint Houston manages its projects professionally and prudently, and as  
17          a result has a very near perfect track record in managing projects. Since total project  
18          perfection is an unrealistic goal for any organization, and 0.12% to 0.68% is a more  
19          than reasonable margin of error, the Company believes that it has fully supported  
20          the prudence of the full \$3.0 billion of transmission and substation capital for which  
21          we are requesting recovery.

**IV. TEST YEAR ACCOUNT 560 AND 570  
O&M EXPENSES ARE REASONABLE**

1  
2  
3 **Q. MR. NORWOOD ARGUES THAT THE TEST YEAR LEVEL OF EXPENSE**  
4 **IN ACCOUNT 560 AND 570 ARE NOT REASONABLE WHEN**  
5 **COMPARED TO PRIOR YEARS.<sup>9</sup> HOW DO YOU RESPOND?**

6 A. As Ms. Colvin testifies, the Company's request is based on actual test year  
7 expenses—which is the standard used by the Commission to set the Company's  
8 cost of service. This alone provides a basis to reject Mr. Norwood's proposal to  
9 establish the Company's O&M expense based on a multi-year average.  
10 Importantly, Mr. Norwood does not dispute the need for or reasonableness of any  
11 of the Company's test year O&M activities, including those reflected incurred  
12 Account 560 and 570. He simply believes they are too high as compared to prior  
13 years. His conclusion, however, ignores the facts that are driving these costs and  
14 the reality that these costs are representative of on-going activities and the expense  
15 associated with those activities. Mr. Pryor and Ms. Townsend address the  
16 reasonableness of the O&M expense in the other FERC accounts shown in  
17 Mr. Norwood's Table 3.

18 **Q. HAS THE COMPANY EXPLAINED AND SUPPORTED THE INCREASE**  
19 **IN TRANSMISSION O&M EXPENSE FROM 2010 TO 2018?**

20 A. Yes. As the Company explained in its direct testimony, CenterPoint Houston added  
21 approximately 400,000 customers between 2010 and 2018—a growth rate of  
22 almost 20% over the period. To serve that growth, the Company engineered and  
23 constructed a significant amount of new infrastructure. As existing infrastructure

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<sup>9</sup> Direct Testimony of Scott Norwood at 11-13.

1           ages and new infrastructure is installed, it stands to reason that the corrective and  
2           preventive maintenance costs will also increase over time.

3   **Q.   PLEASE DESCRIBE THE COSTS CAPTURED IN ACCOUNT 560 AND**  
4   **570.**

5   A.   FERC account 560 contains costs for supervision and engineering related to  
6       transmission activities. These costs include oversight of field activities, policy and  
7       compliance support, engineering support for standards and materials, asset  
8       management and other management and engineering activities. FERC account 570  
9       contains costs related to maintenance of transmission class station equipment. This  
10      includes corrective and preventive maintenance costs for various transmission class  
11      station equipment such as autotransformers, breakers, relays, switches, SCADA,  
12      PT/CTs as well as other equipment within a substation. FERC account 570 also  
13      includes field support for NERC/CIP compliance requirements, equipment surveys,  
14      switching and deploying relay settings changes.

15   **Q.   PLEASE EXPLAIN WHAT DROVE 2018 COSTS IN ACCOUNT 560 AND**  
16   **570 TO BE HIGHER THAN IN PRIOR YEARS.**

17   A.   The increases in account 560 are mostly attributable to the reassignment of FERC  
18       accounts for various CenterPoint Houston cost centers. The Company periodically  
19       reviews FERC assignments by cost center for updates/changes. For example, the  
20       FERC allocations to FERC account 560 were adjusted for various departments  
21       including Policy and Compliance, Standards and Materials, Planning and Design,  
22       Regulatory and Benchmark Support, and Grid Performance to reflect current level  
23       of engineering and supervision support of transmission activities.

1           The increase to FERC 570 was primarily due to increased corrective and  
2 preventive maintenance, including transformer oil servicing. Field support for  
3 NERC/CIP compliance increased due to increased requirements. Transformer oil  
4 servicing costs increased due to increase in transformer population. As the quantity  
5 of installed substation equipment has grown, more preventive maintenance work  
6 will be required to keep equipment operating safely and reliably. Likewise, as  
7 equipment ages, we expect our corrective maintenance levels to continue to  
8 increase.

9   **Q.   DOES CENTERPOINT HOUSTON MONITOR CHANGES IN SERVICE**  
10 **COMPANY COSTS, INCLUDING THOSE BOOKED TO ACCOUNT 560**  
11 **AND 570?**

12   A.   Yes. While Mr. Norwood complains that the Company does not perform O&M  
13 variance analysis by FERC account, the Company does maintain internal  
14 management reporting that is performed on a GAAP basis and employs various  
15 controls and processes to ensure that management has proper ongoing control over  
16 O&M expenses. I discuss these cost controls and processes in my direct testimony.  
17 Further evidence of CenterPoint Houston's awareness of cost drivers is found in  
18 Exhibit R-MWN-1, which is the Company's response to GCCC RFI No. 2-17. This  
19 discovery response explains the primary drivers of the O&M amounts incurred in  
20 Account 560 and 570.

21   **Q.   ARE THE TEST YEAR COSTS BOOKED TO ACCOUNT 560 AND 570**  
22 **REASONABLE AND NECESSARY?**

23   A.   Yes. These costs are reflective of reasonable and necessary activities performed by

High Voltage Operations Division for CenterPoint Houston during the test year and are reflective of the level of activities that will continued to be provided in the future based on the existing organizational structure.

**V. MISCELLANEOUS ISSUES**

**Q. MR. NALEPA ARGUES THAT CUSTOMERS SHOULD NOT EQUALLY SHARE IN THE LOSS ON SALES OF LAND ASSOCIATED WITH THE BRAZOS VALLEY CONNECTION TRANSMISSION PROJECT. WAS THE ORIGINAL PURCHASE PRICE AND SUBSEQUENT SALE OF THE LAND REASONABLE?**

**A.** Yes. There were 14 tracts of land associated with the Brazos Valley Connection Project sold during the test year. The Company completed construction on and energized the Brazos Valley Connection in March 2018. When land was purchased, entire lots had to be purchased instead of just acreage for the proposed right-of-way easement. Many of the tracts included improvements, such as homes or other structures at the time of purchase. In order to make the land useful for the project, the land was cleared and this required the demolition of these improvements. Upon completion of the project, the Company sold off the excess areas of fee-purchased land that was no longer suitable for the utility to own. With the improvements no longer existing, the property can only be assessed for the value of the land, resulting in a reduction from the original purchase price. The Company experienced a loss of \$1.46 million<sup>10</sup> on the tracts sold. Ms. Colvin

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<sup>10</sup> WP II-B-13a Brazos Valley Connection Tracts.

1 discusses the Commission precedent supporting the Company's proposal that  
2 shareholders and customers equally bear this loss.

3 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

4 **A. Yes.**

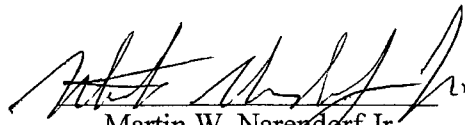
STATE OF TEXAS       §  
                                  §  
COUNTY OF HARRIS   §

**AFFIDAVIT OF MARTIN W. NARENDORF JR.**

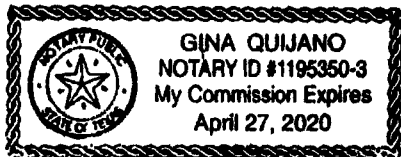
BEFORE ME, the undersigned authority, on this day personally appeared Martin W. Narendorf Jr. who having been placed under oath by me did depose as follows:

1.     “My name is Martin W. Narendorf Jr.. I am of sound mind and capable of making this affidavit. The facts stated herein are true and correct based upon my personal knowledge.
2.     I have prepared the foregoing Rebuttal Testimony and the information contained in this document is true and correct to the best of my knowledge.”

Further affiant sayeth not.

  
Martin W. Narendorf Jr.

SUBSCRIBED AND SWORN TO BEFORE ME on this 13<sup>th</sup> day of June, 2019.



  
Notary Public in and for the State of Texas

My commission expires: 4-27-2020

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC  
2019 CEHE RATE CASE  
DOCKET NO. 49421-SOAH DOCKET NO. 473-19-3864  
PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC01-37**

**QUESTION:**

MCPR – Monthly Construction Progress Reports filed with the Commission

For any facilities you seek to recover for which the commission granted a CCN, provide the following information:

- a. The PUC docket number for the amendment
- b. The first MCPR on which the project was reported (control number, item number, project numbers)
- c. The final MCPR on which the project was reported (control number, item number, project numbers)
- d. The initial estimated project cost from internal utility project approval, the estimated cost in the CCN for the option certificated, the percent of contingency cost included in the CCN estimate, the final project cost, and the percent difference from the estimated cost in the CCN
- e. A breakdown by FERC account (and subaccount) for the total project costs booked to each account that were associated with the CCN
- f. Was a cost in aid of construction charged? If not, why not? If so, please answer the following:
  - i. What was the amount?
  - ii. How was the amount of the contribution calculated?

**ANSWER:**

Please see attached PUC01-37 Attachment 1.xlsx.

**SPONSOR (PREPARER):**

Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**

PUC01-37 Attachment 1.xlsx

For any Facilities you seek to recover for which the commission granted a CCN, provide the following information

|    | Project                                                                                                                         | Zenith 138kV                                                                                                                                                                                                              | Springwoods                                                                               | Oyster Creek                                                                                                                             | Zenith - Franz                                                                            | Brazos Valley Connection                                                                  |
|----|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| a) | PUC Docket                                                                                                                      | 38307                                                                                                                                                                                                                     | 40049                                                                                     | 41749                                                                                                                                    | 44242                                                                                     | 44547                                                                                     |
| b) | First MCPR                                                                                                                      | 7/15/2010                                                                                                                                                                                                                 | 1/15/2012                                                                                 | 9/15/2013                                                                                                                                | 3/15/2015                                                                                 | 5/15/2015                                                                                 |
|    | Control Number, Item Number,<br>Project Number                                                                                  | Utility Project Number 730                                                                                                                                                                                                | Utility Project Number 768                                                                | Utility Project Number 834                                                                                                               | Utility Project Number 864                                                                | Utility Project Number 872                                                                |
| c) | Final MCPR                                                                                                                      | 8/15/2012                                                                                                                                                                                                                 | 11/15/2015                                                                                | 9/15/2018                                                                                                                                | 12/15/2017                                                                                | 12/15/2018                                                                                |
|    | Initial estimated cost from internal approval                                                                                   | \$ 6,091,000                                                                                                                                                                                                              | \$ 9,547,000                                                                              | \$ 12,552,000                                                                                                                            | \$ 11,200,000                                                                             | \$ 275,596,000                                                                            |
|    | estimated cost in the CCN for option certificated                                                                               | \$ 6,091,000                                                                                                                                                                                                              | \$ 9,547,000                                                                              | \$ 12,552,000                                                                                                                            | \$ 11,200,000                                                                             | \$ 296,270,000                                                                            |
| d) | % contingency included in the CCN estimate                                                                                      | For each project, cost estimates were based on historical information gathered from past projects and the most recent manufacturer quotes for construction materials and labor. No additional contingency was documented. |                                                                                           |                                                                                                                                          |                                                                                           |                                                                                           |
|    | Final project cost                                                                                                              | \$ 6,413,673                                                                                                                                                                                                              | \$ 8,593,292                                                                              | \$ 15,304,542                                                                                                                            | \$ 10,827,005                                                                             | \$ 276,213,325                                                                            |
|    | % difference from the estimated cost in the CCN                                                                                 | 5%                                                                                                                                                                                                                        | -10%                                                                                      | 22%                                                                                                                                      | -3%                                                                                       | -7%                                                                                       |
| e) | Breakdown by FERC account (and subaccount) for the total project costs booked to each account that were associated with the CCN | Please see Schedule II-B-1.1 RATE BASE ACCOUNTS - PLANT - TRANSMISSION PROJECT COSTS                                                                                                                                      |                                                                                           |                                                                                                                                          |                                                                                           |                                                                                           |
|    | Was a CIAC charged?                                                                                                             | No                                                                                                                                                                                                                        | No                                                                                        | CIAC was not charged for the interconnection since it was for a generator but the customer securitized costs associated with the project | No                                                                                        | No                                                                                        |
| f) | Why or why not?                                                                                                                 | The project addressed system reliability concerns and was not driven by a single customer                                                                                                                                 | The project addressed system reliability concerns and was not driven by a single customer | The upgrades were necessary in order to connect Freeport LNG's generator                                                                 | The project addressed system reliability concerns and was not driven by a single customer | The project addressed system reliability concerns and was not driven by a single customer |
|    | i. What was the amount?                                                                                                         |                                                                                                                                                                                                                           |                                                                                           | \$300k securitization for the CCN development<br>\$18,792,000 securitization for the transmission line and generator lead to their plant |                                                                                           |                                                                                           |
|    |                                                                                                                                 | n/a                                                                                                                                                                                                                       | n/a                                                                                       |                                                                                                                                          | n/a                                                                                       | n/a                                                                                       |
|    | ii. How was the amount of the contribution calculated?                                                                          | n/a                                                                                                                                                                                                                       | n/a                                                                                       | n/a                                                                                                                                      | n/a                                                                                       | n/a                                                                                       |

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC  
2019 CEHE RATE CASE  
DOCKET NO. 49421-SOAH DOCKET NO. 473-19-3864  
PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC01-38**

**QUESTION:**

MCPR – Monthly Construction Progress Reports filed with the Commission

For any new transmission lines that did not require a CCN, complete the following:

- a. Explain the need for the new facility.
- b. If the need was to connect a new single-point load customer or generation source, was a cost in aid of construction charged? If not, why not? If so,
  - i. What was the amount?
  - ii. How was the amount of the contribution calculated?
- c. The first MCPR on which the project was reported (control number, item number, project numbers)
- d. The final MCPR on which the project was reported (control number, item number, project numbers)
- e. The initial estimated project cost from internal utility project approval, the percent of contingency cost included in the estimate, the final project cost, and the percent difference from the estimated cost
- f. A breakdown by FERC account (and subaccount) for the total project costs booked to each account that were associated with the project.

**ANSWER:**

Please see PUC01-38 Attachment 1.

**SPONSOR (PREPARER):**

Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**

PUC01-38 Attachment 1.xls

PUC01-38 Attachment 1

| a) explain the need for the project |                                                                                                                                                                                                                                                                             | b) If the need was to connect a single point load customer or genera             |     |                                                                                   |                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------|-----------------------------|
| Project Name                        | Description                                                                                                                                                                                                                                                                 | Type of Project<br>(New Customer Service,<br>Network Improvement,<br>Relocation) | Y/N | If not, why not?                                                                  | If so, what was the amount? |
| Kirby Substation                    | 138 kV service to Kirby Substation within one mile of Ckt. 90A                                                                                                                                                                                                              | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| W.A. Parish Substation              | 345 kV service to W.A. Parish Substation within one mile of Ckt. 64A and 72A                                                                                                                                                                                                | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| Fry Road Substation                 | 138 kV service to Fry Road Substation within one mile of Ckts. 09J and 76A                                                                                                                                                                                                  | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| Fort Bend Substation                | 69 kV service to Fort Bend Substation within one mile of Ckt. 49B                                                                                                                                                                                                           | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| Fort Bend-Rosenberg                 | Partial Upgrade of 69 kV Ckt. 49B to 138 kV, Partial Rebuild and Partial Reconductor of 69 kV Ckt 49A, 138 kV service to Fort Bend Substation within one mile of Ckt. 49B                                                                                                   | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| Flewellen-Fort Bend                 | Partial Upgrade of 69 kV Ckt. 49A to 138 kV, Partial Reconductor of 69 kV Ckt. 49A, Installation, on an existing transmission line, of an additional 138 kV circuit not previously certificated 138 kV service to Fort Bend Substation within one mile of Ckts. 49A and 09G | Network Improvement                                                              | No  | The project carried system wide benefit and was not specific to a single customer | n/a                         |
| TEXAS_ Substation                   | 138 kV service to TEXAS_ Substation within one mile of Ckt. 87E                                                                                                                                                                                                             | New Customer Service                                                             | No  | This service extension was part of a 69kV to 138kV conversion project.            | n/a                         |
| CRSBAY Substation                   | 138 kV service to CRSBAY substation within one mile of Ckt. 84A                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$1,357,000                 |
| DUNCAN Substation                   | 138 kV service to DUNCAN substation within one mile of Ckt. 86D                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$2,950,000                 |
| SCRDLE Substation                   | 138 kV service to SCRDLE substation within one mile of Ckt. 92A                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$5,885,000                 |
| DEPOT Substation                    | 138 kV service to DEPOT Substation within one mile of Ckt. 84A                                                                                                                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                               | \$1,794,000                 |
| WINFRE Substation                   | 138 kV service to WINFRE Substation within one mile of Ckt. 86C                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$1,848,500                 |
| BARNES Substation                   | 138 kV service to BARNES Substation within one mile of Ckt. 88B                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$1,263,000                 |
| NORTON Substation                   | 138 kV service to NORTON Substation within one mile of Ckt. 86C                                                                                                                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                               | \$5,698,898                 |

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|                   |                                                                                                                                                                              | a) explain the need for the project                                              |     | b) If the need was to connect a single point load customer or genera |                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|----------------------------------------------------------------------|--------------------------------|
| Project Name      | Description                                                                                                                                                                  | Type of Project<br>(New Customer Service,<br>Network Improvement,<br>Relocation) | Y/N | If not, why not?                                                     | If so, what was the<br>amount? |
| TANKER Substation | 138 kV service to TANKER Substation within one mile of Ckt 94K                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$805,000                      |
| MILLER Substation | 138 kV service to MILLER Substation within one mile of Ckt. 88Z                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                  | \$2,100,000                    |
| RALYND Substation | 138 kV service to RALYND Substation within one mile of Ckt 86C and 86F                                                                                                       | New Customer Service                                                             | Yes | n/a                                                                  | \$2,380,000                    |
| SEADOC Substation | 138 kV service to SEADOC Substation within one mile of Ckt. 02F, Installation, on an existing transmission line, of an additional 138 kV circuit not previously certificated | New Customer Service                                                             | Yes | n/a                                                                  | \$4,050,000                    |
| LNGSTN Substation | 138 kV service to LNGSTN Substation within one mile of Ckts. 86C and 86K                                                                                                     | New Customer Service                                                             | Yes | n/a                                                                  | \$4,207,000                    |
| CONNER Substation | 138 kV service to CONNER Substation within one mile of Ckts. 86D and 86J                                                                                                     | New Customer Service                                                             | Yes | n/a                                                                  | \$3,855,000                    |
| MCCABE Substation | 138 kV service to MCCABE Substation within one mile of Ckt. 96B                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                  | \$951,000                      |
| RANGER Substation | 138 kV service to RANGER Substation within one mile of Ckt 84G                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$12,780                       |
| ALKANE Substation | 138 kV service to ALKANE Substation within one mile of Ckt. 96D                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                  | \$1,827,000                    |
| MARINE Substation | 138 kV Service to MARINE Substation within one mile of Ckt. 47C                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                  | \$3,974,600                    |
| MOORE_ Substation | 138 kV Service to MOORE_ Substation within one mile of Ckt 08F                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$3,747,255                    |
| FOSTER Substation | 138 kV Service to FOSTER Substation within one mile of Ckt 25E                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$230,000                      |
| CAMDEN Substation | 138 kV Service to CAMDEN Substation within one mile of Ckt. 26E                                                                                                              | New Customer Service                                                             | Yes | n/a                                                                  | \$1,778,435                    |
| BUNKER Substation | 138 kV Service to BUNKER Substation within one mile of Ckt 08B                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$2,648,765                    |
| COPPER Substation | 138 kV Service to COPPER Substation within one mile of Ckt 02E                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$2,206,000                    |
| MIRAGE Substation | 138 kV Service to MIRAGE Substation within one mile of Ckt. 96B, Partial Rebuild of 38 kV Ckts. 96B and 96F                                                                  | New Customer Service                                                             | Yes | n/a                                                                  | \$1,469,000                    |
| CORTEZ Substation | 138 kV Service to CORTEZ Substation within one mile of Ckts 59I and 59K                                                                                                      | New Customer Service                                                             | Yes | n/a                                                                  | \$2,266,485                    |
| TEXWAL Substation | 69 kV Service to TEXWAL Substation within one mile of Ckt. 10A                                                                                                               | New Customer Service                                                             | Yes | n/a                                                                  | \$1,655,000                    |
| HUDSON Substation | 138 kV Service to HUDSON Substation within one mile of Ckts. 04A                                                                                                             | New Customer Service                                                             | Yes | n/a                                                                  | \$907,500                      |

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| a) explain the need for the project |                                                                                                                                | b) If the need was to connect a single point load customer or genera             |     |                                                                                         |                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------|--------------------------------|
| Project Name                        | Description                                                                                                                    | Type of Project<br>(New Customer Service,<br>Network Improvement,<br>Relocation) | Y/N | If not, why not?                                                                        | If so, what was the<br>amount? |
| PATRIK Substation                   | 138 kV Service to PATRIK Substation<br>within one mile of Ckt. 06J, Partial Rebuild of 69 kV Ckts. 16A<br>and 23A              | New Customer Service                                                             | Yes | n/a                                                                                     | \$1,850,000                    |
| RUSSEL Substation                   | 138 kV Service to RUSSEL Substation<br>within one mile of Ckt. 84F                                                             | New Customer Service                                                             | Yes | n/a                                                                                     | \$2,099,000                    |
| GLOBAL Substation                   | 138 kV Service to GLOBAL Substation<br>within one mile of Ckt. 82D                                                             | New Customer Service                                                             | Yes | n/a                                                                                     | \$4,385,000                    |
| WINMIL Substation                   | 138 kV Service to WINMIL Substation<br>within one mile of Ckt. 26B                                                             | New Customer Service                                                             | Yes | n/a                                                                                     | \$1,725,000                    |
| DALTON Substation                   | 138 kV Service to DALTON Substation<br>within one mile of Ckt. 86I, Modification of 138 kV Ckt. 86I for<br>fiber optics cable. | New Customer Service                                                             | Yes | n/a                                                                                     | \$3,760,000                    |
| Rothwood Substation                 | 138 kV and 345 kV service to Rothwood Substation within one<br>mile of Ckts. 86C and 74B                                       | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Meadow Substation                   | 345 kV service to Meadow Substation within one mile of Ckt.<br>99A                                                             | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Dow Substation                      | 345 kV service to Dow Substation within one mile of Ckt. 18A                                                                   | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Atascocita Substation               | 138 kV service to Atascocita Substation within one mile of Ckt.<br>66E                                                         | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Crabb River Substation              | 138 kV service to Crabb River Substation within one mile of Ckt.<br>80B                                                        | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Jordan Substation                   | 138 kV and 345 kV service to Jordan Substation within one mile<br>of<br>Ckts. 86C, 86D, and 99G                                | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Alexander Island Substation         | 138 kV service to Alexander Island Substation within one mile of<br>Ckts.<br>84B and 87D                                       | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Rothwood Substation                 | 345 kV service to Rothwood Substation within one mile of Ckts.<br>74H and 75B                                                  | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Fort Bend Substation                | 69 kV service to Fort Bend Substation within one mile of Ckt.<br>49B                                                           | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| Ellington Substation                | 138 kV service to Ellington Substation within one mile of Ckts.<br>06K, 07A, and 91A                                           | Service to a Substation                                                          | No  | The project carried system wide<br>benefit and was not specific to a<br>single customer | n/a                            |

PUC01-38 Attachment 1

| a) explain the need for the project |                                                                                                                                                           | b) If the need was to connect a single point load customer or genera             |     |                                                                                   |                                |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------|--------------------------------|
| Project Name                        | Description                                                                                                                                               | Type of Project<br>(New Customer Service,<br>Network Improvement,<br>Relocation) | Y/N | If not, why not?                                                                  | If so, what was the<br>amount? |
| Lyondell Substation                 | 138 kV Service to Lyondell Substation within one mile of Ckt. 03G                                                                                         | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Rothwood Substation (Phase 2)       | 138 kV Service to Rothwood Substation within one mile of Ckts. 66C and 66I                                                                                | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Tanner Substation                   | 138 kV Service to Tanner Substation within one mile of Ckts. 24A and 76A                                                                                  | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Orchard Substation                  | 138 kV Service to Orchard Substation within one mile of Ckt. 60A                                                                                          | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Tiki Island Substation              | 138 kV Service to Tiki Island Substation within one mile of Ckt 01B                                                                                       | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| La Marque Substation                | Partial Rebuild and Partial Reconnector of 138 kV Ckt. 01B, 138 kV Service to La Marque Substation within one mile of Ckts. 63D, 63E, and 93B             | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Bailey Substation                   | 345 kV Service to Bailey Substation within one mile of Ckt. 72C                                                                                           | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Franz Substation                    | 138 kV Service to Franz Substation within one mile of Ckts. 09H and 66A, Partial Rebuild of 345 kV Ckts. 71D and 99F                                      | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Jones Creek Substation              | 138 kV Service to Jones Creek Substation within one mile of Ckts. 02F, 48F, and 59K, 345 kV Service to Jones Creek Substation within one mile of Ckt. 18A | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Sandy Point Substation              | 138 kV Service to Sandy Point Substation within one mile of Ckt 96F                                                                                       | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |
| Brnghurst Substation                | 69 kV Service to Brnghurst Substation within one mile of Ckt. 12A, Partial Rebuild of 69 kV Ckt. 12A                                                      | Service to a Substation                                                          | No  | The project carried system wide benefit and was not specific to a single customer | n/a                            |

| PUC01-38 Attachment 1 |                                                                                                                                                                                          |                                                                                  |     |                                                                                        |                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------|--------------------------------|
|                       | a) explain the need for the project                                                                                                                                                      |                                                                                  |     | b) If the need was to connect a single point load customer or genera                   |                                |
| Project Name          | Description                                                                                                                                                                              | Type of Project<br>(New Customer Service,<br>Network Improvement,<br>Relocation) | Y/N | If not, why not?                                                                       | If so, what was the<br>amount? |
| Southwyck Substation  | 138 kV Service to Southwyck Substation within one mile of of<br>Ckt. 26A, Installation, on an existing transmission line, of an<br>additional 138 kV circuit not previously certificated | Service to a Substation                                                          | No  | The project earned system wide<br>benefit and was not specific to a<br>single customer | n/a                            |
| FOSTER Loop           | Installation, on an existing transmission line, of an additional 138<br>kV circuit not previously certified.                                                                             | Service to a Substation                                                          | No  | The project earned system wide<br>benefit and was not specific to a<br>single customer | n/a                            |

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| ion source, was a CIAC charged? |                                                           | c) The first MCPR on which the project was reported and the project number |                          | d) The final MCPR on which the project was reported and the project number |                          | e) The initial estimated project cost from inter contingency cost included in the estimate, the fi from the estim |                    |
|---------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| Project Name                    | How was it Calculated?                                    | Initial MCPR Date                                                          | Utility's Project Number | Final MCPR Date                                                            | Utility's Project Number | Filed Initial Estimated Project Cost                                                                              | % Contingency Cost |
| Kirby Substation                | n/a                                                       | November 15, 2011                                                          | 770.0                    | 07/15/12                                                                   | 770.0                    | \$565,000                                                                                                         | 0%                 |
| W.A. Parish Substation          | n/a                                                       | July 15, 2012                                                              | 805.0                    | 11/15/13                                                                   | 805.0                    | \$380,000                                                                                                         | 0%                 |
| Fry Road Substation             | n/a                                                       | June 15, 2014                                                              | 614.0                    | 06/15/15                                                                   | 614.0                    | \$191,000                                                                                                         | 0%                 |
| Fort Bend Substation            | n/a                                                       | March 14, 2014                                                             | 853.2                    | 04/15/16                                                                   | 853.2                    | \$488,000                                                                                                         | 0%                 |
| Fort Bend-Rosenberg             | n/a                                                       | July 15, 2014                                                              | 853.3                    | 11/15/15                                                                   | 853.3                    | \$1,913,000                                                                                                       | 0%                 |
| Flewellen-Fort Bend             | n/a                                                       | November 15, 2014                                                          | 853.5                    | 11/15/15                                                                   | 853.5                    | \$509,000                                                                                                         | 0%                 |
| TEXAS_ Substation               | n/a                                                       | October 15, 2010                                                           | 718.0                    | 05/15/12                                                                   | 718.0                    | \$1,034,000                                                                                                       | 0%                 |
| CRSBAY Substation               | The CIAC is the estimated cost for the facility extension | January 7, 2011                                                            | 763.0                    | 10/15/11                                                                   | 763.0                    | \$1,357,000                                                                                                       | 0%                 |
| DUNCAN Substation               | The CIAC is the estimated cost for the facility extension | January 17, 2011                                                           | 781.0                    | 09/15/11                                                                   | 781.0                    | \$2,950,000                                                                                                       | 0%                 |
| SCRDL Substation                | The CIAC is the estimated cost for the facility extension | September 15, 2011                                                         | 793.0                    | 08/15/12                                                                   | 793.0                    | \$5,885,000                                                                                                       | 0%                 |
| DEPOT Substation                | The CIAC is the estimated cost for the facility extension | February 15, 2012                                                          | 799.0                    | 12/14/12                                                                   | 799.0                    | \$1,794,000                                                                                                       | 0%                 |
| WINFRE Substation               | The CIAC is the estimated cost for the facility extension | June 15, 2012                                                              | 812.0                    | 08/15/13                                                                   | 812.0                    | \$1,848,500                                                                                                       | 0%                 |
| BARNES Substation               | The CIAC is the estimated cost for the facility extension | May 15, 2012                                                               | 792.0                    | 08/15/13                                                                   | 792.0                    | \$1,263,000                                                                                                       | 0%                 |
| NORTON Substation               | The CIAC is the estimated cost for the facility extension | September 15, 2012                                                         | 813.0                    | 04/15/14                                                                   | 813.0                    | \$5,698,898                                                                                                       | 0%                 |

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| ion source, was a CIAC charged? |                                                           | c) The first MCPR on which the project was reported and the project number |                          | d) The final MCPR on which the project was reported and the project number |                          | e) The initial estimated project cost from inter contingency cost included in the estimate, the fi from the estim |                    |
|---------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| Project Name                    | How was it Calculated?                                    | Initial MCPR Date                                                          | Utility's Project Number | Final MCPR Date                                                            | Utility's Project Number | Filed Initial Estimated Project Cost                                                                              | % Contingency Cost |
| TANKER Substation               | The CIAC is the estimated cost for the facility extension | January 15, 2013                                                           | 844.0                    | 12/15/13                                                                   | 844.0                    | \$805,000                                                                                                         | 0%                 |
| MILLER Substation               | The CIAC is the estimated cost for the facility extension | December 15, 2012                                                          | 833.0                    | 02/14/14                                                                   | 833.0                    | \$2,100,000                                                                                                       | 0%                 |
| RALYND Substation               | The CIAC is the estimated cost for the facility extension | March 15, 2013                                                             | 846.0                    | 04/15/14                                                                   | 846.0                    | \$2,380,000                                                                                                       | 0%                 |
| SEADOC Substation               | The CIAC is the estimated cost for the facility extension | June 15, 2013                                                              | 850.0                    | 05/15/15                                                                   | 850.0                    | \$4,050,000                                                                                                       | 0%                 |
| LNGSTN Substation               | The CIAC is the estimated cost for the facility extension | July 15, 2013                                                              | 852.0                    | 05/15/15                                                                   | 852.0                    | \$4,207,000                                                                                                       | 0%                 |
| CONNER Substation               | The CIAC is the estimated cost for the facility extension | September 15, 2013                                                         | 849.0                    | 05/15/15                                                                   | 849.0                    | \$3,855,000                                                                                                       | 0%                 |
| MCCABE Substation               | The CIAC is the estimated cost for the facility extension | March 14, 2014                                                             | 848.0                    | 05/15/15                                                                   | 848.0                    | \$951,000                                                                                                         | 0%                 |
| RANGER Substation               | The CIAC is the estimated cost for the facility extension | December 15, 2014                                                          | 895.0                    | 10/15/15                                                                   | 895.0                    | \$12,780                                                                                                          | 0%                 |
| ALKANE Substation               | The CIAC is the estimated cost for the facility extension | December 15, 2014                                                          | 917.0                    | 07/14/17                                                                   | 917.0                    | \$1,827,000                                                                                                       | 0%                 |
| MARINE Substation               | The CIAC is the estimated cost for the facility extension | February 15, 2015                                                          | 904.0                    | 02/15/17                                                                   | 904.0                    | \$3,974,600                                                                                                       | 0%                 |
| MOORE_ Substation               | The CIAC is the estimated cost for the facility extension | May 15, 2015                                                               | 855.0                    | 11/15/16                                                                   | 855.0                    | \$3,747,255                                                                                                       | 0%                 |
| FOSTER Substation               | The CIAC is the estimated cost for the facility extension | November 15, 2015                                                          | 853.8                    | 08/15/16                                                                   | 853.8                    | \$230,000                                                                                                         | 0%                 |
| CAMDEN Substation               | The CIAC is the estimated cost for the facility extension | November 15, 2015                                                          | 937.0                    | 11/15/16                                                                   | 937.0                    | \$1,778,435                                                                                                       | 0%                 |
| BUNKER Substation               | The CIAC is the estimated cost for the facility extension | January 15, 2016                                                           | 965.0                    | 03/15/17                                                                   | 965.0                    | \$2,648,765                                                                                                       | 0%                 |
| COPPER Substation               | The CIAC is the estimated cost for the facility extension | November 15, 2015                                                          | 960.0                    | 04/16/17                                                                   | 960.0                    | \$2,206,000                                                                                                       | 0%                 |
| MIRAGE Substation               | The CIAC is the estimated cost for the facility extension | August 15, 2016                                                            | 978.0                    | 06/15/17                                                                   | 978.0                    | \$1,469,000                                                                                                       | 0%                 |
| CORTEZ Substation               | The CIAC is the estimated cost for the facility extension | September 15, 2016                                                         | 865.0                    | 07/15/18                                                                   | 865.0                    | \$2,266,485                                                                                                       | 0%                 |
| TEXWAL Substation               | The CIAC is the estimated cost for the facility extension | June 15, 2017                                                              | 993.0                    | 02/15/19                                                                   | 993.0                    | \$1,655,000                                                                                                       | 0%                 |
| HUDSON Substation               | The CIAC is the estimated cost for the facility extension | October 13, 2017                                                           | 1005.0                   |                                                                            | 1005.0                   | \$907,500                                                                                                         | 0%                 |

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| ion source, was a CIAC charged? |                                                           | c) The first MCPR on which the project was reported and the project number |                          | d) The final MCPR on which the project was reported and the project number |                          | e) The initial estimated project cost from inter contingency cost included in the estimate, the fi from the estim |                    |
|---------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| Project Name                    | How was it Calculated?                                    | Initial MCPR Date                                                          | Utility's Project Number | Final MCPR Date                                                            | Utility's Project Number | Filed Initial Estimated Project Cost                                                                              | % Contingency Cost |
| PATRIK Substation               | The CIAC is the estimated cost for the facility extension | November 15, 2017                                                          | 991.0                    |                                                                            | 991.0                    | \$1,850,000                                                                                                       | 0%                 |
| RUSSEL Substation               | The CIAC is the estimated cost for the facility extension | March 15, 2018                                                             | 1001.0                   |                                                                            | 1001.0                   | \$2,099,000                                                                                                       | 0%                 |
| GLOBAL Substation               | The CIAC is the estimated cost for the facility extension | May 15, 2018                                                               | 981.2                    |                                                                            | 981.2                    | \$4,385,000                                                                                                       | 0%                 |
| WINMIL Substation               | The CIAC is the estimated cost for the facility extension | May 15, 2018                                                               | 996.0                    |                                                                            | 996.0                    | \$1,725,000                                                                                                       | 0%                 |
| DALTON Substation               | The CIAC is the estimated cost for the facility extension | January 15, 2018                                                           | 1132.0                   |                                                                            | 1132.0                   | \$3,760,000                                                                                                       | 0%                 |
| Rothwood Substation             | n/a                                                       | April 15, 2009                                                             | 707.0                    | 09/15/10                                                                   | 707.0                    | \$2,366,000                                                                                                       | 0%                 |
| Meadow Substation               | n/a                                                       | September 15, 2009                                                         | 665.0                    | 11/15/10                                                                   | 665.0                    | \$2,250,000                                                                                                       | 0%                 |
| Dow Substation                  | n/a                                                       | February 15, 2012                                                          | 764.0                    | 07/15/12                                                                   | 764.0                    | \$48,000                                                                                                          | 0%                 |
| Atascocita Substation           | n/a                                                       | January 15, 2013                                                           | 836.0                    | 09/16/13                                                                   | 836.0                    | \$153,000                                                                                                         | 0%                 |
| Crabb River Substation          | n/a                                                       | January 15, 2013                                                           | 842.0                    | 04/15/14                                                                   | 842.0                    | \$267,000                                                                                                         | 0%                 |
| Jordan Substation               | n/a                                                       | June 15, 2013                                                              | 811.1                    | 01/15/15                                                                   | 811.1                    | \$7,367,000                                                                                                       | 0%                 |
| Alexander Island Substation     | n/a                                                       | November 15, 2014                                                          | 903.0                    | 05/15/16                                                                   | 903.0                    | \$358,000                                                                                                         | 0%                 |
| Rothwood Substation             | n/a                                                       | November 15, 2014                                                          | 900.0                    | 01/15/16                                                                   | 900.0                    | \$2,186,000                                                                                                       | 0%                 |
| Fort Bend Substation            | n/a                                                       | December 15, 2014                                                          | 853.6                    | 11/15/15                                                                   | 853.6                    | \$430,000                                                                                                         | 0%                 |
| Ellington Substation            | n/a                                                       | October 15, 2014                                                           | 902.0                    | 09/15/15                                                                   | 902.0                    | \$345,000                                                                                                         | 0%                 |

PUC01-38 Attachment 1

| ion source, was a CIAC charged? |                        | c) The first MCPR on which the project was reported and the project number |                          | d) The final MCPR on which the project was reported and the project number |                          | e) The initial estimated project cost from inter contingency cost included in the estimate, the fi from the estim |                    |
|---------------------------------|------------------------|----------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| Project Name                    | How was it Calculated? | Initial MCPR Date                                                          | Utility's Project Number | Final MCPR Date                                                            | Utility's Project Number | Filed Initial Estimated Project Cost                                                                              | % Contingency Cost |
| Lyondell Substation             | n/a                    | August 15, 2015                                                            | 948.0                    | 07/14/17                                                                   | 948.0                    | \$295,000                                                                                                         | 0%                 |
| Rothwood Substation (Phase 2)   | n/a                    | January 15, 2016                                                           | 900.1                    | 09/15/16                                                                   | 900.1                    | \$834,000                                                                                                         | 0%                 |
| Tanner Substation               | n/a                    | April 15, 2015                                                             | 894.0                    | 02/15/17                                                                   | 894.0                    | \$7,417,000                                                                                                       | 0%                 |
| Orchard Substation              | n/a                    | November 15, 2015                                                          | 952.0                    | 08/15/16                                                                   | 952.0                    | \$204,000                                                                                                         | 0%                 |
| Tiki Island Substation          | n/a                    | November 15, 2015                                                          | 912.1                    | 11/15/16                                                                   | 912.1                    | \$197,000                                                                                                         | 0%                 |
| La Marque Substation            | n/a                    | November 15, 2015                                                          | 912.0                    | 01/16/17                                                                   | 912.0                    | \$1,446,000                                                                                                       | 0%                 |
| Bailey Substation               | n/a                    | November 15, 2015                                                          | 949.0                    | 01/16/17                                                                   | 949.0                    | \$2,115,000                                                                                                       | 0%                 |
| Franz Substation                | n/a                    | September 15, 2016                                                         | 1183.0                   | 11/15/17                                                                   | 1183.0                   | \$2,867,000                                                                                                       | 0%                 |
| Jones Creek Substation          | n/a                    | April 15, 2016                                                             | 840.0                    | 10/13/17                                                                   | 840.0                    | \$15,021,000                                                                                                      | 0%                 |
| Sandy Point Substation          | n/a                    | October 15, 2016                                                           | 857.0                    | 09/15/17                                                                   | 857.0                    | \$2,619,000                                                                                                       | 0%                 |
| Brnghurst Substation            | n/a                    | February 15, 2017                                                          | 1157.0                   | 06/15/18                                                                   | 1157.0                   | \$1,395,000                                                                                                       | 0%                 |

PUC01-38 Attachment 1

| ion source, was a CIAC charged? |                        | c) The first MCPR on which the project was reported and the project number |                          | d) The final MCPR on which the project was reported and the project number |                          | e) The initial estimated project cost from inter contingency cost included in the estimate, the fi from the estim |                    |
|---------------------------------|------------------------|----------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| Project Name                    | How was it Calculated? | Initial MCPR Date                                                          | Utility's Project Number | Final MCPR Date                                                            | Utility's Project Number | Filed Initial Estimated Project Cost                                                                              | % Contingency Cost |
| Southwyck Substation            | n/a                    | January 15, 2018                                                           | 954.3                    | 9/27/2018                                                                  | 954.3                    | \$1,635,000                                                                                                       | 0%                 |
| FOSTER Loop                     | n/a                    | April 15, 2015                                                             | 853.7                    |                                                                            | 853.7                    | \$396,000                                                                                                         | 0%                 |

|                                                                                                           |                           |              |                                          |        |        |        |
|-----------------------------------------------------------------------------------------------------------|---------------------------|--------------|------------------------------------------|--------|--------|--------|
| PUC01-38 Attachment 1                                                                                     |                           |              |                                          |        |        |        |
| nal utility project approval, the percent of<br>nal project cost, and the percent difference<br>ated cost |                           |              | f) A breakdown by FERC account (and suba |        |        |        |
| Project Name                                                                                              | Final Actual Project Cost | % Difference | E35001                                   | E35101 | E35201 | E35401 |
| Southwyck Substation                                                                                      | \$934,026.50              | -42.9%       |                                          |        |        |        |
| FOSTER Loop                                                                                               | \$376,104                 | -5 0%        |                                          |        |        |        |

PUC01-38 Attachment 1

|                        | account) for the total project costs booked to each account that were associated with the project |              |            |              |      |
|------------------------|---------------------------------------------------------------------------------------------------|--------------|------------|--------------|------|
| Project Name           | E35501                                                                                            | E35601       | E35901     | E36201       | RWIP |
| Kirby Substation       | 179,507.01                                                                                        | 67,824.23    |            |              |      |
| W.A. Parish Substation | 1,324.39                                                                                          | 22,967.73    | 141,798.00 |              |      |
| Fry Road Substation    | 49,902.56                                                                                         | 27,525.79    |            |              |      |
| Fort Bend Substation   | 369,489.95                                                                                        | 79,696.84    |            |              |      |
| Fort Bend-Rosenberg    | 136,748.75                                                                                        | 338,442.19   |            |              |      |
| Flewellen-Fort Bend    | 177,629.68                                                                                        | 500,265.92   |            |              |      |
| TEXAS_ Substation      | 426,703.26                                                                                        | 445,887.30   |            |              |      |
| CRSBAY Substation      |                                                                                                   | 30.59        |            |              |      |
| DUNCAN Substation      |                                                                                                   | (138,168.89) |            |              |      |
| SCRDL Substation       | (24,795.70)                                                                                       | (61,167.22)  |            | (100,895.12) |      |
| DEPOT Substation       |                                                                                                   | (39,387.81)  |            |              |      |
| WINFRE Substation      |                                                                                                   | (6,845.99)   |            |              |      |
| BARNES Substation      | 2,804.47                                                                                          | 11,124.15    |            |              |      |
| NORTON Substation      | 227,082.10                                                                                        | 602,826.56   |            |              |      |

PUC01-38 Attachment 1

|                   | account) for the total project costs booked to each account that were associated with the project. |              |        |        |            |
|-------------------|----------------------------------------------------------------------------------------------------|--------------|--------|--------|------------|
| Project Name      | E35501                                                                                             | E35601       | E35901 | E36201 | RWIP       |
| TANKER Substation | (2,265.99)                                                                                         | (15,404.60)  |        |        |            |
| MILLER Substation |                                                                                                    | 331,300.98   |        |        |            |
| RALYND Substation | (19,096.10)                                                                                        | (7,732.62)   |        |        |            |
| SEADOC Substation | (13,954.47)                                                                                        | (393,480.36) |        |        |            |
| LNGSTN Substation | (8,163.42)                                                                                         | (76,361.86)  |        |        |            |
| CONNER Substation | (15,406.94)                                                                                        | (56,090.70)  |        |        |            |
| MCCABE Substation |                                                                                                    | (14,643.49)  |        |        |            |
| RANGER Substation | 20,563.50                                                                                          | 25,532.12    |        |        |            |
| ALKANE Substation | 19,792.69                                                                                          | 34,691.88    |        |        |            |
| MARINE Substation | (309,911.12)                                                                                       | (93,014.69)  |        |        |            |
| MOORE_ Substation | 35,339.93                                                                                          | 92,573.56    |        |        |            |
| FOSTER Substation |                                                                                                    | 127,035.74   |        |        |            |
| CAMDEN Substation |                                                                                                    | 15,120.04    |        |        |            |
| BUNKER Substation | 3,124.73                                                                                           | 58,099.05    |        |        | 135,445.83 |
| COPPER Substation |                                                                                                    | 110,044.23   |        |        |            |
| MIRAGE Substation | (31,953.07)                                                                                        | (37,141.54)  |        |        | 81,506.24  |
| CORTEZ Substation |                                                                                                    | 58,371.13    |        |        |            |
| TEXWAL Substation | 30,777.99                                                                                          | 94,900.57    |        |        |            |
| HUDSON Substation |                                                                                                    |              |        |        |            |

PUC01-38 Attachment 1

|                             | account) for the total project costs booked to each account that were associated with the project. |            |           |        |           |
|-----------------------------|----------------------------------------------------------------------------------------------------|------------|-----------|--------|-----------|
| Project Name                | E35501                                                                                             | E35601     | E35901    | E36201 | RWIP      |
| PATRIK Substation           |                                                                                                    |            |           |        |           |
| RUSSEL Substation           |                                                                                                    |            |           |        |           |
| GLOBAL Substation           |                                                                                                    |            |           |        |           |
| WINMIL Substation           |                                                                                                    |            |           |        |           |
| DALTON Substation           |                                                                                                    |            |           |        |           |
| Rothwood Substation         |                                                                                                    | 86,394.47  | 35,076.90 |        |           |
| Meadow Substation           |                                                                                                    | 43,477.00  |           |        |           |
| Dow Substation              |                                                                                                    | 72,453.00  |           |        |           |
| Atascocita Substation       | 41,524.77                                                                                          | 36,979.89  |           |        |           |
| Crabb River Substation      | 167,875.19                                                                                         | 82,506.85  |           |        |           |
| Jordan Substation           | 138,271.81                                                                                         | 681,085.99 |           |        |           |
| Alexander Island Substation | 53,730.50                                                                                          | 72,269.62  |           |        |           |
| Rothwood Substation         |                                                                                                    | 82,884.91  |           |        |           |
| Fort Bend Substation        | 181,395.39                                                                                         | 95,354.26  |           |        | 53,712.46 |
| Ellington Substation        | 19,870.81                                                                                          | 53,367.08  |           |        |           |

PUC01-38 Attachment 1

|                               |                                                                                                  |            |        |        |      |
|-------------------------------|--------------------------------------------------------------------------------------------------|------------|--------|--------|------|
|                               |                                                                                                  |            |        |        |      |
|                               | ccount) for the total project costs booked to each account that were associated with the project |            |        |        |      |
| Project Name                  | E35501                                                                                           | E35601     | E35901 | E36201 | RWIP |
| Lyondell Substation           | 77,275.85                                                                                        | 27,630.41  |        |        |      |
| Rothwood Substation (Phase 2) |                                                                                                  | 87,297.12  |        |        |      |
| Tanner Substation             | 36,578.43                                                                                        | 708,394.75 |        |        |      |
| Orchard Substation            | 58,040.58                                                                                        | 13,816.91  |        |        |      |
| Tiki Island Substation        | 32,881.90                                                                                        | 67,878.96  |        |        |      |
| La Marque Substation          | 91,819.80                                                                                        | 337,241.11 |        |        |      |
| Bailey Substation             | 477,667.30                                                                                       |            |        |        |      |
| Franz Substation              | 32,256.90                                                                                        | 116,094.01 |        |        |      |
| Jones Creek Substation        | 999,590.19                                                                                       |            |        |        |      |
| Sandy Point Substation        | 451,229.19                                                                                       | 608,969.17 |        |        |      |
| Bringhurst Substation         | 52,103.48                                                                                        | 106,486.87 |        |        |      |

| PUC01-38 Attachment 1 |                                                                                                   |            |        |        |            |
|-----------------------|---------------------------------------------------------------------------------------------------|------------|--------|--------|------------|
|                       | ccount) for the total project costs booked to each account that were associated with the project. |            |        |        |            |
| Project Name          | E35501                                                                                            | E35601     | E35901 | E36201 | RWIP       |
| Southwyck Substation  | 43,312.42                                                                                         | 778,232.70 |        |        | 112,481.38 |
| FOSTER Loop           |                                                                                                   | 376,104.34 |        |        |            |

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

**PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC01-39**

**QUESTION:**

For any new substation or high voltage switching stations for which the utility seeks rate recovery please complete the following table for the completed station costs:

| <b>Project Portion</b>                                 | <b>Cost</b> | <b>FERC Accounts</b> |
|--------------------------------------------------------|-------------|----------------------|
| Design, Planning, Engineering                          |             |                      |
| Land, Land rights, and other common costs (if T and D) |             |                      |
| Labor                                                  |             |                      |
| Total Components                                       |             |                      |
| Transformers<br>(total units and cost per unit)        |             |                      |
| Control House and Communications                       |             |                      |
| Bus and Breakers, and Switches                         |             |                      |
| <b>Total</b>                                           |             | <b>n/a</b>           |

**ANSWER:**

Please see attachment titled "PUC01-39 Attachment 1.xlsx".

**SPONSOR (PREPARER):**

Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**

PUC01-39 Attachment 1.xlsx

Cost shown are "inside the Substation fence only".

"Other" includes Overheads, Employee Expenses, A&G, Rental, Contribution in Aid of Construction(CIAC), etc.

| Substation Name                                        |                            | Springwoods   |               |
|--------------------------------------------------------|----------------------------|---------------|---------------|
| Project Portion                                        |                            | Cost          | FERC Accounts |
| Design, Planning, Engineering                          |                            | 272,529.91    | E36101/E36201 |
| Land, Land Rights, and other common costs (if T and D) |                            | 1,442,038.85  | E35001        |
| Labor                                                  |                            | 4,891,749.78  | E36101/E36201 |
| Total Components                                       |                            | 5,207,280.18  | E36101/E36201 |
| Transformers                                           | 2 Units @ 1,780,041.35 ea. | 3,560,082.70  | E36201        |
| Control House and Communications                       |                            | 75,446.27     | E36101/E36201 |
| Bus and Breakers, and Switches                         |                            | 453,090.49    | E36101/E36201 |
| Other                                                  |                            | 882,769.39    | E36101/E36201 |
| Total excluding AFUDC                                  |                            | 12,696,368.11 | N/A           |
| Total including AFUDC                                  |                            | 13,505,096.38 |               |

| Substation Name                                        |                           | Fry Road     |               |
|--------------------------------------------------------|---------------------------|--------------|---------------|
| Project Portion                                        |                           | Cost         | FERC Accounts |
| Design, Planning, Engineering                          |                           | 188,744.72   | E36101/E36201 |
| Land, Land Rights, and other common costs (if T and D) |                           | 678,578.12   | E36001        |
| Labor                                                  |                           | 2,683,936.25 | E36101/E36201 |
| Total Components                                       |                           | 4,980,739.76 | E36101/E36201 |
| Transformers                                           | 2 Units @ 1,780,041.35 ea | 3,560,082.70 | E36201        |
| Control House and Communications                       |                           | 61,587.93    | E36101/E36201 |
| Bus and Breakers, and Switches                         |                           | 325,276.84   | E36101/E36201 |
| Other                                                  |                           | 644,804.72   | E36101/E36201 |
| Total excluding AFUDC                                  |                           | 9,176,803.57 | N/A           |
| Total including AFUDC                                  |                           | 9,533,912.03 |               |

| Substation Name                                        |                           | Tanner        |                      |
|--------------------------------------------------------|---------------------------|---------------|----------------------|
| Project Portion                                        |                           | Cost          | FERC Accounts        |
| Design, Planning, Engineering                          |                           | 166,961.21    | E36101/E36201/E39701 |
| Land, Land Rights, and other common costs (if T and D) |                           | 3,334,676.77  | E36001               |
| Labor                                                  |                           | 3,256,459.32  | E36101/E36201/E39701 |
| Total Components                                       |                           | 4,897,583.05  | E36101/E36201/E39701 |
| Transformers                                           | 2 Units @ 1,814,548.20 ea | 3,629,096.40  | E36201               |
| Control House and Communications                       |                           | 70,434.21     | E36101/E36201/E39701 |
| Bus and Breakers, and Switches                         |                           | 298,429.87    | E36201               |
| Other                                                  |                           | 877,266.10    | E36101/E36201/E39701 |
| Total excluding AFUDC                                  |                           | 12,532,946.45 | N/A                  |
| Total including AFUDC                                  |                           | 12,790,474.13 |                      |

| Substation Name                                        | Sandy Point                                    |  |               |               |
|--------------------------------------------------------|------------------------------------------------|--|---------------|---------------|
| Project Portion                                        |                                                |  | Cost          | FERC Accounts |
| Design, Planning, Engineering                          |                                                |  | 121,939.97    | E36101/E36201 |
|                                                        |                                                |  |               |               |
| Land, Land Rights, and other common costs (if T and D) |                                                |  | 1,019,697.33  | E36001        |
|                                                        |                                                |  |               |               |
| Labor                                                  |                                                |  | 4,716,734.58  | E36101/E36201 |
|                                                        |                                                |  |               |               |
| Total Components                                       |                                                |  | 3,502,141.35  | E36101/E36201 |
|                                                        |                                                |  |               |               |
| Transformers                                           | 1 Unit @ 1,153,896.29<br>1 Unit @ 1,133,828.90 |  | 2,287,725.19  | E36201        |
|                                                        |                                                |  |               |               |
| Control House and Communications                       |                                                |  | 68,488.61     | E36201        |
|                                                        |                                                |  |               |               |
| Bus and Breakers, and Switches                         |                                                |  | 229,248.77    | E36201        |
|                                                        |                                                |  |               |               |
| Other                                                  |                                                |  | 1,373,609.52  | E36101/E36201 |
|                                                        |                                                |  |               |               |
| Total excluding AFUDC                                  |                                                |  | 10,734,122.75 | N/A           |
| Total including AFUDC                                  |                                                |  | 11,042,087.70 |               |

| Substation Name                                        | Village Creek           |  |               |               |
|--------------------------------------------------------|-------------------------|--|---------------|---------------|
| Project Portion                                        |                         |  | Cost          | FERC Accounts |
| Design, Planning, Engineering                          |                         |  | 276,089.30    | E36101/E36201 |
|                                                        |                         |  |               |               |
| Land, Land Rights, and other common costs (if T and D) |                         |  | 1,255,612.00  | E36001        |
|                                                        |                         |  |               |               |
| Labor                                                  |                         |  | 5,072,180.02  | E36101/E36201 |
|                                                        |                         |  |               |               |
| Total Components                                       |                         |  | 4,523,808.71  | E36101/E36201 |
|                                                        |                         |  |               |               |
| Transformers                                           | 2 Unit @ \$1,656,589.80 |  | 3,313,176.60  | E36201        |
|                                                        |                         |  |               |               |
| Control House and Communications                       |                         |  | 51,511.14     | E36201        |
|                                                        |                         |  |               |               |
| Bus and Breakers, and Switches                         |                         |  | 357,844.52    | E36201        |
|                                                        |                         |  |               |               |
| Other                                                  |                         |  | 1,087,513.11  | E36101/E36201 |
|                                                        |                         |  |               |               |
| Total excluding AFUDC                                  |                         |  | 12,215,203.14 | N/A           |
| Total including AFUDC                                  |                         |  | 12,783,584.78 |               |

| Substation Name                                        | Jordan 35KV         |  |              |                      |
|--------------------------------------------------------|---------------------|--|--------------|----------------------|
| Project Portion                                        |                     |  | Cost         | FERC Accounts        |
| Design, Planning, Engineering                          |                     |  | 73,932.00    | E35301               |
|                                                        |                     |  |              |                      |
| Land, Land Rights, and other common costs (if T and D) |                     |  | 0.00         | N/A                  |
|                                                        |                     |  |              |                      |
| Labor                                                  |                     |  | 1,432,304.46 | E35201/E35301/E39701 |
|                                                        |                     |  |              |                      |
| Total Components                                       |                     |  | 4,587,895.21 | E35201/E35301/E39701 |
|                                                        |                     |  |              |                      |
| Transformers                                           | 2 @ 1,766,168.03 ea |  | 3,532,336.06 | E35301               |
|                                                        |                     |  |              |                      |
| Control House and Communications                       |                     |  | 52,273.92    | E35201               |
|                                                        |                     |  |              |                      |
| Bus and Breakers, and Switches                         |                     |  | 300,096.63   | E35201/E35301        |
|                                                        |                     |  |              |                      |
| Other                                                  |                     |  | 438,006.93   | E35201/E35301/E39701 |
|                                                        |                     |  |              |                      |
| Total excluding AFUDC                                  |                     |  | 6,532,138.60 | N/A                  |
| Total including AFUDC                                  |                     |  | 6,906,745.83 |                      |

| Substation Name Meadow                                 |  |  | Cost         | FERC Accounts |
|--------------------------------------------------------|--|--|--------------|---------------|
| <b>Project Portion</b>                                 |  |  |              |               |
| Design, Planning, Engineering                          |  |  | 293,173.23   | E35201/E35301 |
|                                                        |  |  |              |               |
| Land, Land Rights, and other common costs (if T and D) |  |  | 0.00         | N/A           |
|                                                        |  |  |              |               |
| Labor                                                  |  |  | 1,505,500.57 | E35201/E35301 |
|                                                        |  |  |              |               |
| Total Components                                       |  |  | 3,365,024.67 | E35201/E35301 |
|                                                        |  |  |              |               |
| Transformers                                           |  |  | 0.00         | N/A           |
|                                                        |  |  |              |               |
| Control House and Communications                       |  |  | 109,932.08   | E35201/E35301 |
|                                                        |  |  |              |               |
| Bus and Breakers, and Switches                         |  |  | 1,054,884.73 | E35301        |
|                                                        |  |  |              |               |
| Other                                                  |  |  | 799,712.33   | E35201/E35301 |
|                                                        |  |  |              |               |
| Total excluding AFUDC                                  |  |  | 5,963,410.80 | N/A           |
| Total including AFUDC                                  |  |  | 6,324,083.57 |               |

| Substation Name Rothwood                               |  |  | Cost          | FERC Accounts        |
|--------------------------------------------------------|--|--|---------------|----------------------|
| <b>Project Portion</b>                                 |  |  |               |                      |
| Design, Planning, Engineering                          |  |  | 548,699.44    | E35001/E35201/E35301 |
|                                                        |  |  |               |                      |
| Land, Land Rights, and other common costs (if T and D) |  |  | 3,820,518.08  | E35001               |
|                                                        |  |  |               |                      |
| Labor                                                  |  |  | 5,152,848.45  | E35001/E35201/E35301 |
|                                                        |  |  |               |                      |
| Total Components                                       |  |  | 9,566,764.03  | E35201/E35301        |
|                                                        |  |  |               |                      |
| Transformers 1 @ \$4,659,990.35                        |  |  | 4,659,990.35  | E35301               |
|                                                        |  |  |               |                      |
| Control House and Communications                       |  |  | 87,776.38     | E35201/E35301        |
|                                                        |  |  |               |                      |
| Bus and Breakers, and Switches                         |  |  | 1,467,164.10  | E35201/E35301        |
|                                                        |  |  |               |                      |
| Other                                                  |  |  | 1,681,230.98  | E35001/E35201/E35301 |
|                                                        |  |  |               |                      |
| Total excluding AFUDC                                  |  |  | 20,770,060.98 | N/A                  |
| Total including AFUDC                                  |  |  | 22,185,442.22 |                      |

| Substation Name Zenith 345KV                           |  |  | Cost          | FERC Accounts |
|--------------------------------------------------------|--|--|---------------|---------------|
| <b>Project Portion</b>                                 |  |  |               |               |
| Design, Planning, Engineering                          |  |  | 303,108.31    | E35201/E35301 |
|                                                        |  |  |               |               |
| Land, Land Rights, and other common costs (if T and D) |  |  | 0.00          | N/A           |
|                                                        |  |  |               |               |
| Labor                                                  |  |  | 5,992,373.24  | E35201/E35301 |
|                                                        |  |  |               |               |
| Total Components                                       |  |  | 5,706,185.82  | E35201/E35301 |
|                                                        |  |  |               |               |
| Transformers                                           |  |  | 0.00          | N/A           |
|                                                        |  |  |               |               |
| Control House and Communications                       |  |  | 82,870.00     | E35201        |
|                                                        |  |  |               |               |
| Bus and Breakers, and Switches                         |  |  | 2,008,419.63  | E35201/E35301 |
|                                                        |  |  |               |               |
| Other                                                  |  |  | 2,105,134.62  | E35201/E35301 |
|                                                        |  |  |               |               |
| Total excluding AFUDC                                  |  |  | 14,106,801.99 | N/A           |
| Total including AFUDC                                  |  |  | 15,163,970.50 |               |

| Substation Name                                        |  | Zenith 138KV |                      |
|--------------------------------------------------------|--|--------------|----------------------|
| Project Portion                                        |  | Cost         | FERC Accounts        |
| Design, Planning, Engineering                          |  | 26,464.68    | E35201/E35301        |
| Land, Land Rights, and other common costs (if T and D) |  |              | N/A                  |
| Labor                                                  |  | 2,958,655.86 | E35201/E35301/E35601 |
| Total Components                                       |  | 3,367,252.07 | E35201/E35301/E35601 |
| Transformers                                           |  | 0.00         | N/A                  |
| Control House and Communications                       |  | 7,273.98     | E35301               |
| Bus and Breakers, and Switches                         |  | 1,806,389.17 | E35301               |
| Other                                                  |  | 743,746.35   | E35201/E35301/E35601 |
| Total excluding AFUDC                                  |  | 7,096,118.96 | N/A                  |
| Total including AFUDC                                  |  | 7,546,157.37 |                      |

| Substation Name                                        |                  | Jordan 345/138KV |                                    |
|--------------------------------------------------------|------------------|------------------|------------------------------------|
| Project Portion                                        |                  | Cost             | FERC Accounts                      |
| Design, Planning, Engineering                          |                  | 543,333.47       | E35001/E36001/E35201/E35301/E39701 |
| Land, Land Rights, and other common costs (if T and D) |                  | 2,014,000.00     | E35001/E36001                      |
| Labor                                                  |                  | 8,548,331.46     | E35001/E36001/E35201/E35301/E39701 |
| Total Components                                       |                  | 12,486,604.21    | E35201/E35301/E39701               |
| Transformers                                           | 1 @ 5,579,205.00 | 5,579,205.00     | E35201                             |
| Control House and Communications                       |                  | 246,473.24       | E35201/E35301/E39701               |
| Bus and Breakers, and Switches                         |                  | 2,590,946.16     | E35201/E35301                      |
| Other                                                  |                  | 1,877,704.10     | E35001/E36001/E35201/E35301/E39701 |
| Total excluding AFUDC                                  |                  | 25,469,973.24    | N/A                                |
| Total including AFUDC                                  |                  | 27,090,598.73    |                                    |

| Substation Name                                        |                     | Jones Creek   |                      |
|--------------------------------------------------------|---------------------|---------------|----------------------|
| Project Portion                                        |                     | Cost          | FERC Accounts        |
| Design, Planning, Engineering                          |                     | 579,206.36    | E35201/E35301/E39701 |
| Land, Land Rights, and other common costs (if T and D) |                     | 0.00          | N/A                  |
| Labor                                                  |                     | 44,043,172.88 | E35201/E35301/E39701 |
| Total Components                                       |                     | 16,345,603.94 | E35201/E35301/E39701 |
| Transformers                                           | 2 @ 4,276,957.50 ea | 8,553,915.00  | E35301               |
| Control House and Communications                       |                     | 186,535.84    | E35201/E35301/E39701 |
| Bus and Breakers, and Switches                         |                     | 2,240,792.33  | E35201/E35301        |
| Other                                                  |                     | 5,227,059.94  | E35201/E35301/E39701 |
| Total excluding AFUDC                                  |                     | 66,195,043.12 | N/A                  |
| Total including AFUDC                                  |                     | 68,422,608.94 |                      |

| Substation Name                                        |                           | Bailey        |               |  |
|--------------------------------------------------------|---------------------------|---------------|---------------|--|
| Project Portion                                        |                           | Cost          | FERC Accounts |  |
| Design, Planning, Engineering                          |                           | 492,513.36    | E35301        |  |
| Land, Land Rights, and other common costs (if T and D) |                           | 0.00          | N/A           |  |
| Labor                                                  |                           | 6,698,737.35  | E35201/E35301 |  |
| Total Components                                       |                           | 4,175,039.57  | E35301        |  |
| Transformers                                           |                           | 0.00          | N/A           |  |
| Control House and Communications                       |                           | 82,138.51     | E35301        |  |
| Bus and Breakers, and Switches                         |                           | 1,361,235.01  | E35301        |  |
| Other                                                  | includes (1,500,000) CIAC | (519,488.35)  | E35201/E35301 |  |
| Total excluding AFUDC                                  |                           | 10,846,801.93 | N/A           |  |
| Total including AFUDC                                  |                           | 11,129,293.54 |               |  |

| Substation Name                                        |                           | Oyster Creek |               |  |
|--------------------------------------------------------|---------------------------|--------------|---------------|--|
| Project Portion                                        |                           | Cost         | FERC Accounts |  |
| Design, Planning, Engineering                          |                           | 82,733.14    | E35201/E35301 |  |
| Land, Land Rights, and other common costs (if T and D) |                           | 0.00         | N/A           |  |
| Labor                                                  |                           | 3,974,939.42 | E35201/E35301 |  |
| Total Components                                       |                           | 3,574,889.35 | E35201/E35301 |  |
| Transformers                                           |                           | 0.00         | N/A           |  |
| Control House and Communications                       |                           | 342,286.69   | E35301        |  |
| Bus and Breakers, and Switches                         |                           | 654,049.54   | E35301        |  |
| Other                                                  | includes (1,030,000) CIAC | 22,375.55    | E35201/E35301 |  |
| Total excluding AFUDC                                  |                           | 7,654,937.46 | N/A           |  |
| Total including AFUDC                                  |                           | 7,872,586.16 |               |  |

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC**  
**2019 CEHE RATE CASE**  
**DOCKET NO. 49421-SOAH DOCKET NO. 473-19-3864**  
**PUBLIC UTILITY COMMISSION OF TEXAS**  
**REQUEST NO.: PUC01-40**

**QUESTION:**

For any new substation or high voltage switching stations for which the utility seeks rate recovery, provide the following.

- a. Whether the station was included as part of a project discussed in Questions 1-37 or 1-38, above.
- b. The first MCPR on which the project was reported (control number, item number, project numbers)
- c. The final MCPR on which the project was reported (control number, item number, project numbers)
- d. The initial estimated project cost from internal utility project approval, the percent of contingency cost included in the estimate, the final project cost, and the percent difference from the estimated cost
- e. A breakdown by FERC account (and subaccount) for the total project costs booked to each account that were associated with the project.

**ANSWER:**

- a. The new substations and high voltage switching stations for which the utility seeks rate recovery may have been part of a project discussed in Questions 1-37 and 1-38, but the costs for the actual substation construction are not included in the estimates or final cost reports.
- b. New substation construction is not filed on the MCPR, only the transmission work to interconnect the new substation.
- c. New substation construction is not filed on the MCPR, only the transmission work to interconnect the new substation.
- d. See attached PUC1-40 Attachment 1
- e. See attached PUC1-40 Attachment 1

**SPONSOR (PREPARER):**

Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**

PUC01-40 Attachment 1.xlsx

| Substation Name | Estimated Cost | Actual Cost   | % Contingency | % Difference | FERC Account |               |               |          |              |              |               |            |              | CWIP/RWIP     | Total |
|-----------------|----------------|---------------|---------------|--------------|--------------|---------------|---------------|----------|--------------|--------------|---------------|------------|--------------|---------------|-------|
|                 |                |               |               |              | E35001       | E352001       | E353001       | E35601   | E36001       | E36101       | E36201        | E39701     |              |               |       |
| Meadow          | \$ 7,000,000   | \$ 6,324,083  | 0%            | -9.66%       | 0.00         | 262,580.75    | 6,061,502.52  | 0.00     | 0.00         | 0.00         | 0.00          | 0.00       | 0.00         | 6,324,083.27  |       |
| Rothwood        | \$ 21,500,000  | \$ 22,185,442 | 0%            | 3.19%        | 4,343,111.96 | 3,490,297.44  | 14,352,032.82 |          |              |              |               |            |              | 22,185,442.22 |       |
| Zenith 345kv    | \$ 15,400,000  | \$ 15,163,971 | 0%            | -1.53%       |              | 4,602,554.43  | 10,561,416.09 |          |              |              |               |            |              | 15,163,970.52 |       |
| Zenith 138kv    | \$ 16,800,000  | \$ 7,546,157  | 0%            | -55.08%      |              | 135,726.99    | 7,088,332.04  | 9,373.70 |              |              | 312,724.59    |            |              | 7,546,157.32  |       |
| Jordan          | \$ 30,750,000  | \$ 27,090,599 | 0%            | -11.90%      |              | 3,953,653.20  | 14,086,698.45 |          | 2,541,402.99 |              | 6,132,155.23  | 376,688.86 |              | 27,090,598.73 |       |
| Jones Creek     | \$ 52,900,000  | \$ 68,422,609 | 0%            | 29.34%       | 0.00         | 31,196,835.90 | 37,140,121.95 | 0.00     | 0.00         | 0.00         | 0.00          | 85,651.09  | 0.00         | 68,422,608.94 |       |
| Bailey          | \$ 13,630,000  | \$ 11,129,294 | 0%            | -18.35%      | 0.00         | 91,822.41     | 10,964,586.35 | 0.00     | 0.00         | 0.00         | 0.00          | 0.00       | 72,884.78    | 11,129,293.54 |       |
| Oyster Creek    | \$ 13,500,000  | \$ 7,872,586  | 0%            | -41.68%      | 0.00         | 285,772.09    | 8,537,637.26  | 0.00     | 0.00         | 0.00         | 0.00          | 0.00       | (950,823.19) | 7,872,586.16  |       |
| Springwoods     | \$ 11,660,000  | \$ 13,505,096 | 0%            | 15.82%       | 1,557,633.98 |               |               |          |              | 3,769,176.22 | 8,178,286.18  |            |              | 13,505,096.38 |       |
| Fry Road        | \$ 8,745,000   | \$ 9,533,912  | 0%            | 9.02%        |              |               |               |          | 733,910.72   | 2,030,108.96 | 6,769,892.35  |            |              | 9,533,912.03  |       |
| Tanner          | \$ 11,000,000  | \$ 12,790,474 | 0%            | 16.28%       | 0.00         | 0.00          | 0.00          | 0.00     | 3,636,192.11 | 1,402,786.64 | 7,687,318.89  | 15,020.72  | 49,156.13    | 12,790,474.49 |       |
| Sandy Point     | \$ 6,160,000   | \$ 11,042,088 | 0%            | 79.25%       | 0.00         | 0.00          | 0.00          | 0.00     | 0.00         | 2,335,805.63 | 6,911,089.57  | 0.00       | 1,795,192.50 | 11,042,087.70 |       |
| Village Creek   | \$ 11,880,000  | \$ 12,783,585 | 0%            | 7.61%        | 0.00         | 0.00          | 0.00          | 0.00     | 1,255,612.20 | 671,309.65   | 10,414,457.83 | 0.00       | 442,205.10   | 12,783,584.78 |       |
| Jordan 35KV     | \$ 6,434,799   | \$ 6,906,746  | 0%            | 7.33%        | 0.00         | 62,192.07     | 6,840,688.52  | 0.00     | 0.00         | 0.00         | 0.00          | 366.38     | 3,498.86     | 6,906,745.83  |       |

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC  
2019 CEHE RATE CASE  
DOCKET 49421-SOAH DOCKET NO. 473-19-3864  
PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC05-08**

**QUESTION:**

**Miscellaneous**

In reference to the substation costs in Exhibit DB-5:

- a. Are these pre-construction cost *estimates* or actual final project costs?
- b. If these costs are estimates, please provide the actual final project costs.
- c. For the Tanner Substation, please explain the difference between the Total Amount listed in DB-5 (\$13,452,950) and the 'Total including AFUDC' listed in CenterPoint's response to Staffs 1-39 for this substation (\$12,790,474.13).
- d. For the Springwoods Substation, please explain the difference between the Total Amount listed in DB-5 (\$21,332,237) and the 'Total including AFUDC' listed in CenterPoint's response to Staffs 1-39 for this substation (~\$13.5M).
- e. For the Sandy Point Substation, please explain the difference between the Total Amount listed in DB-5 (\$8,466,500) and the 'Total including AFUDC' listed in CenterPoint's response to Staffs 1-39 for this substation (\$11,042,087.70).

**ANSWER:**

In reference to the substation costs in Exhibit DB-5:

- a. These are pre-construction cost estimates for planning purposes.
- b. The actual final substation project costs, as reported in the response to PUC 1-39 are:
  1. Springwoods \$13,505,096
  2. Fry Road \$9,533,912
  3. Tanner \$12,790,474
  4. Sandy Point \$11,042,088
  5. Village Creek \$12,783,585
- c. For Tanner Substation, the Total Amount listed in DB-5 (\$13,452,950) includes major underground (MUG) construction and OH distribution construction. The amount listed in the response to PUC 1-39 includes Overheads and AFUDC (Allowance for Funds Used During Construction). Also, the cost estimate in DB-5 did not include the cost of the property. The net result is the actual cost was less than the estimate. Please see attachment PUC05-08 Substation Costs Attachment 1.xlsx for a detailed reconciliation of these costs and differences.
- d. For Springwoods Substation, the Total Amount listed in DB-5 (\$21,332,237) includes transmission construction, MUG construction and OH distribution construction. The amount listed in the response to PUC 1-39 includes Overheads and AFUDC (Allowance for Funds Used During Construction). The net result is the actual cost was greater than the estimate. Please see attachment PUC05-08 Substation Costs Attachment 1.xlsx for a detailed reconciliation of these costs and differences.
- e. For Sandy Point Substation, the Total Amount listed in DB-5 (\$8,466,500) includes transmission construction, MUG construction and OH distribution construction. The amount listed in the response to PUC 1-39 includes Overheads and AFUDC (Allowance for Funds Used During Construction). Also, the DB-5 estimate did not include the cost of the property and security fencing. The net result is the actual cost was greater than the estimate. Please see attachment PUC05-08 Substation Costs Attachment 1.xlsx for a detailed reconciliation of these costs and differences.

For all of the substations listed in c), d) and e) above, the estimate was made at least a year and a half in advance of construction. Estimates are based on projected costs, rule of thumb guidelines, and a preliminary understanding of actual conditions, including environmental conditions, and project scope, before the work order is prepared. These estimates are used for planning purposes. The Engineering Project Justification and Construction Summaries in DB-5 are planning documents. As such, there will be a difference between the estimated cost and the actual cost.

**SPONSOR (PREPARER):**

Dale Bodden (Dale Bodden)

**RESPONSIVE DOCUMENTS:**

PUC05-08 Substation Costs Attachment 1.xlsx

**PUC 5-8 Substation Costs Attachment 1.xlsx****Tanner Substation****Substation Costs (Inside the fence)**

| Estimated Costs in DB-5 | Purpose         | Final Costs in PUC 1-39 | Purpose      |
|-------------------------|-----------------|-------------------------|--------------|
| \$13,452,950            |                 | \$12,790,470            |              |
| -\$3,150,000            | MUG             | -\$877,266              | Overheads    |
| <u>-\$302,950</u>       | <u>OH Dist</u>  | <u>-\$257,527</u>       | <u>AFUDC</u> |
| \$10,000,000            | Subtotal        | \$11,655,677            | Subtotal     |
| <u>\$3,334,677</u>      | <u>Property</u> |                         |              |
| <b>\$13,334,677</b>     | <b>Total</b>    | <b>\$11,655,677</b>     | <b>Total</b> |

**Springwoods Substation****Substation Costs (Inside the fence)**

| Estimated Costs in DB-5 | Purpose        | Final Costs in PUC 1-39 | Purpose      |
|-------------------------|----------------|-------------------------|--------------|
| \$21,305,237            | Note 1         | \$13,505,096            |              |
| -\$7,000,000            | Transmission   | -\$887,769              | Overheads    |
| -\$2,867,737            | MUG            | <u>-\$808,728</u>       | <u>AFUDC</u> |
| -\$68,180               | OH Dist        | \$11,808,599            | Subtotal     |
| <u>-\$769,320</u>       | <u>OH Dist</u> |                         |              |
| <b>\$10,600,000</b>     | <b>Total</b>   | <b>\$11,808,599</b>     | <b>Total</b> |

Note 1: This number in DB-5 was mistakenly totaled to be \$21,332,237.

**Sandy Point Substation****Substation Costs (Inside the fence)**

| Estimated Costs in DB-5 | Purpose                 | Final Costs in PUC 1-39 | Purpose      |
|-------------------------|-------------------------|-------------------------|--------------|
| \$8,466,500             |                         | \$11,042,087            |              |
| -\$2,300,000            | Transmission            | -\$1,373,609            | Overheads    |
| -\$465,000              | MUG                     | <u>-\$307,965</u>       | <u>AFUDC</u> |
| <u>-\$101,500</u>       | <u>OH Dist</u>          | \$9,360,513             | Subtotal     |
| \$5,600,000             | Subtotal                |                         |              |
| \$1,019,697             | Property                |                         |              |
| <u>\$1,000,000</u>      | <u>Security Fencing</u> |                         |              |
| <b>\$7,619,697</b>      | <b>Total</b>            | <b>\$9,360,513</b>      | <b>Total</b> |

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC  
2019 CEHE RATE CASE  
DOCKET 49421-SOAH DOCKET NO. 473-19-3864  
PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC06-22**

**QUESTION:**

For the project listed under Project Number HLP/00/1055 and described in the WP RMP-2 Capital Project List Summaries (years 2014-2017) as "Distribution line clearance corrections between transmission and distribution facilities to meet National Electrical Safety Code (NESC) requirements" (and also found in the 'WP RMP-2 Capital Project List Detail' spreadsheets for these years).

- a. When were the associated transmission and distribution lines placed into service?
- b. What dollar amount, if any, was incurred during the rebuilding, reconductoring, or upgrading of existing electric facilities?
- c. Please elaborate on why these corrections were necessary and explain how CenterPoint become aware of the need to correct this clearance.
- d. Did a change to NESC requirements necessitate this work? Please provide supporting documentation as needed.
- e. Why does CenterPoint believe this work should be capitalized instead of treated as an operation or maintenance expense?

**ANSWER:**

For the project listed under Project Number HLP/00/1055 and described in the WP RMP-2 Capital Project List Summaries (years 2014-2017) as "Distribution line clearance corrections between transmission and distribution facilities to meet National Electrical Safety Code (NESC) requirements", see following responses:

- a. Project 1055 represents CEHE's Lidar based Transmission Line Clearance Program. CEHE performs Lidar surveys on approximately 20% of the transmission system each year to identify and correct NESC transmission line clearance issues. During the 2014-2017 time-period, 204 transmission line clearance issues, involving 158 distribution circuits and 69 transmission circuits, were addressed by modifications to distribution facilities. In addition, 85 transmission clearance issues were resolved by modifications to 55 transmission circuits. Information on the in-service dates for the transmission lines and distribution lines is not readily available.
- b. Between 2014 and 2017, a total of \$19,376,931 was spent on this project.
- c. CEHE's Transmission Line Clearance Program (1055) utilizes LIDAR technology to determine clearances as compared to the NESC standard at the time of survey. Approximately 20% of the transmission system is surveyed each year. Clearance corrections are addressed by modifications to transmission facilities, distribution facilities, or both.
- d. No. This work is not a result of any changes to NESC requirements.
- e. This work should be capitalized because the modifications included the replacement of poles, pole hardware, conductors, and other capital facilities.

**SPONSOR (PREPARER):**

Randal Pryor/Martin Narendorf (Randal Pryor/Martin Narendorf)

**RESPONSIVE DOCUMENTS:**  
None

**CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC  
2019 CEHE RATE CASE  
DOCKET 49421-SOAH DOCKET NO. 473-19-3864  
PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC06-24**

**QUESTION:**

In CenterPoint's response to the Staff's first RFI, PUC01-38 Attachment 1, pages 12-15, CenterPoint provides a list of projects and the percentages of cost overruns from the original project cost estimates to the actual project cost. Provide a detailed explanation of, and reasons for, the cost overruns that are greater than 10% of the estimated cost of each of the following projects. Include and break down the estimated and actual costs into the appropriate FERC accounts:

| Project                 | Cost Overrun |
|-------------------------|--------------|
| a. W. A. Parrish Sub    | 10.7%        |
| b. Fort Ben- Rosenberg  | 40.1 %       |
| c. Flewellen- Rosenberg | 49%          |
| d. Ranger Sub           | 7508%        |
| e. Marine Sub           | 29%          |
| f. Dow Sub              | 51%          |
| g. Alexander Island Sub | 104%         |
| h. La Marque Sub        | 92%          |
| i. Sandy Point Sub      | 89%          |
| j. Jones Creek Sub      | 29%          |
| k. Springwoods Sub      | 16%          |
| l. Tanner Sub           | 16%          |

**ANSWER:**

CenterPoint Houston's response to PUC01-38 provided, among other things, the percent difference between the *Filed Initial Estimated Project Cost* and the *Final Actual Project Cost* for the listed projects. For some of those projects, the cost decreased between the *Filed Initial Estimated Project Cost* and the *Final Actual Project Cost*, and for other projects, the cost increased. In addition, the *Filed Initial Estimated Project Costs* are developed prior to detailed engineering or construction analysis. CenterPoint Houston's final construction reports compare the final actual cost to the final estimate, rather than the initial estimate. For the projects identified in PUC06-24, CenterPoint Houston provides the following responses regarding the differences between the *Filed Initial Estimated Project Cost* and the *Final Actual Project Cost*:

- a. **W. A. Parrish Sub - 10.7%:** There were no major scope changes to this project, but a variety of small cost differences to labor and materials resulted in a 10.7% cost difference.
- b. **Fort Bend - Rosenberg - 40.1 %:** After the Company initially filed this project, the route was significantly modified due to ROW constraints and negotiations with parties such as the Railroad Museum in Rosenberg. While a small amount of bypass work was included in the initial estimate, additional bypass work was needed. Crews were mobilized and demobilized more than expected due to the scope changes, resulting in increased labor costs.
- c. **Flewellen- Rosenberg - 49%:** This project converted 69kV circuits to 138kV while the substation was also being upgraded. The transmission work needed to be done in parallel with substation work ensure continuity of service. Scheduling parallel work required additional mobilization and demobilization that was not planned for in the initial estimates.
- d. **Ranger Sub - 7508%:** The final actual project cost was paid in full by the customer for this project. The company is not seeking recovery of these costs in this case.

- e. **Marine Sub - 29%:** The final actual project cost was paid in full by the customer for this project. The company is not seeking recovery of these costs in this case.
- f. **Dow Sub - 51%:** The final actual project cost was paid in full by the customer for this project. The company is not seeking recovery of these costs in this case.
- g. **Alexander Island Sub - 104%:** Foundations were staked with the wrong line pull orientation which wasn't discovered until after the foundations were built. Foundations were removed and reconstructed. Structures had to be modified and some additional material had to be ordered.
- h. **La Marque Sub - 92%:** Tower design and location changed during detailed engineering phase which led to some material errors. One angle structure had to be removed and replaced.
- i. **Sandy Point Sub - 89%:** The substation site changed after the initial estimate, requiring more temporary work than expected. Crews were mobilized and demobilized more than expected do the schedule changes, resulting in increased labor costs.
- j. **Jones Creek Sub – 29%:** The Jones Creek substation project included in the Company's response to PUC 1-38 covered only the transmission work to connect Jones Creek Substation. No substation construction costs were included. The initial filed estimate for the project was \$15,021,000 and the final actual project cost was \$13,320,426, representing a -11.3% difference.
- k. **Springwoods Sub – 16%:** The Springwoods substation project included in the Company's response to PUC 1-37 covered only the transmission work to connect Springwoods Substation. No substation construction costs were included. The initial filed estimate for the project was \$9,547,000 and the final actual project cost was \$8,593,292, representing a -10% difference.
- l. **Tanner Sub – 16%:** The Tanner substation project included in the Company's response to PUC 1-38 covered only the transmission work to connect Tanner Substation. No substation construction costs were included. The initial filed estimate for the project was \$7,417,000 and the final actual project cost was \$6,641,378, representing a -10.5% difference.

**SPONSOR (PREPARER):**  
Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**  
None

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

**PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC11-01**

**QUESTION:**

For the following projects which were reviewed and approved by ERCOT, please indicate the total cost that the company spent for the project and show a comparison to the estimated cost at the time of ERCOT approval. Please identify, by PUC docket number, any CCNs, which were approved by the Commission in association with the project. Additionally, identify all the Monthly Construction Progress Reports that were filed with the Commission that report the completion of the project (either the entire project or each of the total project's component projects) and the final costs associated with these projects. If the project has not yet been completed and the company is not seeking inclusion of any associated costs for the project, then please indicate so.

- a. CNP Mount Belvieu Area Upgrade Project
- b. CNP Freeport Area Upgrade Project
- c. CNP Fort Bend Area Upgrade Project
- d. CNP Katy Area Upgrades
- e. CenterPoint Energy Jones Creek Project
- f. CNP Houston Region Import Capacity Project
- g. CNP Dow-Velasco Project
- h. Houston Import RPG Project
- i. CenterPoint Energy Angleton to Petson to Monsan Ckt 04 Rebuild Project
- j. CenterPoint Energy Southwyck — Algoa Corner Rebuild Project
- k. CenterPoint Energy-Fort Bend to West Columbia 69 kV to 138Kv Circuit 45 Conversion Project
- l. CenterPoint Energy-Freeport Master Plan Project

**ANSWER:**

For these projects that were reviewed and approved by ERCOT, please reference PUC11-01 Attachment 1 page 1 for a table showing the estimated cost at the time of ERCOT approval, the total cost that the company spent for the project, a comparison of the two, and any PUC dockets for CCNs associated with these projects.

For a list of all Monthly Construction Progress Report projects associated with the projects listed above, please refer to PUC11-01 Attachment 1 page 2-4.

**SPONSOR (PREPARER):**  
Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**  
PUC11-01 Attachment 1.xlsx

|                                                                                                | Estimate Submitted to ERCOT                                                  |               |                | Final Actual Cost:          |               |                | % Difference | CCN Docket                     |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------|----------------|-----------------------------|---------------|----------------|--------------|--------------------------------|
|                                                                                                | Transmission                                                                 | Substation    | Total          | Transmission                | Substation    | Total          |              |                                |
| a) CNP Mont Belvieu area Upgrade Project                                                       | \$ 13,170,000                                                                | \$ 28,905,000 | \$ 42,075,000  | \$ 13,281,971               | \$ 27,787,386 | \$ 41,069,357  | -2.39%       | n/a                            |
| b) CNP Freeport Area Upgrade Projects                                                          | \$ 31,950,000                                                                | \$ 15,225,000 | \$ 47,175,000  | \$ 69,048,973               | \$ 18,534,574 | \$ 87,583,547  | 85.66%       | n/a                            |
| c) CNP Fort Bend Area Upgrade Project                                                          | \$ 7,630,000                                                                 | \$ 9,284,000  | \$ 16,914,000  | \$ 13,604,891               | \$ 7,371,413  | \$ 20,976,304  | 24.02%       | n/a                            |
| d) CNP Katy Area Upgrades                                                                      | \$ 7,400,000                                                                 | \$ 12,967,000 | \$ 20,367,000  | \$ 13,845,035               | \$ 10,779,147 | \$ 24,624,182  | 20.90%       | 44242 Zenith to Franz          |
| e) CenterPoint Energy Jones Creek Project <sup>1</sup>                                         | \$ 25,650,000                                                                | \$ 54,130,000 | \$ 79,780,000  | \$ 40,743,578               | \$ 72,559,354 | \$ 113,302,932 | 42.02%       | n/a                            |
| f) CNP Houston Region Import Capacity Project <sup>2</sup>                                     |                                                                              |               | \$ 296,270,000 | \$ 284,853,657              | \$ 13,617,598 | \$ 298,471,255 | 0.74%        | 44547 Brazos Valley Connection |
| g) CNP Dow - Velasco Project                                                                   | \$ 17,825,000                                                                | \$ 1,035,000  | \$ 18,860,000  | \$ 3,007,291                | \$ 16,394,533 | \$ 19,401,824  | 2.87%        | n/a                            |
| h) Houston Import RPG Project                                                                  | This project is the same as f) CNP Houston Region Import Capacity Project    |               |                |                             |               |                |              |                                |
| i) CenterPoint Energy Angleton to Petson to Monahan Ckt 04 Rebuild Project                     | \$ 35,300,000                                                                | \$ -          | \$ 35,300,000  | Project is not yet complete |               |                |              | n/a                            |
| j) CenterPoint Energy Southwyck - Algoa Corner Rebuild Project                                 | \$ 20,080,000                                                                | \$ -          | \$ 20,080,000  | Project is not yet complete |               |                |              | n/a                            |
| k) CenterPoint Energy - Fort Bend to West Columbia 69kV to 138kV Circuit 45 Conversion Project | \$ 23,700,000                                                                | \$ 28,000,000 | \$ 51,700,000  | Project is not yet complete |               |                |              | n/a                            |
| l) CenterPoint Energy - Freeport Master Plan Project <sup>3</sup>                              | \$214.4 for Bailey to Jones Creek and<br>\$32.3M for Bridge the Gap Upgrades |               |                | Project is not yet complete |               |                |              | 44629 Bailey to Jones Creek    |

<sup>1</sup> One Transmission sub-project of the Jones Creek Project has not been finalized, therefore the Company is not seeking inclusion of approximately \$22M of the \$113.3M reported in the table above. Per the Monthly Construction Progress Report, we are 98% complete and there will only be minimal charges, if any, added to this total amount.

<sup>2</sup> \$296,270,000 was the estimated amount for the route approved by the PUC in the CCN process. The ERCOT review of Houston Region Import Capacity Project included the entire project's cost of \$590M and did not breakout CenterPoint's portion of the project.

<sup>3</sup> In December 2018, ERCOT reaffirmed their recommendation for the Bailey to Jones Creek project at an updated estimate of \$481M - \$695M.

| Monthly Construction Progress Report Information |                       |                          |                             |                                         |                                                                                                           |
|--------------------------------------------------|-----------------------|--------------------------|-----------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                                                  | Date Filed with PUC-T | Utility's Project Number | Project Name                | Location (City/County)                  | Description                                                                                               |
| <b>a) CNP Mont Belvieu area Upgrade Project</b>  | January 15, 2013      | 811                      | Crosby-Mont Belvieu         | Mont Belvieu, Chambers, Liberty, Harris | Partial Reconductor and Partial Rebuild of 138 kV Ckt. 86                                                 |
|                                                  | June 15, 2013         | 811.1                    | Jordan Substation           | Mont Belvieu, Chambers                  | 138 kV and 345 kV service to Jordan Substation within one mile of Ckts. 86C, 86D, and 99G                 |
|                                                  | September 15, 2013    | 811.2                    | Crosby Corner-CONNER Corner | Chambers, Harris, Liberty               | Modification of 138 kV Ckt. 86D for new conductor testing.                                                |
|                                                  |                       |                          |                             |                                         |                                                                                                           |
| <b>b) CNP Freeport Area Upgrade Projects</b>     | June 15, 2013         | 810                      | Velasco-SURFSI              | Freeport, Brazoria                      | Rebuild, Reconductor, Bundling, and Upgrade of 69 kV Ckt. 10B to 138 kV                                   |
|                                                  | November 15, 2013     | 810.1                    | Velasco-Freeport (Phase 1)  | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47B to 138 kV; Rebuild, Bundling and Partial Reconductor of 69 kV Ckt. 47B          |
|                                                  | March 14, 2014        | 810.2                    | QNTANA-SURFSI (Phase 1)     | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47C to 138 kV, Partial Rebuild, Bundling, and Partial Reconductor of 69 kV Ckt. 47C |
|                                                  | March 14, 2014        | 810.3                    | Freeport-BRYAN_ (Phase 1)   | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47B to 138 kV; Partial Rebuild and Partial Reconductor of 69 kV Ckt. 47B            |
|                                                  | May 15, 2014          | 810.4                    | Freeport-BRYAN_ (Phase 2)   | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47B to 138 kV; Partial Rebuild and Partial Reconductor of 69 kV Ckt. 47B            |
|                                                  | August 15, 2014       | 810.5                    | QNTANA-SURFSI (Phase 2)     | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47C to 138 kV; Partial Rebuild and Partial Reconductor of 69 kV Ckt. 47C            |
|                                                  | January 15, 2015      | 810.6                    | Velasco-Freeport (Phase 2)  | Freeport, Brazoria                      | Upgrade of 69 kV Ckt. 47B to 138 kV; Rebuild and Reconductor of 69 kV Ckt. 47B                            |
|                                                  |                       |                          |                             |                                         |                                                                                                           |

|                                              |                   |       |                                                     |                      |                                                                                                                                                                                                                                                                             |
|----------------------------------------------|-------------------|-------|-----------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>c) CNP Fort Bend Area Upgrade Project</b> | January 15, 2014  | 853   | Fort Bend Upgrade (Flewellen-FOSTER)                | Fort Bend            | Upgrade of 69 kV Ckt. 49A to 138 kV; Partial Rebuild and Partial Reconductor of 69 kV Ckt. 49A                                                                                                                                                                              |
|                                              | February 14, 2014 | 853.1 | Fort Bend Upgrade (Brazos Valley-Fort Bend-Orchard) | Rosenberg, Fort Bend | Partial Rebuild of 138 kV Ckts. 60A and 09G                                                                                                                                                                                                                                 |
|                                              | March 14, 2014    | 853.2 | Fort Bend Substation                                | Rosenberg, Fort Bend | 69 kV service to Fort Bend Substation within one mile of Ckt. 49B                                                                                                                                                                                                           |
|                                              | July 15, 2014     | 853.3 | Fort Bend-Rosenberg                                 | Rosenberg, Fort Bend | Partial Upgrade of 69 kV Ckt. 49B to 138 kV, Partial Rebuild and Partial Reconductor of 69 kV Ckt. 49A; 138 kV service to Fort Bend Substation within one mile of Ckt. 49B                                                                                                  |
|                                              | July 15, 2014     | 853.4 | Orchard-Rosenberg                                   | Rosenberg, Fort Bend | Partial Upgrade of 69 kV Ckt. 49A to 138 kV; Partial Rebuild and Partial Reconductor of 69 kV Ckt. 49A                                                                                                                                                                      |
|                                              | November 15, 2014 | 853.5 | Flewellen-Fort Bend                                 | Fort Bend            | Partial Upgrade of 69 kV Ckt. 49A to 138 kV; Partial Reconductor of 69 kV Ckt. 49A; Installation, on an existing transmission line, of an additional 138 kV circuit not previously certificated 138 kV service to Fort Bend Substation within one mile of Ckts. 49A and 09G |
|                                              | December 15, 2014 | 853.6 | Fort Bend Substation                                | Rosenberg, Fort Bend | 69 kV service to Fort Bend Substation within one mile of Ckt. 49B                                                                                                                                                                                                           |
|                                              | April 15, 2015    | 853.7 | FOSTER Loop                                         | Fort Bend            | Installation, on an existing transmission line, of an additional 138 kV circuit not previously certified                                                                                                                                                                    |
|                                              | November 15, 2015 | 853.8 | FOSTER Substation                                   | Fort Bend            | 138 kV Service to FOSTER Substation within one mile of Ckt. 25E                                                                                                                                                                                                             |
|                                              |                   |       |                                                     |                      |                                                                                                                                                                                                                                                                             |
| <b>d) CNP Katy Area Upgrades</b>             | October 15, 2013  | 864   | Katy-Franz                                          | Katy, Waller, Harris | Partial Reconductor and Partial Rebuild of 138 kV Ckt. 09H                                                                                                                                                                                                                  |
|                                              | March 15, 2015    | 864   | 138 kV Zenith-Franz Project                         | Harris               | Construct a new single-circuit 138 kV transmission line.                                                                                                                                                                                                                    |
|                                              |                   |       |                                                     |                      |                                                                                                                                                                                                                                                                             |

|                                                                                                       |                                                                                                                          |       |                          |                                                                   |                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>e) CenterPoint Energy Jones Creek Project</b>                                                      | April 15, 2016                                                                                                           | 840   | Jones Creek Substation   | Freeport, Brazoria                                                | 138 kV Service to Jones Creek Substation within one mile of Ckts. 02F, 48F, and 59K; 345 kV Service to Jones Creek Substation within one mile of Ckt. 18A |
|                                                                                                       | August 15, 2016                                                                                                          | 840.3 | SEADOC-Velasco           | Brazoria                                                          | Partial Rebuild of 138 kV Ckt. 02F                                                                                                                        |
|                                                                                                       | August 15, 2016                                                                                                          | 840.7 | Freeport-CORTEZ          | Freeport, Quintana, Brazoria                                      | Partial Rebuild and Partial Reconductor of 138 kV Ckts 59H, 59I, and 59K                                                                                  |
|                                                                                                       |                                                                                                                          |       |                          |                                                                   |                                                                                                                                                           |
| <b>f) CNP Houston Region Import Capacity Project</b>                                                  | May 15, 2015                                                                                                             | 872   | Brazos Valley Connection | Houston, Waller, Prairie View, Pine Island, Grimes, Harns, Waller | Construct a new double-circuit 345 kV transmission line                                                                                                   |
|                                                                                                       |                                                                                                                          |       |                          |                                                                   |                                                                                                                                                           |
| <b>g) CNP Dow - Velasco Project</b>                                                                   | November 15, 2014                                                                                                        | 896   | Velasco-DOW              | Freeport, Brazoria                                                | Partial Reconductor of 138 kV Ckts. 82D, 82E, and 26E; 138 kV service to DOW Substation within one mile of Ckt. 82D                                       |
|                                                                                                       | July 15, 2015                                                                                                            | 896.1 | Velasco-DOW (Phase 2)    | Brazoria                                                          | Partial Rebuild of 138 kV Ckt. 82D                                                                                                                        |
|                                                                                                       |                                                                                                                          |       |                          |                                                                   |                                                                                                                                                           |
| <b>h) Houston Import RPG Project</b>                                                                  | This project is the same as f) CNP Houston Region Import Capacity Project                                                |       |                          |                                                                   |                                                                                                                                                           |
| <b>i) CenterPoint Energy Angleton to Petson to Monsan Ckt 04 Rebuild Project</b>                      | This project has not yet been completed and the Company is not seeking inclusion of any associated costs for the project |       |                          |                                                                   |                                                                                                                                                           |
| <b>j) CenterPoint Energy Southwyck - Algoa Corner Rebuild Project</b>                                 | This project has not yet been completed and the Company is not seeking inclusion of any associated costs for the project |       |                          |                                                                   |                                                                                                                                                           |
| <b>k) CenterPoint Energy - Fort Bend to West Columbia 69kV to 138kV Circuit 45 Conversion Project</b> | This project has not yet been completed and the Company is not seeking inclusion of any associated costs for the project |       |                          |                                                                   |                                                                                                                                                           |
| <b>l) CenterPoint Energy - Freeport Master Plan Project</b>                                           | This project has not yet been completed and the Company is not seeking inclusion of any associated costs for the project |       |                          |                                                                   |                                                                                                                                                           |

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

**PUBLIC UTILITY COMMISSION OF TEXAS  
REQUEST NO.: PUC11-02**

**QUESTION:**

For any projects responsive to Staff 11-1, or their sub-projects, for which the final costs were in excess of the estimated cost at the time of ERCOT approval, please explain, in detail, the reason for the difference in cost.

**ANSWER:**

**b) CNP Freeport Area Upgrade Projects** - Several necessary but impactful scope changes were made throughout the duration of this project that led to additional infrastructure needs and, therefore, increased costs. Unplanned temporary bypass installations were needed to facilitate the replacement of existing angle structures. Due to existing facilities proximity to the federal levee, the Company needed to purchase additional right of way and relocate to the other side of Brazos River. To accommodate continued expansion in the area, the Company identified a need to install tri-bundled conductor as opposed to the single conductor included in the original estimate and increase structure size to support that conductor. The geo-tech and subsurface engineering data, which was not available prior to project approval, required the installation of steel casings for concrete poles and larger pier foundations for steel poles.

**c) CNP Fort Bend Area Upgrade Project** - Please refer to CenterPoint Houston's response to PUC 6-24 b) and c) for discussion of two sub projects included in the Ft. Bend Area Upgrades -- Fort Bend - Rosenberg and Flewellen - Rosenberg.

Additionally, due to the failure of several underream foundations, the Company identified a need to replace several foundations for existing towers in the area.

**d) CNP Katy Area Upgrades** - The expansion of Franz substation required additional 138kV/345kV that was not part of the initial estimated scope. Due to the failure of several underream foundations, the Company identified a need to replace several foundations for existing towers at Katy substation. The replacement of these towers and foundations required additional bypass that was not included in the initial estimate. To accommodate resource constraints, construction crews were demobilized to work on other projects and remobilized at a later date to resume Katy Area Upgrades.

**e) CenterPoint Energy Jones Creek Project** - As area load steadily increased throughout the development of the Jones Creek Project, design modifications were necessary to address common tower design criteria violation as well as the need for an additional auto at the substation. The geo-tech and subsurface engineering data, which was not available prior to project approval, indicated a need for substantially larger foundations than originally estimated. Wetland mitigation requirements also exceeded original estimates. Due to permitting issues, a distribution substation needed to be added to the site and elevated 8' above sea level. Additional permitting issues eliminated the original plans to utilize low water crossings, so the Company constructed two bridges across tidal influence canals. During construction, third party facilities incorrectly installed in our easements halted construction while we coordinated to have them removed.

**SPONSOR (PREPARER):**  
Martin Narendorf (Martin Narendorf)

**RESPONSIVE DOCUMENTS:**  
None

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

**GULF COAST COALITION OF CITIES  
REQUEST NO.: GCCC02-17**

**QUESTION:**

Refer to Schedule II-D-1 which shows the O&M expense per books amounts for 2018 and to Schedule II-D-1a which shows the O&M expense per books amounts for each of the years 2015, 2016, and 2017. Refer further to the amounts recorded in 2018 compared to 2017 in FERC account 560, Operations Supervision and Engineering. The 2018 expense is \$13.074 million compared to the 2017 expense amount of only \$11.124 million.

- a. Provide a copy of all variance analyses performed during 2018 and subsequently related to the reasons for the large increase in 2018 expense compared to 2017 for FERC account 560.
- b. Identify, describe, and quantify all amounts recorded in 2018 in FERC account 560 that should be considered non-recurring in nature and indicate whether they were removed in the filing. If none, please explain all reasons for the large increase in this expense amount in 2018 compared to 2017, 2016, and 2015 and explain why the increase in 2018 should be considered recurring.

**ANSWER:**

- a. Although CenterPoint Energy Houston Electric (CEHE) does not perform O&M variance analysis by FERC account, internal management reporting is performed on a GAAP basis and various approaches ensure that management has proper ongoing control over O&M expenses. When analyzing O&M on a monthly basis, CEHE compares actual expenses to budget and to the prior year. CEHE's annual budgeting exercise includes an assessment of year-over-year cost increases to ensure that the increases are both reasonable, necessary and explainable.

Every month financial reports similar to the attachments to this response are prepared for use by executives, directors, and managers within CEHE. The reports facilitate discussions about O&M to identify variances and help management make decisions about future spend. In addition to individual review discussions held within each operational area, a collective budget review discussion is held each month with executives, directors, and managers within CEHE.

Please refer to Dale Bodden, Kristie Colvin, Shachella James, Martin Narendorf, Randy Pryor, John Slanina, Julianne Sugarek, Rebecca Demarr and Michelle Townsend's testimony for additional information about cost controls.

Please see GCCC02-17 Attachment 1 and GCCC02-17 Attachment 2 for examples of the types of O&M analysis performed on a monthly, quarterly, and/or annual basis.

- b. All 2018 costs recorded to FERC 5600 are considered recurring.

The increase in amounts recorded to FERC 5600 in 2018 is due to a reassignment of FERC accounts. CEHE periodically reviews FERC assignments by cost center for updates and implement changes as required.

**The attachments are confidential and are being provided pursuant to the Protective Order issued in Docket No. 49421.**

**SPONSOR (PREPARER):**  
Kristie Colvin (Kristie Colvin)

**RESPONSIVE DOCUMENTS:**

GCCC02-17 Attachment 1 (confidential).xlsx

GCCC02-17 Attachment 2 (confidential).xlsx

| Project Name                | Initial MCPR Date  | Utility's Project Number | Final MCPR Date | Utility's Project Number | Filed Initial Estimated Project Cost | Final Estimated Project Cost | Final Actual Project Cost | % Difference from Initial Estimate | % Difference from Final Estimate |
|-----------------------------|--------------------|--------------------------|-----------------|--------------------------|--------------------------------------|------------------------------|---------------------------|------------------------------------|----------------------------------|
| Kirby Substation            | November 15, 2011  | 770 0                    | 07/15/12        | 770 0                    | \$565,000                            | \$449,000 00                 | \$247,331 00              | -56 2%                             | -44 9%                           |
| W A Parish Substation       | July 15, 2012      | 805 0                    | 11/15/13        | 805 0                    | \$380,000                            | \$446,000 00                 | \$420,531 00              | 10 7%                              | -5 7%                            |
| Fry Road Substation         | June 15, 2014      | 614 0                    | 06/15/15        | 614 0                    | \$191,000                            | \$201,000 00                 | \$77,428 35               | -59 5%                             | -61 5%                           |
| Fort Bend Substation        | March 14, 2014     | 853 2                    | 04/15/16        | 853 2                    | \$488,000                            | \$488,000                    | \$449,400 23              | -7 9%                              | -7 9%                            |
| Fort Bend-Rosenberg         | July 15, 2014      | 853 3                    | 11/15/15        | 853 3                    | \$1,913,000                          | \$1,913,000                  | \$2,680,262 08            | 40 1%                              | 40 1%                            |
| Flewellen-Fort Bend         | November 15, 2014  | 853 5                    | 11/15/15        | 853 5                    | \$509,000                            | \$509,000                    | \$758,533 95              | 49 0%                              | 49 0%                            |
| TEXAS_ Substation           | October 15, 2010   | 718 0                    | 05/15/12        | 718 0                    | \$1,034,000                          | \$1,034,000                  | \$961,482 94              | -7 0%                              | -7 0%                            |
| Rothwood Substation         | April 15, 2009     | 707 0                    | 09/15/10        | 707 0                    | \$2,366,000                          | \$1,669,000 00               | \$1,342,765 00            | -43 2%                             | -19 5%                           |
| Meadow Substation           | September 15, 2009 | 665 0                    | 11/15/10        | 665 0                    | \$2,250,000                          | \$1,813,000.00               | \$1,142,247 00            | -49 2%                             | -37 0%                           |
| Dow Substation              | February 15, 2012  | 764 0                    | 07/15/12        | 764 0                    | \$48,000                             | \$76,000 00                  | \$72,463 00               | 51 0%                              | -4 7%                            |
| Atascocita Substation       | January 15, 2013   | 836 0                    | 09/16/13        | 836 0                    | \$153,000                            | \$137,000                    | \$78,505 00               | -48 7%                             | -42 7%                           |
| Crabb River Substation      | January 15, 2013   | 842 0                    | 04/15/14        | 842 0                    | \$267,000                            | \$218,000                    | \$250,283 00              | -6 3%                              | 14 8%                            |
| Jordan Substation           | June 15, 2013      | 811 1                    | 01/15/15        | 811 1                    | \$7,367,000                          | \$7,367,000                  | \$7,577,677 00            | 2 9%                               | 2 9%                             |
| Alexander Island Substation | November 15, 2014  | 903 0                    | 05/15/16        | 903 0                    | \$358,000                            | \$536,000                    | \$732,051 52              | 104 5%                             | 36 6%                            |
| Rothwood Substation         | November 15, 2014  | 900 0                    | 01/15/16        | 900 0                    | \$2,186,000                          | \$1,204,000                  | \$862,079 84              | -60 6%                             | -28 4%                           |
| Fort Bend Substation        | December 15, 2014  | 853 6                    | 11/15/15        | 853 6                    | \$430,000                            | \$430,000 00                 | \$330,462 11              | -23 1%                             | -23 1%                           |
| Ellington Substation        | October 15, 2014   | 902 0                    | 09/15/15        | 902 0                    | \$345,000                            | \$298,000                    | \$310,042 01              | -10 1%                             | 4 0%                             |

| Project Name                  | Initial MCPR Date  | Utility's Project Number | Final MCPR Date | Utility's Project Number | Filed Initial Estimated Project Cost | Final Estimated Project Cost | Final Actual Project Cost | % Difference from Initial Estimate | % Difference from Final Estimate |
|-------------------------------|--------------------|--------------------------|-----------------|--------------------------|--------------------------------------|------------------------------|---------------------------|------------------------------------|----------------------------------|
| Lyondell Substation           | August 15, 2015    | 948 0                    | 07/14/17        | 948 0                    | \$295,000                            | \$230,000                    | \$104,906 26              | -64 4%                             | -54 4%                           |
| Rothwood Substation (Phase 2) | January 15, 2016   | 900 1                    | 09/15/16        | 900 1                    | \$834,000                            | \$867,000                    | \$675,744 00              | -19 0%                             | -22 1%                           |
| Tanner Substation             | April 15, 2015     | 894 0                    | 02/15/17        | 894 0                    | \$7,417,000                          | \$7,918,000                  | \$6,641,378 00            | -10 5%                             | -16 1%                           |
| Orchard Substation            | November 15, 2015  | 952 0                    | 08/15/16        | 952 0                    | \$204,000                            | \$166,000                    | \$71,858 00               | -64 8%                             | -56 7%                           |
| Tiki Island Substation        | November 15, 2015  | 912 1                    | 11/15/16        | 912 1                    | \$197,000                            | \$197,000                    | \$100,761 00              | -48 9%                             | -48 9%                           |
| La Marque Substation          | November 15, 2015  | 912 0                    | 01/16/17        | 912 0                    | \$1,446,000                          | \$1,446,000                  | \$2,773,369 00            | 91 8%                              | 91 8%                            |
| Bailey Substation             | November 15, 2015  | 949 0                    | 01/16/17        | 949 0                    | \$2,115,000                          | \$1,951,000                  | \$2,154,166 00            | 1 9%                               | 10 4%                            |
| Franz Substation              | September 15, 2016 | 1183 0                   | 11/15/17        | 1183 0                   | \$2,867,000                          | \$2,867,000                  | \$1,831,542 84            | -36 1%                             | -36 1%                           |
| Jones Creek Substation        | April 15, 2016     | 840 0                    | 10/13/17        | 840 0                    | \$15,021,000                         | \$14,680,000                 | \$13,320,426 60           | -11 3%                             | -9 3%                            |
| Sandy Point Substation        | October 15, 2016   | 857 0                    | 09/15/17        | 857 0                    | \$2,619,000                          | \$2,619,000                  | \$4,957,564 92            | 89 3%                              | 89 3%                            |
| Bringhurst Substation         | February 15, 2017  | 1157 0                   | 06/15/18        | 1157 0                   | \$1,395,000                          | \$1,543,000                  | \$1,115,337 24            | -20 0%                             | -27 7%                           |
| Southwyck Substation          | January 15, 2018   | 954 3                    | 9/27/2018       | 954 3                    | \$1,635,000                          | \$1,635,000                  | \$934,026 50              | -42 9%                             | -42 9%                           |
| FOSTER Loop                   | April 15, 2015     | 853 7                    |                 | 853 7                    | \$396,000                            | \$575,000                    | \$376,104                 | -5 0%                              | -34 6%                           |
| Total for all projects:       |                    |                          |                 |                          | \$57,291,000                         | \$55,482,000                 | \$53,350,730              | -6.88%                             | -3.84%                           |
| Average Variance:             |                    |                          |                 |                          |                                      |                              |                           | -8.46%                             | -9.74%                           |



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# **Houston Electric Jones Creek Cost Update**

Executive Committee Meeting

April 12, 2017

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## Executive Summary

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- Agenda
  - Project Background & Current Status
  - Projected Project Costs
  - Variance Discussion
- As per the Governance and Policy guidelines, approval is required for new transmission projects greater than \$1MM and **previously approved projects with cost increases greater than 10% and \$500k (excluding Maintenance Capital and Distribution Load Growth projects).**
- Request: Approval of \$20MM (23%) capital overrun for Jones Creek
  - Initial Estimate Approved in 1Q 2015 - \$86.2MM
  - Current Estimate - \$106.21M
- Project costs are included in the 2017 capital plan.
- Presentation anticipated at the April BOD meeting (>\$50MM).



## Jones Creek Vicinity Map



CenterPoint Energy Proprietary and Confidential Information



## Jones Creek Substation Site – 2013 & March 2017

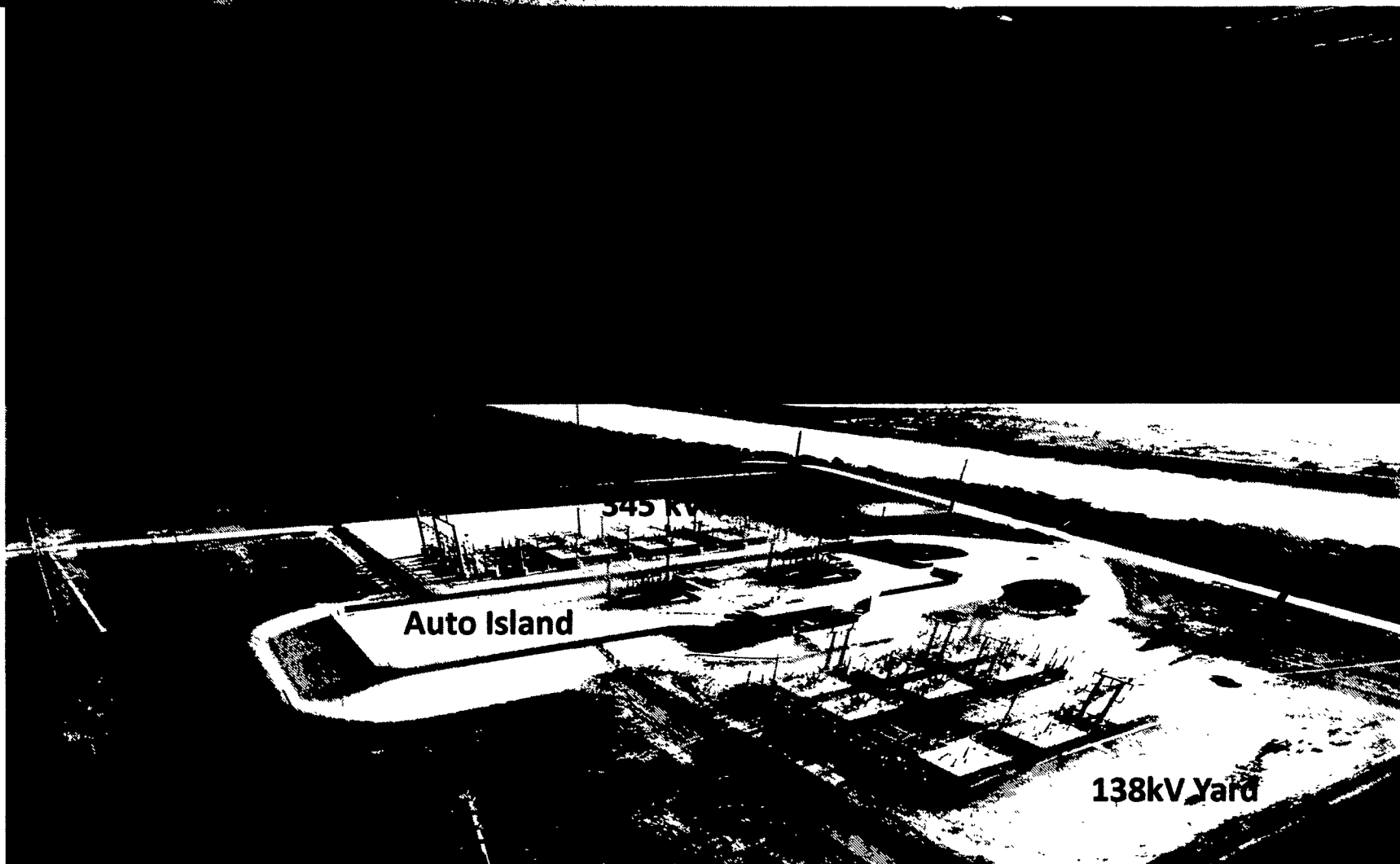
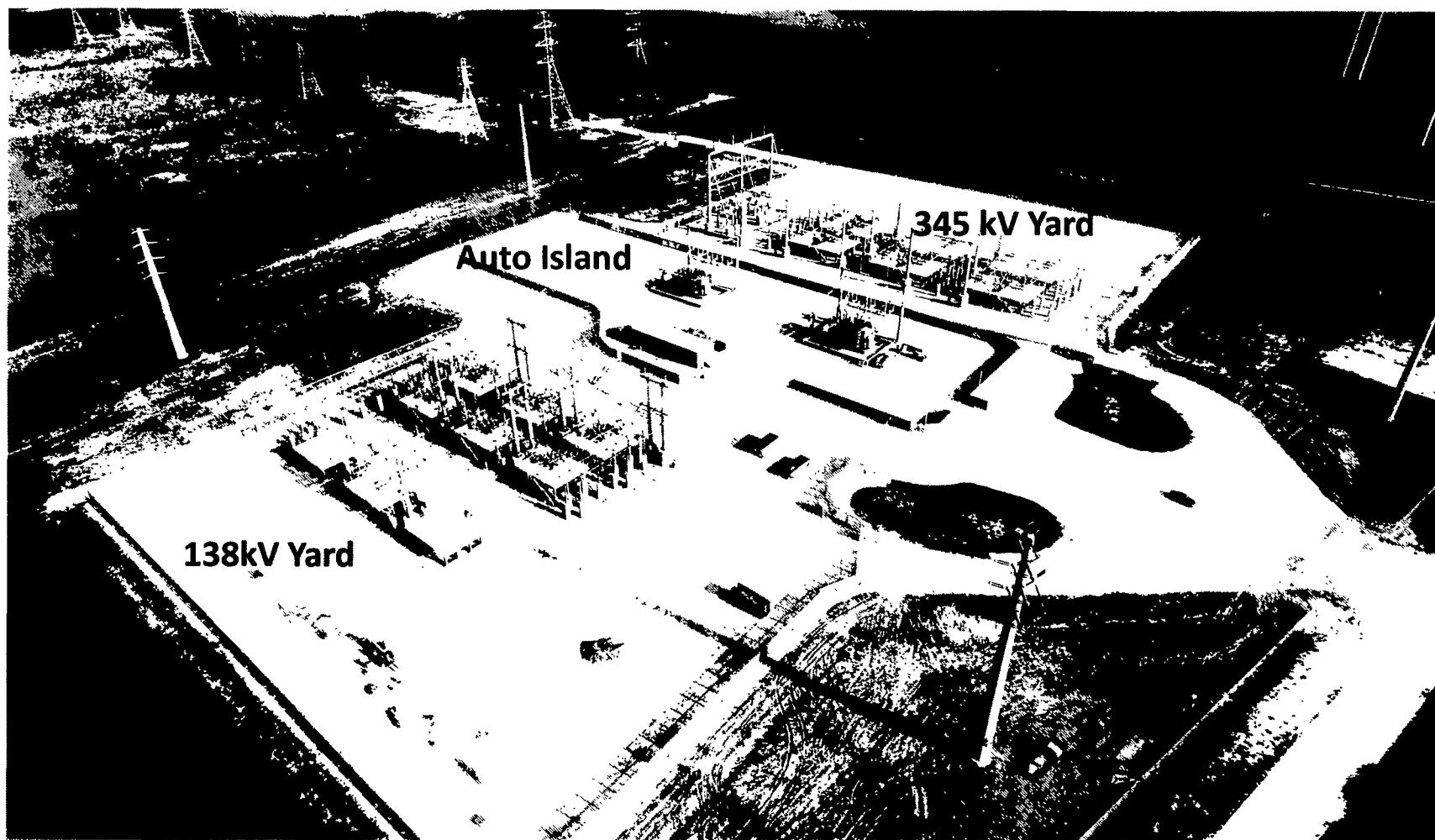


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## Jones Creek Substation View - March 28, 2017





## Background & Current Status

### January 2015 (EC Project Approval)

- The Jones Creek Project incorporates:
  - Jones Creek Substation
  - Cortez Substation
  - Quintana Loop Upgrade
- Total Estimated Cost – \$86,216,485

### April 2017

- Jones Creek Substation – Projected Completion June 2017 (85% Complete)
  - March 21<sup>st</sup> - 138KV Ln02 Velasco - Jones Creek energized
    - 138KV Ln02 Jones Creek - Franklins Camp/STEC energized
  - March 22<sup>nd</sup> - New 138kV LN59 Freeport - Jones Creek energized
  - March 30<sup>th</sup> – Energized Auto #1
  - April 7<sup>th</sup> – New 138kV LN48 Jones Creek – Quintana energized
- Cortez Sub – Projected Completion June 2017 (80% Complete)
- Quintana Loop Upgrade – Projected Completion YE 2017 (20% Complete)
- Total Projected Cost - \$106,205,797

- Costs shown include Capital Overhead

## Jones Creek Project – Estimated Costs (From EC Presentation January 26, 2015)



| <u>Work Description</u>                                                                                                                                                                                   | <u>kV</u> | <u>Transmission Cost</u> | <u>Substation Cost</u> |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------|------------------------|-----|
| Build a new 345/138 kV CenterPoint Energy "Jones Creek" Substation                                                                                                                                        | 345/138   | -                        | \$30,000,000           | JCK |
| Install two 800 MVA normal rating / 1000 MVA emergency rating (800/1000 MVA) 345/138 kV autotransformers at the Jones Creek Substation                                                                    | 345/138   | -                        | \$17,200,000           | JCK |
| Loop in 345 kV DOW-STP ckt 18 into Jones Creek                                                                                                                                                            | 345       | \$5,700,000              | -                      | JCK |
| Loop the 138 kV Velasco- Freeport circuit 59 0.5 miles into the Jones Creek Substation                                                                                                                    | 138       | \$200,000                |                        | JCK |
| Upgrade Velasco 138kV yard to 63kA fault duty                                                                                                                                                             | 138       |                          | \$350,000              | JCK |
| Split/Reconfigure circuits in the Freeport area creating:<br>138kV Velasco-SURFSI-Freeport-Jones Creek circuit 59, 138kV Velasco-QNTANA-Jones Creek circuit 48, and 138 kV Velasco-Jones Creek circuit 48 | 138       | \$200,000                | \$2,350,000            | JCK |
| Upgrade loop to Quintana 735MVA continuous rating                                                                                                                                                         | 138       | \$22,000,000             |                        | QLP |
| Reconfigure 138kV Velasco- Franklins Camp circuit 02 to create 138 kV Jones Creek - Franklins Camp circuit 02                                                                                             | 138       | \$3,750,000              | \$2,200,000            | JCK |
| Freeport LNG - Facility Extension at CORTEZ (CIAC)                                                                                                                                                        | 138       | \$1,510,990              | \$755,495              | CTZ |
| <b>Jones Creek Project Total Cost</b>                                                                                                                                                                     |           |                          | <b>\$86,216,485</b>    |     |

JCK = Jones Creek

QLP = Quintana Loop

CTZ = Cortez Substation



## Projected Costs

|                                      | Jones Creek Substation |                     | Cortez Substation |                    | Quintana Loop Upgrade |                     | Total                |
|--------------------------------------|------------------------|---------------------|-------------------|--------------------|-----------------------|---------------------|----------------------|
|                                      | Substation             | Transmission        | Substation        | Transmission       | Substation            | Transmission        |                      |
| <b>Original Project Estimate</b>     | <b>\$52,100,000</b>    | <b>\$9,850,000</b>  | <b>\$755,495</b>  | <b>\$1,510,900</b> | <b>\$0</b>            | <b>\$22,000,000</b> | <b>\$86,216,485</b>  |
|                                      |                        |                     |                   |                    |                       |                     |                      |
| <b>Current Substation Estimate</b>   | <b>\$72,307,594</b>    |                     | <b>\$441,321</b>  |                    | <b>\$0</b>            |                     | <b>\$72,748,915</b>  |
| <b>Current Transmission Estimate</b> |                        | <b>\$15,346,209</b> |                   | <b>\$1,117,953</b> |                       | <b>\$16,992,720</b> | <b>\$33,456,882</b>  |
| <b>Current Project Estimate</b>      |                        |                     |                   |                    |                       |                     | <b>\$106,205,797</b> |

- Costs shown include Capital Overhead



## Variances

| CHANGE                                                              | COST     | CHANGE DRIVER                                                                                                                             |
|---------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| ADD 7 TRANSMISSION STRUCTURES                                       | \$5.0MM  | AREA LOAD INCREASES RESULTING IN COMMOM TOWER DESIGN CRITERIA VIOLATION                                                                   |
| EXPAND AUTO ISLAND TO 3 UNITS                                       | \$5.0MM  | AREA LOAD INCREASES RESULTING IN NEED FOR ADDITIONAL AUTO CAPACITY                                                                        |
| RAISE DISTRIBUTION SUB SITE TO 8' ABOVE SEA LEVEL                   | \$6.0MM  | PERMIT ISSUES CREATED INABILITY TO GET DISTRIBUTION CIRCUITS ACROSS BRAZOS RIVER RESULTING IN THE NEED TO BUILD A DISTRIBUTION SUBSTATION |
| REPLACE CHAIN LINK FENCE WITH SECURITY FENCE                        | \$1.50MM | PHYSICAL SECURITY DESIGN CRITERIA FOR 345 KV SUBSTATIONS, WITH PRIORITY ON SUBSTATIONS WITH MULTIPLE AUTOS (CIP-014 LESSONS LEARNED )     |
| CONSTRUCT 2 BRIDGES ACROSS TIDAL INFLUENCE CANALS                   | \$1.5MM  | PERMIT ISSUES ELIMINATED PLANNED UTILIZATION OF LOW WATER CROSSINGS                                                                       |
| SUBSTATION & TRANSMISSION FOUNDATIONS REQUIRED MORE GIRTH AND DEPTH | \$5.0MM  | GEO-TECH AND SUBSURFACE ENGINEERING DATA WAS NOT AVAILABLE FOR FOUNDATION ESTIMATES (LESSONS LEARNED APPLIED TO BVC PROJECT)              |

- Costs shown include Capital Overhead

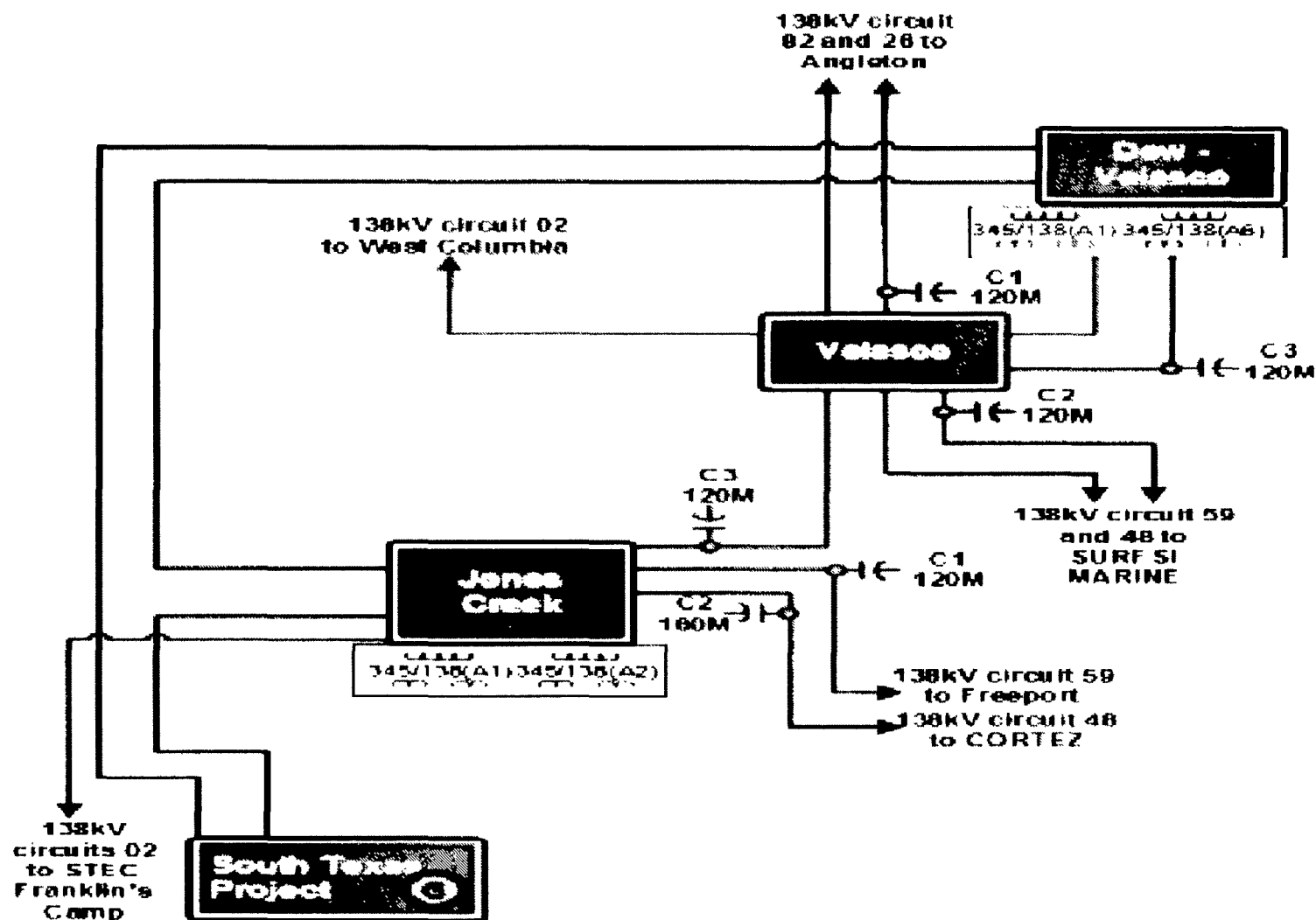


## Appendix

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# Jones Creek Area One-Line



## Jones Creek Substation View - March 28, 2017

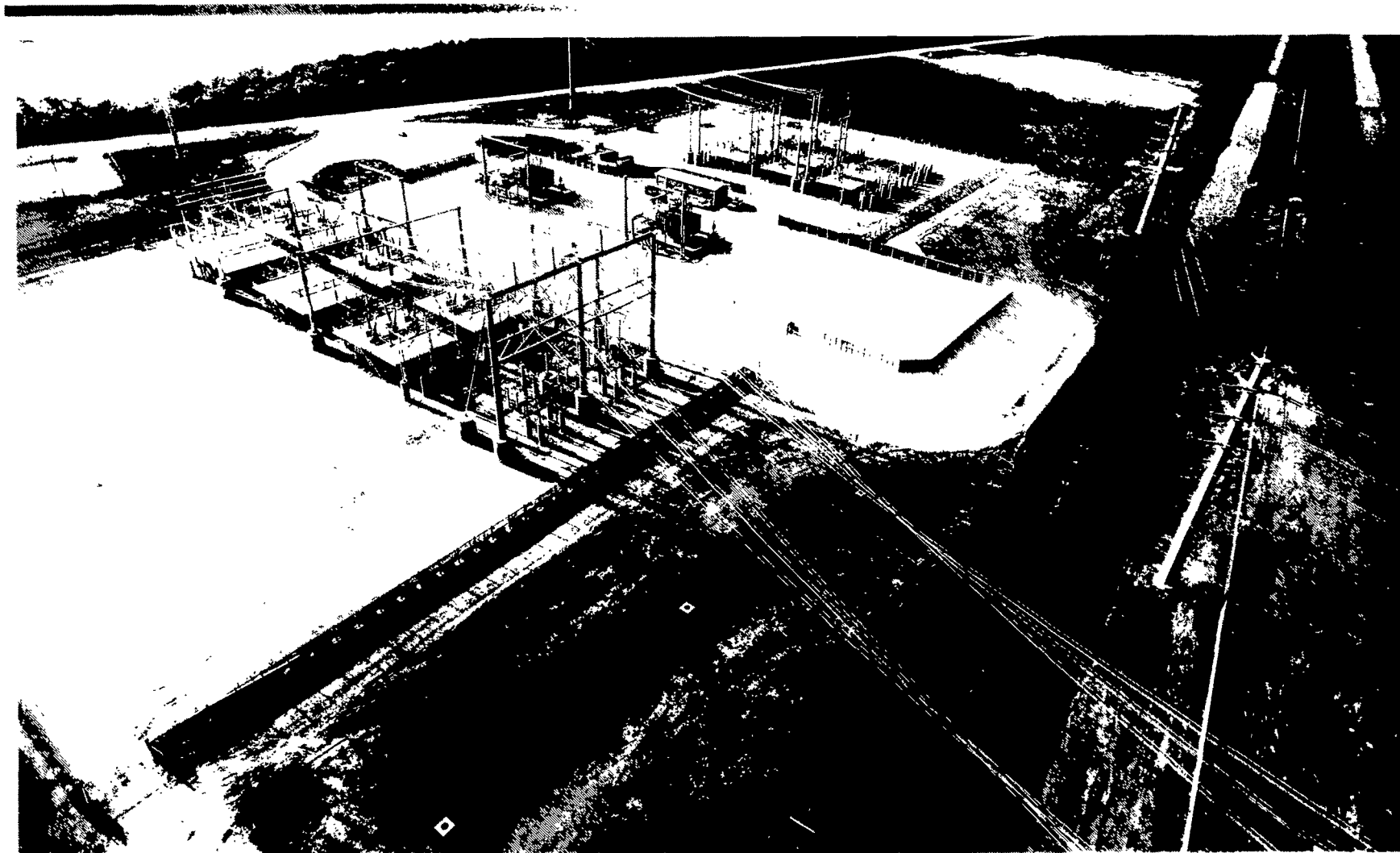


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## Jones Creek Substation View

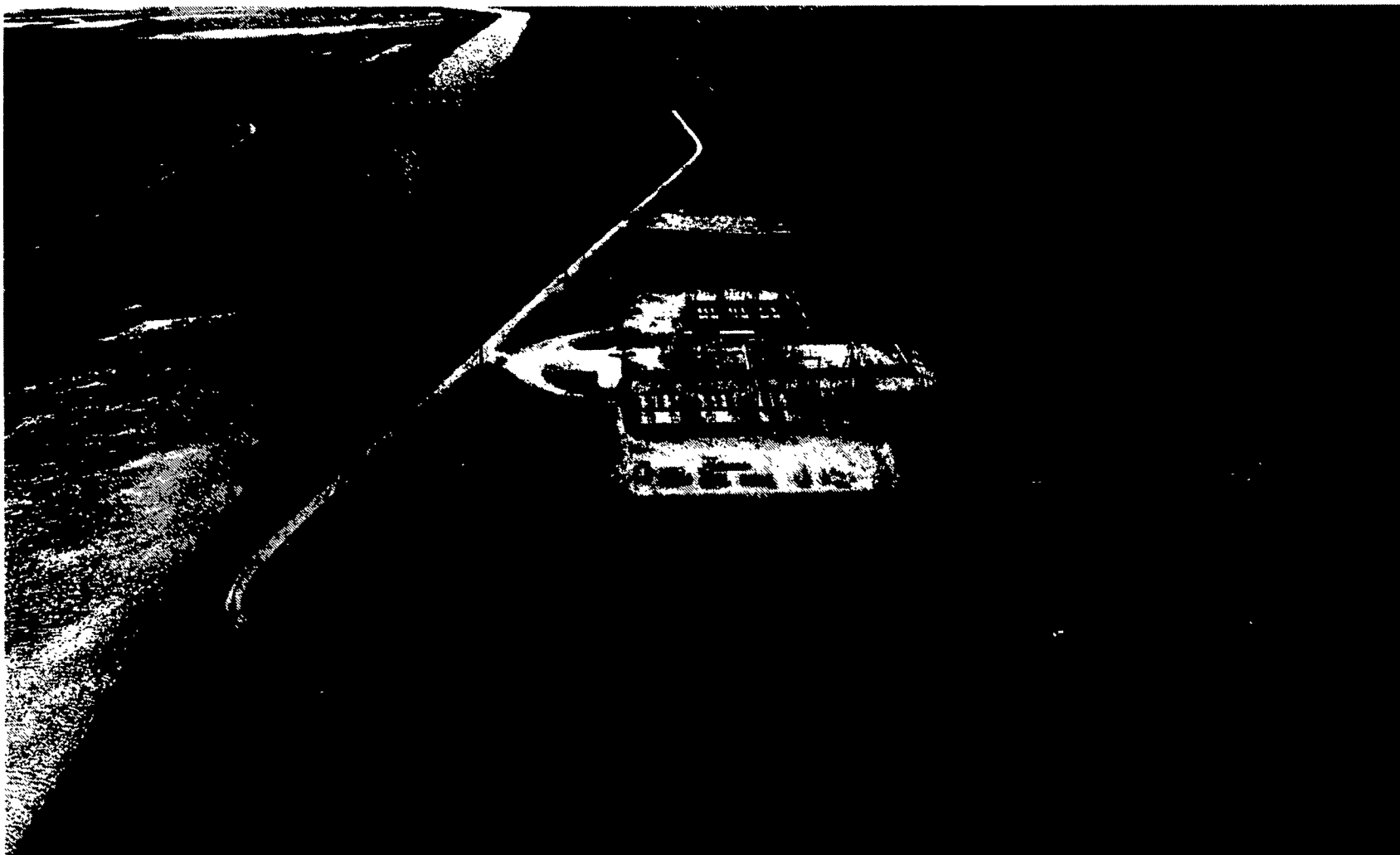


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## Jones Creek Substation Chain Walls

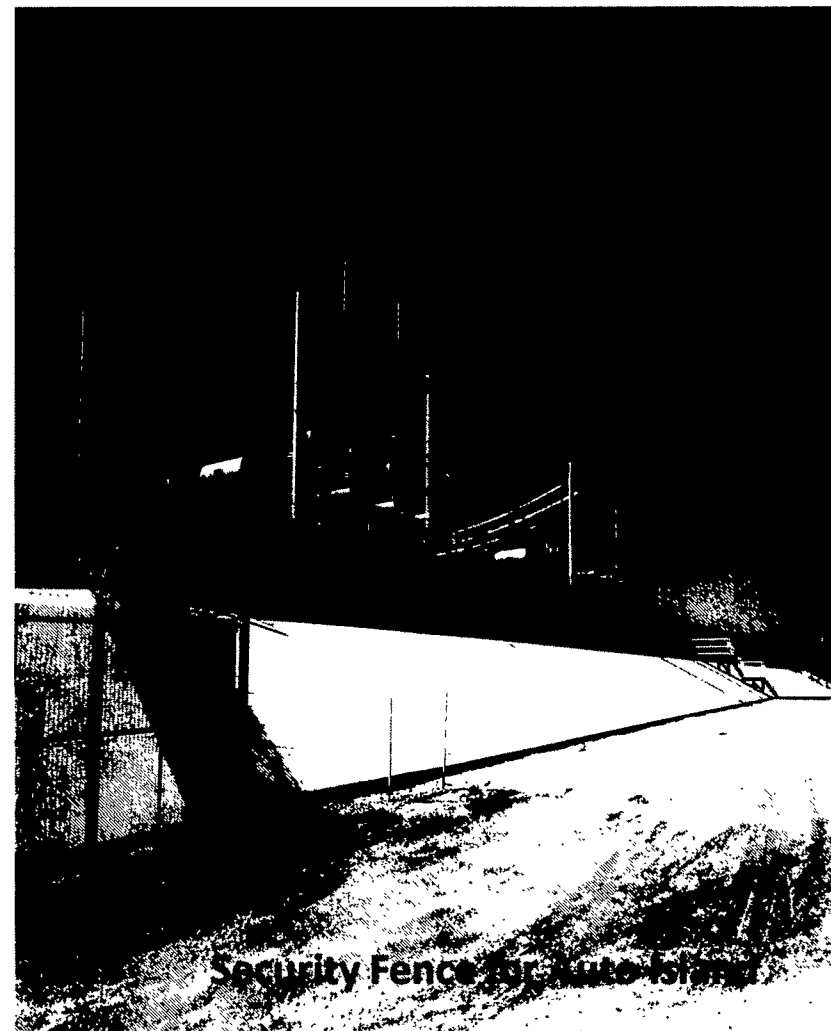


**345 kV Breakers  
on Chain Wall**





## Jones Creek Substation Security Fences





## Jones Creek Substation - Cat 5 Hurricane Surge Design

Substation is designed to withstand a Cat 5 Hurricane Storm Surge

- Surge is at 22' above sea level with 2' of wave action
- Critical components at 24' above sea level

