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APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	§ § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

REDACTED

REBUTTAL TESTIMONY

OF

R. CLAY DOYLE

FOR

EL PASO ELECTRIC COMPANY

NOVEMBER 19, 2021

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EXHIBITS

I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Robert "Clay" Doyle. My business address is 100 North Stanton Street, El Paso, Texas 79901.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. I am employed by El Paso Electric Company ("EPE" or the "Company") as Vice President of Transmission & Distribution.

Q. ARE YOU THE SAME R. CLAY DOYLE WHO SUBMITTED DIRECT TESTIMONY?

A. Yes, I am.

II. Purpose of Rebuttal Testimony

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is threefold.

First, I respond to City of El Paso, Texas, ("CEP") witness Nalepa regarding the prudence of EPE's renewal of the land rights for EPE's Arroyo to West Mesa, 345-kilovolt ("kV") transmission line, over the tribal lands of the Isleta Pueblo in the State of New Mexico.

Second, I respond to CEP witness Norwood regarding six EPE Texas distribution reliability capital projects that he proposes should be completely or partially disallowed because individually, their final expense was greater than initially projected and/or that EPE failed to provide adequate support for the need of the project.

Third, I respond to the Texas Industrial Energy Consumer ("TIEC") witness Higgins regarding his recommendation that the cost of EPE's 69-kV transmission lines should be separated and excluded from the transmission cost allocation for customers being served at the 115-kV transmission level.

III. Rebuttal to CEP Witness Nalepa Regarding "Pueblo of Isleta Land Rights Renewal" (Pages 6-15)

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR REBUTTAL TESTIMONY?

A. The purpose of this section of my rebuttal testimony is to address the issue that City of El Paso witness, Karl Nalepa, raises in his direct testimony regarding the $16.82 million EPE paid for the renewal of the right of way ("ROW") agreement necessary for an EPE 345 kilovolt ("kV") transmission line to cross the Isleta Pueblo Indian Reservation near Los Lunas, New Mexico. This is the transmission asset that I discussed on pages 22-26 of my direct testimony. I explain why Mr. Nalepa's primary recommendation (no recovery at all) and his alternative recommendation (removing the ROW renewal payment from rate base and treating it as an O&M expense at a level that is no more than the annualized amount of EPE's initial ROW payment offer) are both flawed and should be rejected.

Q. PLEASE SUMMARIZE YOUR UNDERSTANDING OF MR. NALEPA'S REASONING.

A. Mr. Nalepa questions the support for the payment that EPE made for the ROW renewal. He claims that EPE did not provide analyses of: (1) EPE's ability to condemn the tribal lands ROW; (2) EPE's estimate of the impact of abandoning the line on import capability or meeting peak load requirements; (3) EPE's estimate of the impact of abandoning the line on the loss of transmission revenues; and (4) EPE's estimate of the cost of rerouting the line.[1]

He then discusses a previous court case and a Commission case on the prudence standard and concludes that "lack of meaningful documentation" means that EPE's costs should be either completely disallowed, or, in the alternative, that a lesser annualized expense value, based on the Company's first offer to the Isleta Pueblo Tribal Council for the ROW renewal (and which the Tribal Council rejected) should be used.[2]

Q. DO YOU AGREE WITH MR. NALEPA'S REASONING OR CONCLUSIONS?

A. No, I do not. I disagree with his analysis as a whole and with the individual points he makes, as well. Specifically, given the particular circumstances EPE faced, its analysis was appropriate and reasonable and more than sufficient to indicate that the ROW agreement renewal was prudent for EPE and its customers.

[1] Direct Testimony of Karl J. Nalepa at 10.
[2] Direct Testimony of Karl J. Nalepa at 11-15.

This ROW renewal project centered on two simple questions: 1. whether an existing 345 kV transmission asset continued to be needed—the answer is clearly "yes" —and 2. whether there were better alternatives—the answer is clearly "no." Given the circumstances presented here, it was readily apparent that the transmission line continued to be an important asset and there were no suitable alternatives. As for the cost of the ROW, given the negotiating power of the landowner, both the process and results of the negotiation were reasonable.

Q. PLEASE EXPLAIN.

A. The first task is to understand the context, especially the important function the Arroyo – West Mesa 345 kV transmission line serves. As I explained in my direct testimony, the Isleta Pueblo ROW is for an 8.4-mile stretch of the 202-mile Arroyo-to-West Mesa 345 kV transmission line. That transmission line has been in service since 1967 and is one of three 345 kV lines connecting EPE with its neighboring utilities and to the Western Electricity Coordinating Council ("WECC"). As such, this line is extremely important to the functional ability of EPE to import power from the Palo Verde nuclear generating station (with 633 megawatts ("MW") of baseload capacity for EPE) and the other WECC connected utilities and to share resources for the security of not only EPE's system but also its neighboring systems.

In review, consider the following. First, with the long-existing, and long-understood operational significance of the West Mesa – Arroyo transmission line to EPE and the other interconnecting utilities of EPE's control area, there was no need to present detailed analyses of the type Mr. Nalepa suggests concerning the importance of the line to the Senior Officers or the Board of Directors of EPE. The existence and continued functional ability of a high voltage interconnecting line between EPE and the Public Service Company of New Mexico ("PNM") is absolutely, positively, needed and necessary. And, with that universal understanding, the remaining question was: Whether that needed and necessary interconnecting high voltage line would be the existing West Mesa – Arroyo transmission line or a new version of the West Mesa – Arroyo transmission line re-routed around the Native American lands (Isleta Tribe, Laguna Tribe, or others) of north central New Mexico?

Second, the ROW in question resides on tribal trust land, upon which, based on information from EPE's land management department, EPE has no condemnation authority or ability.[3] In short, that means that EPE had no legal mechanism to compel the Isleta Tribe to renew the ROW agreement, and no ability to renew it at a price premised on the market for properties not located on Native American tribal lands.

Third, given the first two considerations, EPE's options were limited to a simple cost assessment:

1. The negotiated cost of a new ROW agreement with the Isleta Tribe, or

2. The cost of re-routing that portion of the line around the Isleta Pueblo land.

Any suggestion that EPE's options required a more detailed and/or rigorous assessment ignores this obvious fact. Sometimes our options are pretty "cut and dry", and that was true of this subject.

Q. PLEASE EXPLAIN HOW THE ISLETA PUEBLO ROW RENEWAL WAS RECORDED AND APPROVED IN EPE'S PROJECT APPROVAL AND BUDGETING PROCESS.

A. EPE has a document management system that tracks all time sensitive agreements and other legally binding instruments. In 2014, several years prior to the expiration date of the Isleta Pueblo land ROW for the West Mesa – Arroyo transmission line, EPE's Land Management group received notification of the pending expiration. This notification signified the beginning of EPE's effort to renew the ROW agreement, and a preliminary work order was created to track the expenses incurred toward that effort.

Early in the process EPE hired a G&P Land Consultants to assist with initial planning. Eventually the Company hired an attorney (Kirk Allen, a partner with the Miller Stratvert law firm in Albuquerque, New Mexico) with expertise in negotiating ROWs through Native American lands to assist it with negotiating the Arroyo – West Mesa ROW renewal, and he was involved and advised EPE throughout the negotiations. The course

[3] Mr. Nalepa, on page 10 in his direct testimony, asserts that EPE did not provide any legal analysis of its ability to condemn the tribal lands ROW. However, Mr. Nalepa fails to mention that, in response to CEP RFI 5-3, EPE provided legal citation to support the proposition that it could not condemn the tribal lands, namely *Public Service Company of New Mexico v. Barboan,* 857 F.3d 1101 (10th Cir. May 26, 2017).

of 2016 meetings and discussions with the Isleta Tribe gave EPE indication that the renewal value would be significantly higher that initially anticipated. The request to make the Isleta Tribe ROW renewal a formal project occurred in 2016 for the 2017 Transmission and Distribution ("T&D") capital budget.

Q. HOW DID THE ISLETA TRIBE ROW RENEWAL PROJECT GET THE APPROVAL OF THE SENIOR OFFICERS AND THE BOARD OF DIRECTORS OF EPE?

A. EPE has a formal capital project and budget approval process that begins with the individual Divisions of the company (T&D, Generation, Administration, etc.). With regard to T&D capital projects, investment project requests are submitted to the T&D Planning Committee ("TDPC") for review and approval by the committee members comprised of department managers and directors and chaired by the Vice President of T&D. All proposed capital projects come to the TDPC in the form of a document called the Business Case Overview ("BCO") that describes and supports the project. The project BCO's are reviewed and accepted or rejected by the TDPC based on their need and support of the divisions' goals and objectives. It is the collection of TDPC approved BCO's that form the overall body of each Division's annual capital budget submittal to the Capital Planning Committee ("CPC").

The CPC is comprised of Senior Officers and Junior Officers of the Company and is chaired by one of the Senior Officers of the Company. The primary function of the CPC is to review all capital budget submittals from the divisions and construct the final annual corporate capital budget. It is the CPC that gives preliminary approval to all projects except those that have a value of $5 million or more. All capital projects that have a value of $5 million or more are presented to the Board of Directors for their review and approval. And, the final formal approval of the annual capital budget is approved by the Board of Directors.

Following this procedure, Project TL249, the Isleta Pueblo Land Rights Renewal project, was reviewed and approved by EPE's Board of Directors in the revised capital budget for 2017.

Q. IS THERE A CONTEMPORANEOUS DOCUMENT SUPPORTING EPE'S DECISION MAKING?

A. Yes, there is. In my direct testimony, I provided the PowerPoint presentation titled "Right of Way Extension Update" as Exhibit RCD-5. Mr. Steven Buraczyk (Sr. VP of Operations) made the presentation to the Board on January 26, 2017. As I explained in my direct testimony, this document was prepared with input from various internal EPE disciplines, represents the knowledge, due diligence, and experience of the teams that worked on this project, and was presented to upper management and the Board of Directors in order for them to approve the ROW renewal. Mr. Nalepa refers to this document somewhat dismissively on pages seven and eight of his testimony.

Q. PLEASE EXPLAIN WHAT THIS POWERPOINT PRESENTATION DEMONSTRATES ABOUT EPE'S DECISION MAKING.

A. Fundamentally, it demonstrates that this was not a casual decision by someone in mid-management. Instead, the matter was taken to the highest management of the Company for approval. This shows that EPE understood the importance of this analysis and appreciated the amount of money and important system issues at stake.

Page two of the document presents background information on the situation, including the nature of the asset and that the current request is for "an additional 25 years." In total, this page succinctly introduces the subject.

Page three is a collection of quotations from an April 28, 2014, Wall Street Journal article titled "Indian Tribes New Negotiating Power Costs Utilities." Two key points of that article are (1) federal law prohibits use of eminent domain to access tribal trust land, and (2) Indian tribes across the west are charging higher payments for ROW renewals.

Q. DID MR. NALEPA PROVIDE ANY ANALYSIS OR SUPPORT CONCERNING WHETHER THESE POINTS FROM THE WALL STREET JOURNAL ARTICLE SHOULD BE DISREGARDED OR DISCOUNTED?

A. No. These points from the article provided useful information for EPE management and Board of Directors to assist them in understanding that the cost of renewal over tribal lands was not isolated to EPE. Rather, the article was included in the presentation to illustrate

that other utilities were facing, and have faced, similar costs and issues with the renewal of ROWs over tribal lands.

Q. WHAT DOES PAGE FOUR OF THE POWERPOINT PRESENTATION SHOW?

A. Page four is a color-coded map of the area in which the Arroyo-West Mesa 345 kV transmission line is located, including the segment passing north to south across the Isleta Pueblo Reservation. In addition to showing Isleta Pueblo lands, the map shows the extensive property ownership by federal and state entities and the property of other Native American tribes in the area. It should be noted that to the immediate west of the Isleta Pueblo Reservation sits the Laguna Pueblo tribal lands, so re-routing the transmission line to the west would necessitate obtaining approval from, and payment for, a new ROW agreement from another Native American tribe, which would entail the same issues encountered with the Isleta Tribe. Again, this map provides useful context of the underlying facts.

Q. WHAT DOES PAGE FIVE OF THE POWERPOINT SHOW?

A. Page five, which is titled, "System Impact of the West Mesa-Arroyo Abandonment," is a critical part of the presentation because it fleshes out why the West Mesa-Arroyo transmission line continues to be needed and shows the effect of abandoning or not having that asset.

Q. PLEASE EXPLAIN HOW PAGE FIVE DEMONSTRATES THE CONTINUED NEED FOR THIS TRANSMISSION ASSET.

A. First, it shows that EPE's import capability would be reduced from 1,040 MW to 520 MW. This fact would concern anyone with a simple familiarity with EPE's situation. EPE sits at the southeast corner of the WECC and must also import the generation from its 633 MW of generation capacity from Palo Verde, which is located in Arizona. Cutting import capability in half or by 520 MW would clearly challenge EPE's ability to provide reliable service.

Second, page five of the presentation indicated that that peak load serving capability would be reduced to approximately 1,600 MW. The slide also shows that EPE could not

meet peak transmission planning standards – firm load obligations under N-1 contingency and that loss of any critical element in peak months would likely result in rolling blackouts. I discuss the importance of the N-1 and related contingencies analyses for system planning on pages eight and nine of my direct testimony.

Last, page five of the presentation indicated that third-party contracts would be impacted. Agreements with PNM and Tri-State would require renegotiation, and there would be a loss of annual transmission revenues of approximately $6 million.

Q. WHAT DO YOU CONCLUDE FROM THE INFORMATION ON PAGE FIVE OF THE PRESENTATION?

A. Not continuing to have the transmission line would result in unacceptable consequences to EPE's system and its ability to serve its customers and have negative impacts on EPE's interconnecting neighbor utilities. Therefore, not continuing to have the transmission line would be imprudent.

Q WHAT DOES MR. NALEPA SAY ABOUT THESE POINTS ON THE NEED FOR THE ASSET RAISED IN THE PRESENTATION?

A. On page ten of his testimony, he states that EPE did not provide any engineering studies or analysis supporting EPE's estimate of the impact of abandoning the line on import capability or meeting peak load requirements; or any economic studies or analysis supporting EPE's estimate of the impact of abandoning the line on the loss of transmission revenues.

Q. WHY DID EPE NOT DEVELOP AND PROVIDE SUCH STUDIES OR ANALYSES SUPPORTING THESE POINTS?

A. EPE senior management and the Board of Directors were well aware of the importance of this line and the consequences of it not being in service. It is one of three transmission lines that connect EPE to the WECC for reliability reasons as well as to import power from Palo Verde. Its importance is described in EPE's Securities and Exchange Commission Form 10-K Annual Report every year, which all Board members sign. The Board's Energy

Resources and Environmental Committee meets regularly to discuss resource needs and infrastructure requirements, including transmission import capabilities.

Q. DID MR. NALEPA PROVIDE HIS OWN ANALYSIS OR SUPPORT FOR QUESTIONING THE CONTINUED NEED FOR THIS EXISTING ASSET?

A. No.

Q. WHAT DOES PAGE SIX, THE LAST PAGE OF THE POWERPOINT, INDICATE?

A. Page six is a map titled "No Feasible Re-Route Options." The map shows the two re-route options of 29.7 miles to the west and 64.8 miles to the east. There are no north to south reroute options because the Arroyo – West Mesa 345 kV transmission line already runs north to south.

Q. REFERRING TO THE MAP ON PAGE SIX, WHY WERE THERE NO FEASIBLE RE-ROUTE OPTIONS?

A. There is nothing difficult about identifying and defining the feasibility of the two options for re-routing the West Mesa – Arroyo line around the Isleta Pueblo lands. The options are: 64.8 miles around the east side of the Isleta Pueblo land, or 29.7 miles around the west side of the Isleta Pueblo land. And, to be exact, the determination of feasibility was based immediately on the informed cost experience of our most recent transmission construction costs. As I explained in my direct testimony, a good "rule of thumb" cost estimate for constructing a 345 kV transmission line is $1 million per linear mile, and, accordingly, a per-mile cost estimate based on that rule of thumb puts the prices for the west side route option and the east side route option at $29.8 million and $64.8 million, respectively. From EPE's perspective, cost feasibility, as compared to the option of renewing the Isleta Pueblo ROW agreement, is the first threshold of consideration.

Q. DOES MR. NALEPA CHALLENGE EPE'S COST ESTIMATE OF REROUTING THE LINE?

A. Yes, Mr. Nalepa asserts that EPE did not provide any analysis supporting its estimated of rerouting the line. As explained above, however, I used my experience and a reasonable rule of thumb to estimate the costs of rerouting the line.

Q. IS THERE ANY PUBLICLY AVAILABLE INFORMATION THAT SUPPORTS YOUR EXPERIENCE AND RULE-OF-THUMB COST ESTIMATE FOR CONSTRUCTING A 345-KV TRANSMISSION LINE?

A. Yes. For example, the transmission costing tool of the WECC, of which EPE is a member, is publicly available online and reflects an initial typical cost per mile for single-circuit 345-kV lines of $1.4 million.[4] The Company's Arroyo-West Mesa line is single circuited.

Further, the Electricity Transmission primer on the US Department of Energy website estimated the typical cost of a single-circuit 345-kV transmission line at $915,000 per mile based on data from 2003.[5] In my experience, costs of transmission line construction did not decrease between 2003 and 2017 but rather increased over that time period.

Recent monthly transmission construction reports filed at the PUCT that identify the costs of construction of 345-kV lines in west Texas show costs in excess of $1 million per mile.[6]

Based on the above considerations, I think my rule of thumb is reasonable.

Q. DID MR. NALEPA PROVIDE ANY ANALYSIS CONCERNING THE FEASIBILITY OF RE-ROUTE OPTIONS?

A. No.

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[4] https://www.wecc.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/TEPPC_TransCapCostCalculator_E3_2019_Update.xlsx&action=default&DefaultItemOpen=1
See, in particular, cell D53 on the transmission cost tab. The "Capital Costs for Transmission and Substations" tool was prepared for WECC by the engineering firm Black & Veatch, for WECC's transmission expansion planning policy committee.

[5] See https://www.energy.gov/oe/downloads/electricity-transmission-primer

[6] See https://interchange.puc.texas.gov/Documents/49066_107_1014727.PDF (Cross Texas Transmission) and https://interchange.puc.texas.gov/Documents/45515_259_915330.PDF (Electric Transmission Texas).

Q. ARE THERE ANY ADDITIONAL CONSIDERATIONS WITH REGARD TO REROUTING THE LINE THAT MERIT FURTHER CONSIDERATION?

A. Yes, as I mentioned above, to the immediate west of the Isleta Pueblo Reservation sits the Laguna Pueblo tribal lands, so the shorter of the two "go around" options (29.7 miles to the west) would necessitate obtaining approval from, and payment for, a new ROW agreement from another Native American tribe, and it is reasonable to believe that routing the line across their lands would entail the same cost issues encountered with the Isleta Tribe.

Q. DID THE COMPANY PROVIDE THE CITY OF EL PASO ANY FURTHER DOCUMENTATION OF ITS INTERNAL DISCUSSIONS AND CONSIDERATIONS REGARDING THE FEASABILITY AND COST OF RELOCATING THE LINE?

A. Yes, several emails produced in provided in response to CEP 5-12 and which I include in my Exhibit RCD-R-1 reveal further internal considerations and discussions regarding the feasibility and cost of relocating the line. In particular:

[redacted]

[redacted]

The Company accordingly gave due internal consideration to the feasibility and cost of relocating the line.

Q. THE WALL STREET JOURNAL ARTICLE YOU DISCUSSED ABOVE MENTIONS THE INCREASE IN INDIAN TRIBE ROW RENEWAL PAYMENTS. DO YOU HAVE OTHER CONFIRMATION OF THIS TREND?

A. Yes, I do. As I detailed in my direct testimony, the Departments of Energy and the Interior prepared a May 2007 Report to Congress titled "Energy Policy Act of 2005, Section 1813 Indian Land Rights-of-Way Study." A copy of that report was included as Exhibit RCD-6 to my direct testimony. As explained in my direct testimony, the Report verifies that EPE's experience with the cost to acquire ROW across the Isleta Pueblo lands was not unusual or an outlier.

According to that Report, Section 1813(a)(1) of the Energy Policy Act requires the Departments to consult with interested parties, including Indian Tribes and the energy industry, and to jointly conduct a study of issues associated with grants, expansions, and

renewals of energy ROWs on tribal lands. In fact, the Isleta Tribe participated through comments.

The Report pointed out that:

> The issues concerning energy rights-of-way on tribal lands are most acute with regard to negotiations for renewals. Recently, some renewal negotiations have become more protracted, and the fees paid to the tribes for the use of their lands have risen (except for some exceptions).

The Report, based on an Edison Electric Institute survey, also found that ROW over tribal land exceeded the market value of the land by a median of six to twelve times and that tribal negotiators sought renewal fees that were based on build-around costs in five cases with 2007 costs estimated to be $500 thousand - $1 million per mile.

The Departmental Observations of the DOE/DOI Report also noted that renewal negotiations "have had no demonstrable effect on energy costs for consumers, energy reliability, or energy supplies to date." This observation along with the other observations in the Report lead to the following recommendations to Congress:

> 1. Valuation of energy rights-of-way on tribal lands should continue to be based on terms negotiated between the parties.

> 2. If the failure of negotiations involving the grant, expansion, or renewal of an energy right-of-way has a significant effect on the regional or national supply, price, or reliability of energy resources, the Departments recommend that Congress consider resolving such situations on a case-by-case basis through legislation targeted at the specific impasse, rather than making broader changes that would affect tribal sovereignty or self-determination generally.

EPE was able to negotiate a renewal price that was consistent with the expected cost range (*i.e.*, the six to twelve median multiplier) presented within the Report. The negotiated renewal price also compares favorably with the Company's build-around cost of $29.8 to 64.8 million (disregarding again the likelihood of ROW cost issues with neighboring tribal interests if EPE were to pursue the western build-around option).

Q. GIVEN THE CIRCUMSTANCES OF THE ISLETA PUEBLO ROW RENEWAL AND MR. NALEPA'S ARGUMENTS, WHAT DO YOU CONCLUDE CONCERNING THE ROW INFORMATION IN THE 2007 REPORT TO CONGRESS?

A. ROW renewals across tribal lands have been increasing for more than a decade, and this fact is not limited to the tribal lands of Isleta Pueblo of north-central New Mexico. Even though the report was issued in 2007, I am not aware of any changes between 2007 and 2017 that would have impacted the negotiations for the ROW renewal or the validity of the report.

Q. DID THE COMPANY PROVIDE IN DISCOVERY ANY FURTHER DOCUMENTATION OF ITS EFFORTS TO RENEW THE ROW?

A. Yes. In particular, the Company's response to CEP RFI 5-12 included over 1500 pages of emails and other documents that reflected the internal and external communications related to the ROW renewal efforts between 2014 and 2018.

Q. CAN YOU SUMMARIZE WHAT THE DOCUMENTS PROVIDED IN EPE'S RESPONSE TO CEP RFI 5-12 SHOW ABOUT THE TIMELINE OF DISCUSSIONS, OFFERS, AND COUNTER-OFFERS BETWEEN THE COMPANY OF THE TRIBAL COUNCIL?

A. Yes, the documents, emails, and attachments thereto support the following summary timeline:

- In December 2014, EPE provided its notice of intent to renew the ROW.
- In January 2016, EPE personnel attended an in-person Tribal Council meeting to discuss the requested ROW renewal. The meeting enabled EPE to prove the Council with an overview of the project and answer question Council members had about EPE and the project.
- In the June 2016, EPE met again with the Tribal Council to address follow-up questions regarding the project.
- In October 2016, EPE made it initial formal offer of $4.98 million for the ROW renewal.
- On December 14, 2016, EPE meets with Tribal Council representatives regarding the formal offer for the ROW renewal.
- At the Company's January 26, 2017 board meeting, Mr. Steve Buraczyk indicated that the right-of-way negotiation with the Tribal Council that will likely exceed the $5 million threshold for Board approval.
- In early February 2017, internal Company documentation showed the estimated project cost was expected to exceed $12 million, that the renewal was necessary "to ensure the West Mesa - Arroyo line stays in service," that there would be a "risk to

bulk system if not renewed," and that a "high level analysis of alternatives proved not feasible" to such an extent that no further analysis action was required.

- In later February 2017, EPE revised its offer letter for the renewal to $15 million.
- In April 2017, the Tribal Council made a counter-proposal of $16.5 million.
- In May 2017, EPE accepted the Tribal Council's counter-proposal.
- During the rest of 2017 and into 2018, Mr. Allen and his firm assisted EPE with the drafting and extensive negotiations needed to finalize the right of way renewal documents and related easement.

A small selection of documents produced by EPE in response to CEP RFI 5-5 and 5-12 supporting the above timeline have been included in my Exhibit RCD-R-2.

Q. DO YOU AGREE WITH MR. NALEPA'S SECONDARY RECOMMENDATION THAT THE ROW RENEWAL PAYMENT BE REMOVED FROM RATE BASE AND ANNUALIZED AS AN O&M EXPENSE?

A. No. While there were internal questions at the time as to the proper treatment of the cost, the accounting department concluded that it should be capitalized, as is detailed the rebuttal testimony of Company witness Hancock. Accordingly, it was correct and appropriate for EPE to capitalize this cost.

IV. CEP Witness Norwood Regarding "Texas Area Distribution Reliability Projects" (Pages 16-20)

Q. WHAT DOES CEP WITNESS NORWOOD ALLEGE AND RECOMMEND IN THIS PORTION OF HIS TESTIMONY?

A. Mr. Norwood alleges that the Company did not adequately explain why six particular capital projects cost more than initially projected and did not adequately support the need for the projects, and that the projects were not needed for customer service and reliability. He recommends that the costs of these projects over the initially budgeted amounts be disallowed.

Q. IN RESPONSE TO ANY INTERVENOR RFI'S, DID EPE PROVIDE AN EXPLANATION OF EPE'S CAPITAL BUDGETING PROCESS AND THE

DIFFERENCES BETWEEN AN INITIAL COST ESTIMATE, A PRE-CONSTRUCTION COST ESTIMATE, AND A PROJECT'S FINAL COST?

A. Yes. On pages 3 and 4 of EPE's response to CEP 8-03, EPE explained the "Capital Planning Process", the "Budgeting Process", and the "Common Variances" for capital projects that affect the final cost of a project. For convenience I provide below, and incorporate into my rebuttal testimony, an excerpt from EPE's CEP 8-03 response regarding EPE's capital budgeting process:

> **Budgeting Process**
>
> A budget is initially developed to reflect the initial scoping for a particular project. This initial budget presents a preliminary budget estimate based on the identified driving need for the activity. This scoping and budgeting then evolve as the project moves forward as a result of the capital project planning processes described above.
>
> Internal cost estimates are uploaded into the Company's Power Plan cost repository on a semi-annual basis without contingencies. Two budget versions are provided below. The Scope Zero budget version is considered the first time a system need was identified, even though it may be that the scope is still being defined based on overall system needs. The Pre-Construction Budget is when most contract services have been bid but before any major internal construction efforts have started. EPE has identified the approximate dates each budget version was developed in the individual analyses provided below.
>
> Sometimes opportunities to perform additional upgrades to equipment to prepare for anticipated load increases or technology needs are identified after work on a project has begun. This additional work is added to the project scope once it is determined that the additions are reasonable, necessary, and prudent. EPE has found that retrofitting completed projects to accommodate new technology is both time consuming and expensive. As a result, the Company may at times expand projects or incorporate newer technology at the time of construction to avoid subsequent retrofits and redeployment of engineering and technical resources. The Company has found that addressing operational opportunities is often optimal while the project is ongoing as opposed to retrofitting projects in the future after the project is completed. This forward-looking approach tends to save costs in the longer term and thus results in lower overall costs to customers.

Q. IN RESPONSE TO ANY INTERVENOR RFI'S, DID EPE PROVIDE INFORMATION ON NON-BLANKET CAPITAL PROJECTS THAT INCLUDED THE SCOPE ZERO BUDGET, THE PRE-CONSTRUCTION BUDGET, AND THE FINAL COST OF EACH PROJECT?

A. Yes. Again, in response to CEP 8-03 EPE provided a budget progression summary, with dates, for each distribution capital project over $2 million. Also, on the summary sheet for each capital project, EPE provided a brief description of any project variances that may have caused the final cost of the project to vary from the pre-construction project estimate. For the reader's convenience, I have selected excerpts from EPE's response to CEP 8-03 including the budget progression summary sheets for each of the six projects of Mr. Norwood list and include them as my Exhibit RCD-3R. I incorporate these attached excerpts from the response into my rebuttal testimony

Q. WHAT DID MR. NORWOOD SAY IN HIS TESTIMONY ABOUT THE COST OVERAGES FOR THE SIX PROJECTS OF HIS LIST THAT TOTAL MORE THAN $19.8 MILLION?

A. On page 17, lines 14 through 17, Mr. Norwood presents his "Table 9, *EPE Texas Area Distribution Reliability Project Budget Overages*" to illustrate the difference, or "Overages", between EPE's original budget and the final cost for each of the six distribution capital projects. The table presents the final cost of each of six EPE capital projects and the difference (Overage) between the final cost of each project and the original project budget. The table tallies the "overages" for each project and sums them up to arrive at an overall "overage" value of $19.8 million. Mr. Norwood goes on to assert that EPE did not provide the cost/benefit analysis to support the original project budgets or the final costs of the projects and the overages.

Q. HOW DO YOU RESPOND TO MR. NORWOOD'S STATEMENT ON THE PROJECT OVERAGES?

A. Even though EPE provided a budget progression summary for each distribution project over $2 million in its response to CEP 8-03, and even though that response included each of the six projects that of Mr. Norwood's list, he completely disregarded EPE's explanation of EPE's capital project budgeting process and the information provided on the Pre-construction budget. It is unreasonable and illogical to try and draw a conclusion about a project cost overage by comparing an initial budget (EPE's Scope Zero budget) to the

final cost of the project when you have (on the same page) the Pre-construction budget for each project at your disposal.

The table below re-presents the six projects of Mr. Norwood's list, this time showing the final project cost, the pre-construction estimate, and the difference between the two.

Table RCD – R1

Project	Final Cost	Pre-Construction Estimate	Final cost vs. Pre-construction Estimate Difference
DT359 - Nuway Sub	$14,431,157	$12,168,853	$2,262,304
DT186 - Leo Sub	$6,899,678	$5,014,748	$1,884,930
DT186 - Ripley T2 XFMR	$3,397,392	$3,768,405	-$371,013
DT186 - Pendale T2 XFMR	$3,351,288	$2,711,297	$639,991
DT186 - Global Reach T2	$3,009,279	$2,432,357	$576,922
DT186 - Rio Bosque Capacitor Bank	$2,139,566	$1,747,962	$391,604
	$33,228,360	**$27,843,622**	**$5,384,738**

Sum of project cost variance (final vs. Pre-construction estimate) =	**16.2%**

Upon inspection, the reader will note that the summary variance of final project costs to the Pre-construction estimate for the projects of Mr. Norwood's list stands at 16.2%, which is a reasonable level. Additionally, it should also be noted that the values given for the Pre-construction budget do not include all EPE internal overhead adjustments whereas the final cost is complete with EPE internal overhead adjustments. So, the final variance would be less than 16.2% if EPE included the internal overhead adjustments in its Pre-construction budget. As explained in EPE response to CEP 8-03, the Pre-construction project estimate is the most accurate (less the overhead adjustments) and updated project cost estimate that EPE has just before the project physically starts. In contrast, EPE's Scope Zero Budget (also without EPE overhead adjustments) is only an initial scoping of the project and is not considered or intended to be a definitive or final estimate of the prudent cost for a project. Consequently, it is not appropriate to use the Scope Zero Budget for determining the prudent cost for a project as Mr. Norwood does.

Q. DID EPE PROVIDE INFORMATION OR DETAIL ON THE CAUSE OF THE COST VARIANCE FOR THE PROJECTS OF MR. NORWOOD'S LIST?

A. Yes. Again, in response to CEP 8-03, EPE provided a summary explanation of the any significant project changes that contributed to the project cost variance from EPE's Pre-construction budget. Those explanations are included in my Exhibit RCD-3R.

Q. DID EPE RECEIVE ANY FOLLOW-UP QUESTIONS TO EPE'S RESPONSE TO CEP 8-03 FROM MR. NORWOOD, CEP, OR ANY OF THE OTHER INTERVENORS?

A. No.

Q. WHAT ASSERTION DID MR. NORWOOD MAKE IN REGARD TO THE SIX PROJECTS OF HIS LIST AND THEIR NEED TO IMPROVE SYSTEM RELIABILITY AND TO SERVE LOAD GROWTH ON EPE'S SYSTEM?

A. Beginning on page 18, line 12, and continuing through page 20, line 8, of his testimony Mr. Norwood presents an argument that the six distribution capital projects of his list were not needed because the completion of those projects did not materially change (for the better) EPE's overall system reliability metrics. In support of his argument Mr. Norwood presents a table, "EPE Texas Area Reliability Performance," where he lists EPE's SAIDI and SAIFI metrics and a metric that he labels "RELIABILITY" for the previous 10 years (2011 – 2020). Mr. Norwood's table also presents the five-year and ten-year averages for each of the reliability metrics. For convenience, I re-present Mr. Norwood's table below:

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Table 10
EPE Texas Area Distribution Reliability Performance[25]

	SAIDI	SAIFI	RELIABILITY
2011	48.4	0.45	99.991%
2012	38.3	0.33	99.993%
2013	37.5	0.37	99.993%
2014	49.2	0.53	99.991%
2015	51.5	0.53	99.990%
2016	43.1	0.41	99.992%
2017	47.0	0.58	99.991%
2018	38.8	0.49	99.993%
2019	64.5	0.72	99.988%
2020	48.6	0.53	99.991%
AVG 2011-2015	45.0	0.44	99.991%
AVG 2016-2020	48.4	0.55	99.991%
AVG 2011-2020	46.7	0.49	99.991%

Using the table re-presented above, Mr. Norwood points out that EPE SAIDI performance over the last 10 year has averaged 46.7 minutes. He then concludes that because of EPE's relatively low average SAIDI value EPE's Texas customers receive distribution service "...in 99.991% of all hours in the year." He goes on to say that this "represents very high reliability performance." Then Mr. Norwood concludes his argument against the need for the six projects by stating that there has been no discernable improvement in reliability performance since 2017 when the six projects of his list were constructed and placed in service.

Q. HOW DO YOU RESPOND TO MR. NORWOOD WITH REGARD TO SYSTEM RELIABILITY AND THE NEED FOR THE SIX PROJECTS OF HIS LIST?

A. Mr. Norwood's reasoning is illogical at best. He lauds EPE's reliability with no acknowledgement that this high level of reliability is the direct result of EPE's distribution planning process that leads to projects just like the six he has identified. In other words, he objects to the type of projects that result in and help to maintain EPE's high reliability. It is notable that he does not identify anything with regard to EPE's planning process itself that is flawed or deficient. Moreover, for EPE to meet his criteria, EPE's reliability would have to dip to lower levels before a project could be justified. By way of analogy,

Mr. Norwood would apparently consider car maintenance justified only if the car had started driving poorly or broke down.

Q. DID MR. NORWOOD PROVIDE ANY OTHER ARGUMENTS AS A BASIS FOR NOT APPROVING THE SIX CAPITAL PROJECTS OF HIS LIST?

A. Yes. On page 20, lines 1 through 8, of Mr. Norwood's testimony he cited the number of customer complaints (or lack thereof) regarding service reliability to the Public Utility Commission of Texas as evidence that there are no distribution reliability problems to be fixed. Specifically, Mr. Norwood reported that EPE averaged about 5 customer complaints to the PUCT related to service reliability over the last five years.

Q. HOW DO YOU RESPOND TO MR. NORWOOD'S QUESTION AND ANSWER TO THE NUMBER OF EPE CUSTOMER COMPLAINTS ABOUT SERVICE RELIABILITY?

A. As I said before, apparently Mr. Norwood would want our reliability to begin to crater before further investment is justified. Under Mr. Norwood's standards for justifying investments, EPE's reliability would have to suffer to the point of a proliferation of complaints being filed with the PUC before investment is justified.

Q. WHAT ASSERTION DID MR. NORWOOD MAKE IN REGARD TO THE SIX PROJECTS OF HIS LIST AND THEIR NEED TO SERVE LOAD GROWTH ON EPE'S SYSTEM?

A. On page 17, lines 3 through 5, of Mr. Norwood's testimony regarding the six projects that he identified in his list, he writes:

> A. My primary concerns are that other than general descriptions of the projects, the Company has provided virtually no specific information to support the prudence of the projects. In addition, it is apparent that EPE has not [illegible]

Continuing, on page 18, lines 12 through 17, of Mr. Norwood's testimony he presents the following Q & A regarding the six projects and the need of the projects:

Q. HAS EPE PROVIDED ADEQUATE INFORMATION TO DEMONSTRATE THAT THE PROJECTS WERE TRULY NEEDED TO IMPROVE SYSTEM RELIABILITY AND TO SERVE LOAD GROWTH ON EPE'S SYSTEM?

A. No. For example, EPE has not provided any quantification of the expected reliability improvement due to the projects, nor has it provided any evidence that each project was necessary to serve load growth and could not be served from other distribution facilities.

Q. HOW DO YOU RESPOND TO MR. NORWOOD'S ASSERTION THAT EPE DID NOT PROVIDE ADEQUATE INFORMATION TO SUPPORT THE NEED FOR EACH OF THE SIX PROJECTS OF HIS LIST?

A. First, with regard to "quantification of expected reliability improvements due to the projects," EPE has a great track record of providing reliable electric service and therefore our past, present, and future infrastructure additions and improvements (capital projects) are focused first on the continued application of our distribution planning philosophy and maintaining our current levels of reliability performance. Notwithstanding some very specific system situations that require immediate action to resolve a specific and limited service reliability issue, EPE does not wait until a reliability issue occurs to propose a capital project remedy and then calculate a level of reliability improvement that we expect as a result of the project. EPE's infrastructure capital projects are developed consistent with our distribution planning process and therefore, are designed to help fortify and maintain the level of service reliability that our customers expect.

Further, with regard to Mr. Norwood's comment about EPE not providing adequate information in support of the need for the six capital projects of his list: In response to CEP 1-13, EPE provided a spreadsheet attachment with the project descriptions, in-service dates, and cost/benefit summaries for each of 26 different distribution capital projects with a cost over $2 million (including blanket and non-blanket projects). All six projects on Mr. Norwood's capital project list were included in that spreadsheet. I provide that attachment as my Exhibit RCD-4R (and accordingly incorporate it into my rebuttal testimony). EPE did not receive a follow-up RFI from Mr. Norwood, CEP, or any other

intervenor requesting additional information on the need for any project on the list, including the six on Mr. Norwood's list.

Additionally, because two of the projects on Mr. Norwood's list were greater than $4 million, I provided a more detailed explanation of those two projects in my direct testimony (DT359 – NUWAY SUB, DT186 - LEO SUBSTATION 115 kV CONVERSION & GETAWAY UPGRADE). EPE did not receive any follow-up RFI questions from Mr. Norwood, CEP, or any intervenor related to the information in my direct testimony regarding the need for projects DT359 and/or DT186.

Also, in response to FMI 2-03, EPE provided Attachment 6, a spreadsheet showing other RFI responses on capital projects or new information showing cost/benefit analysis done for the projects listed in CEP 1-13, Attachment 3. Attachment 6 to FMI 2-03 presents additional information on the following projects from Mr. Norwood's list:

- **DT382** - RIPLEY T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS
- **DT379** - PENDALE T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS
- **DT291** - GLOBAL REACH T2 AND SWITCHGEAR
- **DT184** - RIO BOSQUE CAPACITOR BANK ADDITION

Accordingly, I provide that attachment as my Exhibit RCD-5R, again highlighting the projects at issue in Mr. Norwood's testimony (and accordingly incorporating it into my rebuttal testimony).

Q. PLEASE DESCRIBE EPE DISTRIBUTION SYSTEM PLANNING PHILOSOPHY AND HOW IT WORKS TO MAINTAIN EPE'S CUSTOMER SERVICE RELIABILITY AND SERVE LOAD GROWTH.

A. EPE's governing philosophy for distribution system planning is described in EPE's Distribution System Expansion Plan. EPE's distribution system planning philosophy has evolved, slightly, over the years in response to the realities of an aging infrastructure and a comparatively robust customer load growth. Although EPE's distribution system planning philosophy is presented and updated each year in EPE's confidential annual Distribution Expansion Plan, the philosophy itself is not confidential and is provided in my

Exhibit RCD-6R as a non-confidential excerpt from EPE's confidential Distribution Expansion Plan and accordingly incorporated into my rebuttal testimony.

Q. FOR THE PROJECTS OF MR. NORWOOD LIST THAT WERE NOT COVERED IN YOUR DIRECT TESTIMONY, CAN YOU PROVIDE A DESCRIPTION OF THE NEED FOR EACH PROJECT?

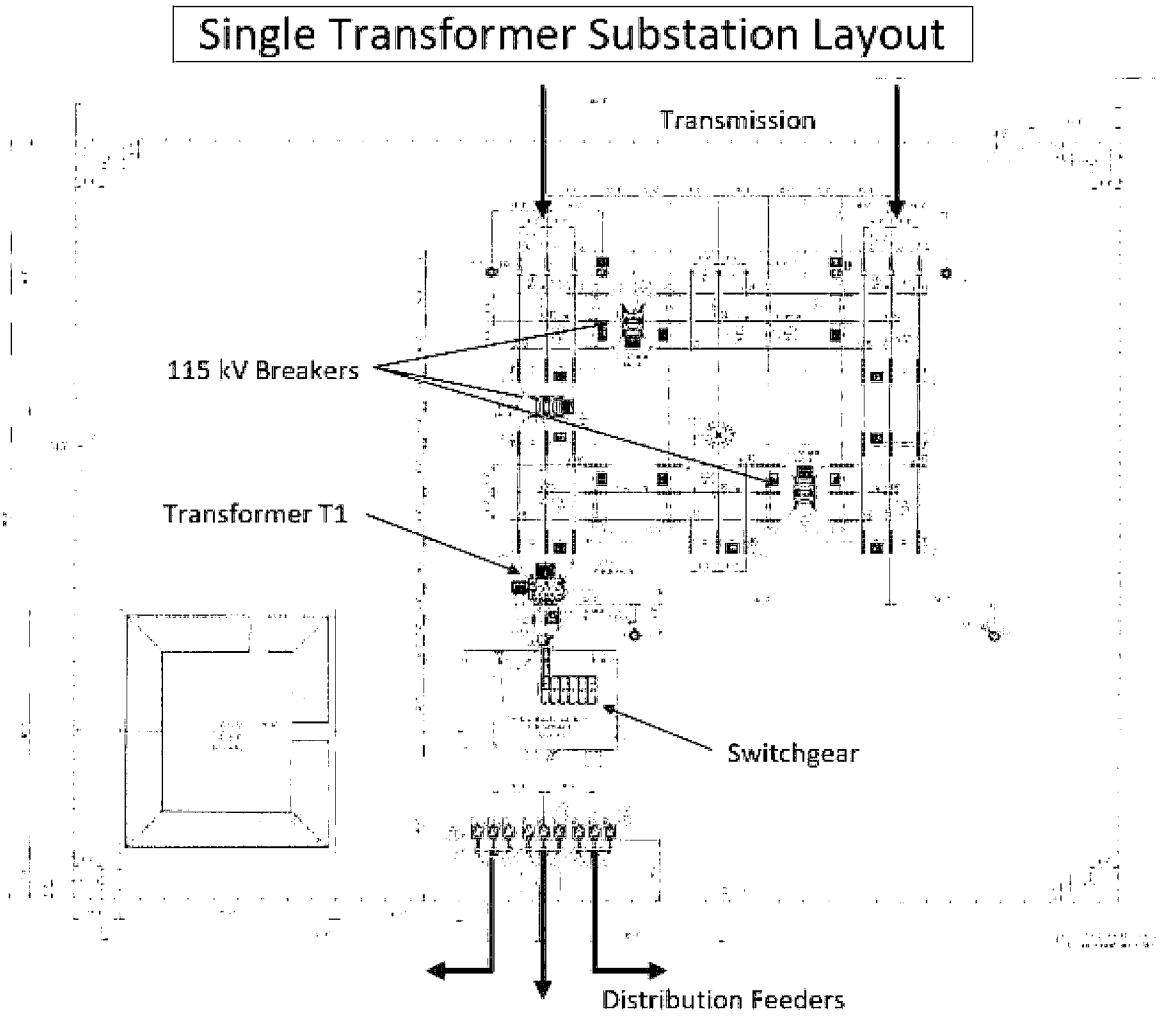
A. Yes, the projects from Mr. Norwood's list that were not identified and described in my direct testimony are as follows:

DT382 - RIPLEY T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS
DT379 - PENDALE T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS
DT291 - GLOBAL REACH T2 AND SWITCHGEAR
DT184 - RIO BOSQUE CAPACITOR BANK ADDITION

Q. NOTING THAT THREE OF THE FOUR PROJECTS IN THE LIST ABOVE INVOLVE A "T2 TRANSFORMER", COULD YOU PLEASE EXPLAIN EPE'S BASIC SUBSTATION DESIGN AND THE PROCESS FOR ADDING A SECOND TRANSFORMER TO AN EXISTING SUBSTATION?

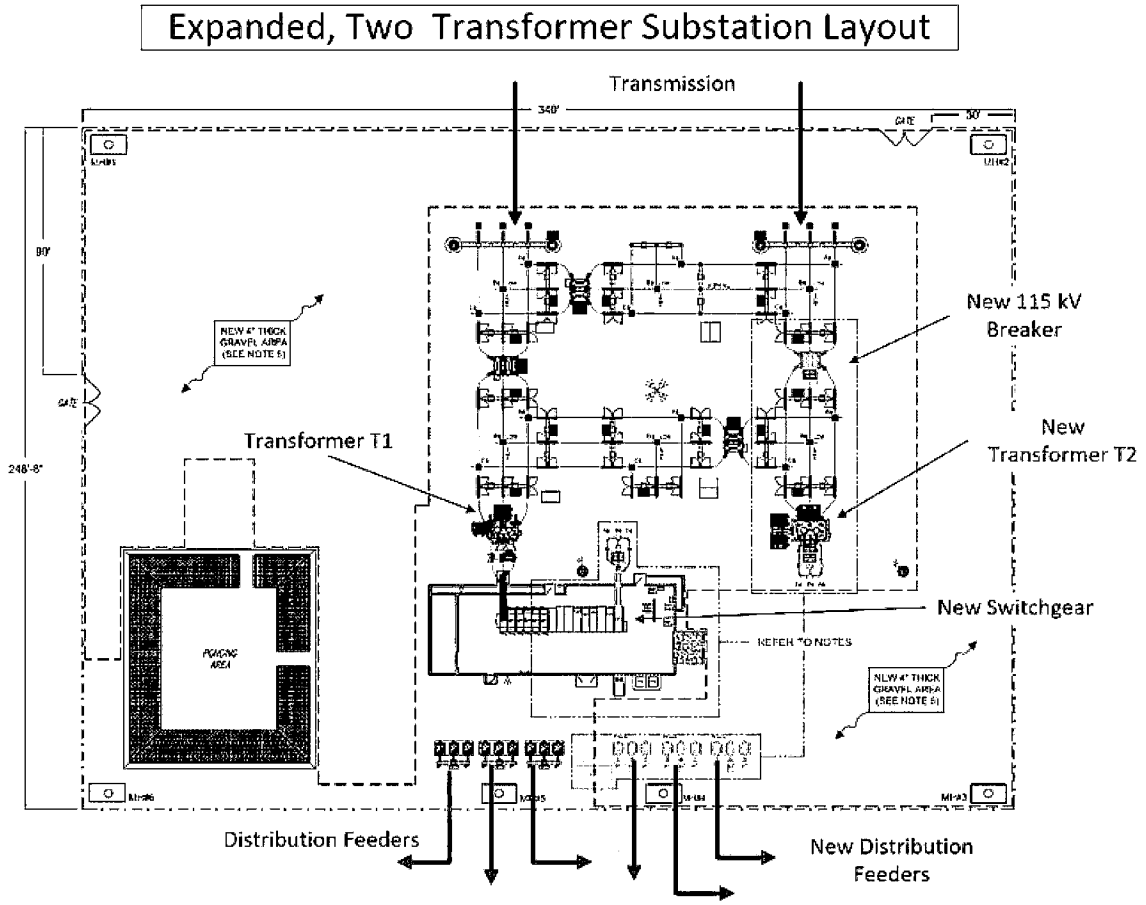
A. The design and construction of a new substation is performed to meet the requirements of the Distribution 10-year plan. In the case of Pendale Substation, Ripley Substation, and Global Reach Substation, the initial request was for a single distribution transformer substation to serve three distribution feeders to the support the load growth in the area. This substation design was developed to receive and protect two 115kV transmission lines, one 115/13.8kV Distribution Power Transformer, and a 15kV switchgear. The bus configuration is a six-position ring bus, this type of arrangement isolates a single component. It places the circuit breakers in a ring with circuits tapped between the breakers. The advantages of this arrangement are the flexible operation, a high degree of reliability, ease of maintenance for ring equipment, double feed to each circuit element, and an economic design. At this point of the design, the substation is left with available bays for future system needs, whether it be a transmission line and/or a second distribution transformer. The low side of this substation incorporates a switchgear that incorporates the same type of configuration and protection as the high side ring bus. The switchgear is configured such that it protects the transformer and the three feeders served by the voltage

regulators. The illustration below presents EPE's standard, single transformer, two transmission line, substation configuration. This design anticipates the eventual expansion of the substation to accommodate a second transformer.



As the load continued to grow within the Pendale, Ripley, and Global Reach substation areas, a second distribution transformer was required to provide three additional feeders at each substation. A distribution transformer, switchgear, circuit breaker and voltage regulators were purchased to meet the request for the expansion of all three substations. Along with the additional equipment, EPE is working on implementing a load restoration automation scheme within Pendale and Ripley substations to return customers back in service in a shorter timeframe during a transformer outage. This automation scheme is implemented by configuring the existing and new switchgear and the relay

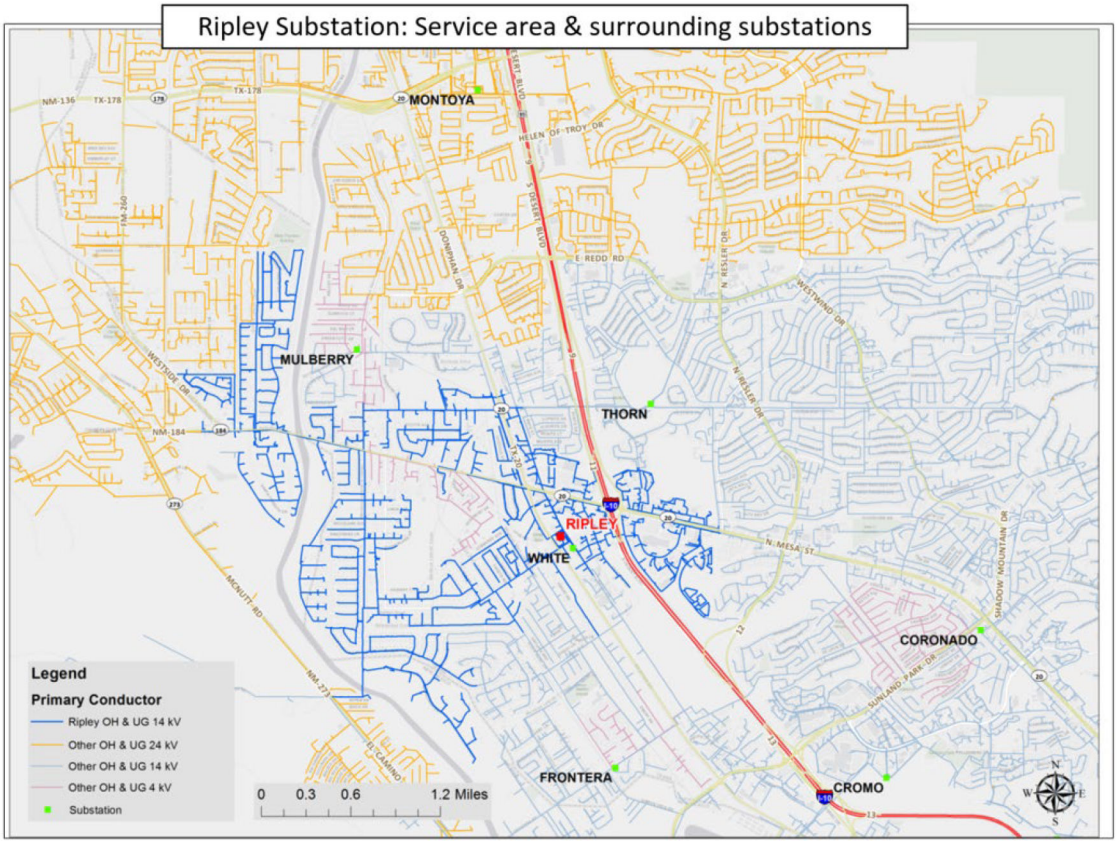
equipment. Global Reach substation is the oldest of the three substations and retrofitting it for a new restoration automation scheme would be more difficult and not included in the scope of that particular project.



The flexibility of the six position 115kV ring bus configuration facilitates the additional equipment to be installed without having to schedule major outages that would impact customers. The installation of the second switchgear to the existing switchgear does require scheduled off-load of the transformer in order to make the needed upgrades for the load restoration automation scheme. These upgrades included the installation of bus protection scheme and commissioning of the automation controller.

Q. WHY WAS PROJECT DT-382 RIPLEY T2 XFMR NEEDED?

A. Ripley substation is a 115 kV / 13.8 kV distribution substation located on the west side of El Paso and, prior to the completion of this project, it was a single transformer, three feeder (distribution circuit) substation. The substations adjacent to Ripley substation (also 115 kV / 13.8 kV substations) are Thorn Substation and Cromo Substation. Again, prior to this project the single transformer at Ripley substation was a 30 MVA transformer and each of the three distribution circuits were rated to carry up to 10 MVA of customer load. The illustration below shows the proximity of Ripley substation to the adjacent substations.



Consistent with EPE distribution planning philosophy, the future load projections of this area of EPE's service territory called for a capacity expansion of Ripley substation to meet both the existing customer load and the projected customer load growth. Included in the addition of a new transformer (T2), was a new switchgear, and the related equipment needed to serve additional feeders out of this substation. Project DT-382 RIPLEY T2 XFMR was completed in July of 2019.

Q. DID EPE CONSIDER OTHER ALTERNATIVES TO THE EXPANSION OF RIPLEY SUBSTATION TO ADD A SECOND TRANSFORMER AT THE SUBSTATION?

A. Yes. The alternative solution would be to build a completely new substation in that general area of the city of El Paso to relieve some of the load on Ripley substation. The new substation alternative would be much more expensive in terms of both time and cost.

Q. WHY WAS PROJECT DT-379 PENDALE T2 XFMR NEEDED?

A. Pendale substation is a 115 kV / 13.8 kV distribution substation located in central El Paso and, prior to the completion of this project, it was a single transformer, three feeder (distribution circuit) substation. The substations adjacent to Pendale substation (also 115 kV / 13.8 kV substations) are Wrangler Substation, Lane Substation, Mann Substation, and Sol Substation. Again, prior to this project the single transformer at Pendale substation was a 30 MVA transformer and each of the three distribution circuits were rated to carry up to 10 MVA of customer load. The illustration below shows the proximity of Pendale substation to the adjacent substations.

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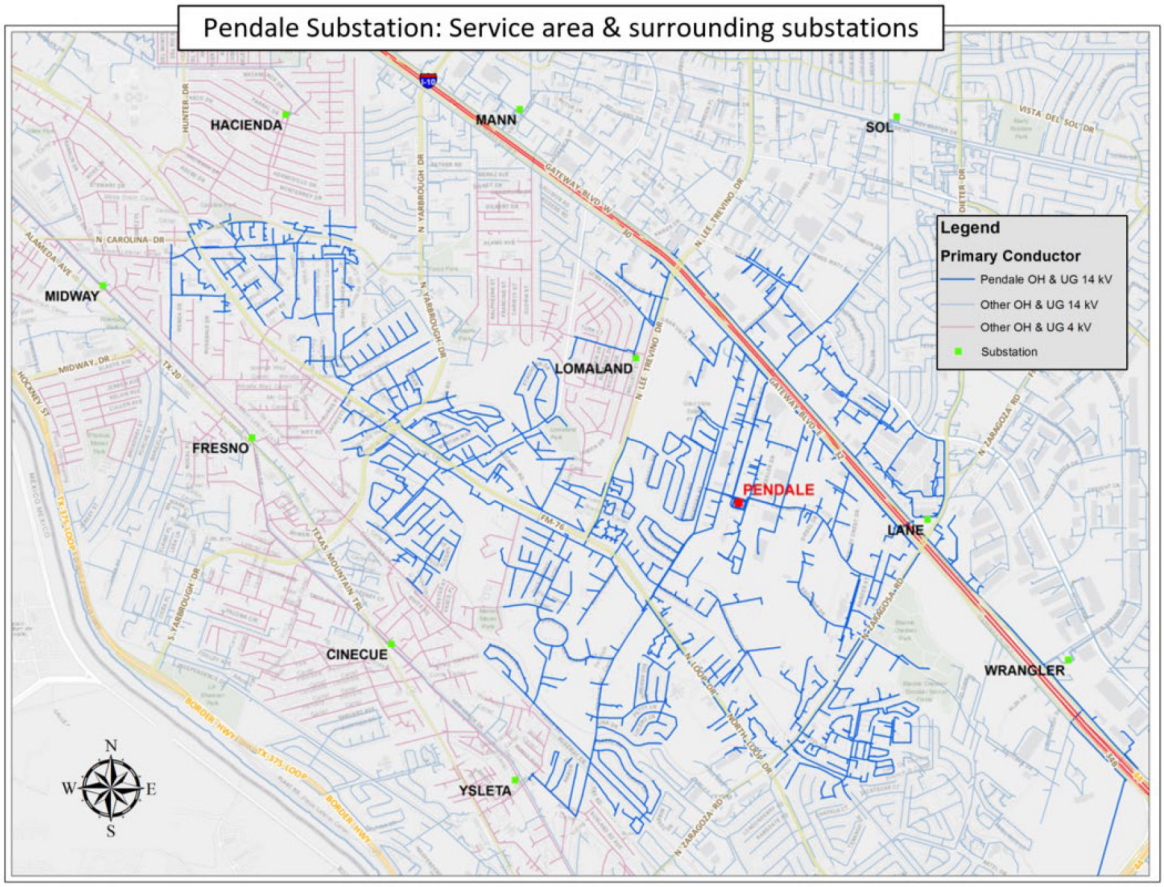


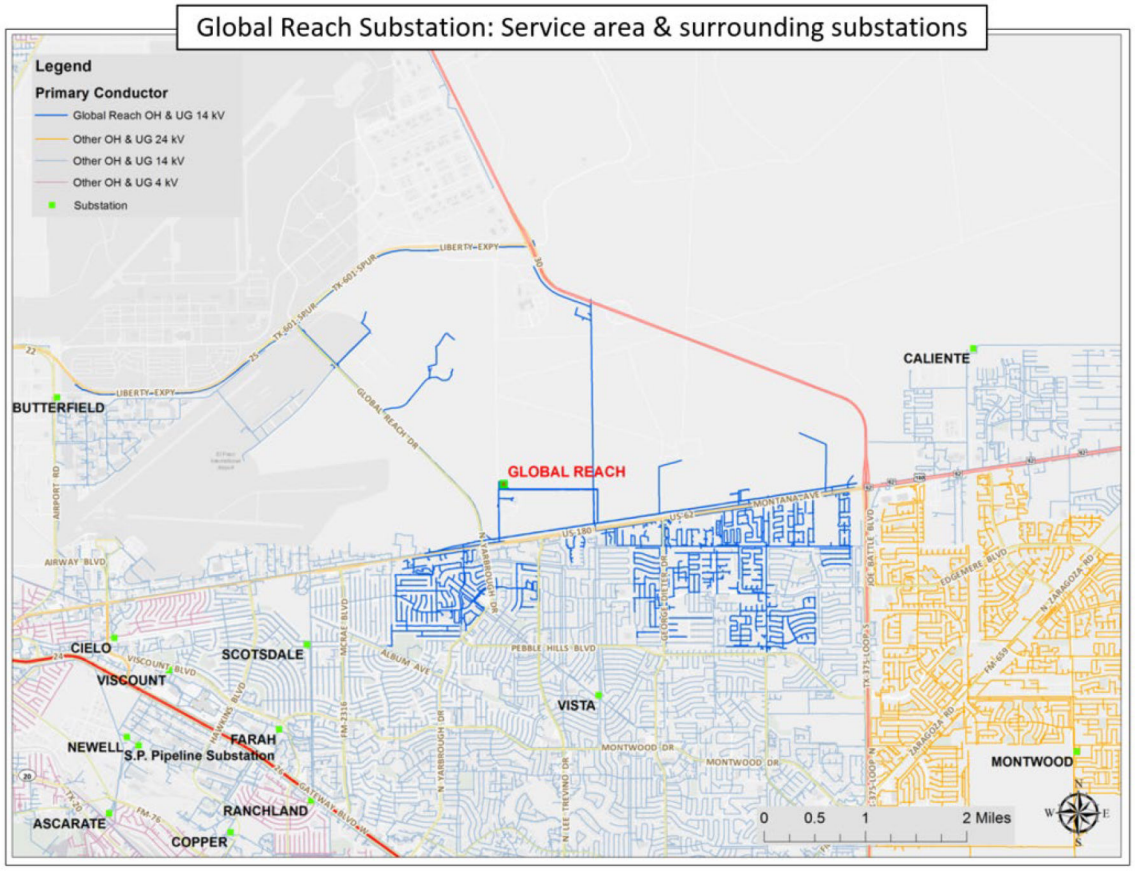
Consistent with EPE distribution planning philosophy, the future load projections of this area of EPE's service territory called for a capacity expansion of Pendale substation to meet both the existing customer load and the projected customer load growth. Included in the addition of a new transformer (T2), was a new switchgear, and the related equipment needed to serve additional feeders out of this substation. Project DT-379 PENDALE T2 XFMR was completed in December of 2019.

Q. DID EPE CONSIDER OTHER ALTERNATIVES TO THE EXPANSION OF PENDALE SUBSTATION TO ADD A SECOND TRANSFORMER AT THE SUBSTATION?

A. Yes. The alternative solution would be to build a completely new substation in that general area of the city of El Paso to relieve some of the load on Pendale substation. The new substation alternative would be much more expensive in terms of both time and cost.

Q. WHY WAS PROJECT DT-291 GLOBAL REACH T2 NEEDED?

A. Global Reach substation is a 115 kV / 13.8 kV distribution substation located in east El Paso and, prior to the completion of this project, it was a single transformer, three feeder (distribution circuit) substation. The substations adjacent to Global Reach substation (also 115 kV / 13.8 kV substations) are Scotsdale Substation, Vista Substation, Caliente Substation, and Butterfield Substation. Again, prior to this project the single transformer at Global Reach substation was a 30 MVA transformer and each of the three distribution circuits were rated to carry up to 10 MVA of customer load. The illustration below shows the proximity of Global Reach substation to the adjacent substations.



Consistent with EPE distribution planning philosophy, the future load projections of this area of EPE's service territory called for a capacity expansion of Global Reach sub to meet both the existing customer load and the projected customer load growth. Included in the addition of a new transformer (T2), was a new switchgear, and the related equipment

needed to serve additional feeders out of this substation. Project DT-291 GLOBAL REACH T2 was completed in October of 2018.

Q. DID EPE CONSIDER OTHER ALTERNATIVES TO THE EXPANSION OF GLOBAL REACH SUBSTATION TO ADD A SECOND TRANSFORMER AT THE SUBSTATION?

A. Yes. The alternative solution would be to build a completely new substation in that general area of the city of El Paso to relieve some of the load on Global Reach substation. The new substation alternative would be much more expensive in terms of both time and cost.

Q. WHY WAS PROJECT DT-184 RIO BOSQUE CAPACITOR BANK NEEDED?

A. Rio Bosque substation is a 115 kV / 13.8 kV distribution substation located in Southeast El Paso. Rio Bosque substation was, at the time of this project, a single transformer, three feeder (distribution circuit) substation. Prior to the execution of this project, EPE was experiencing voltage (low voltage) issues in this area of EPE's system during peak loading situations (summer months). The standard electric utility solution to voltage issues at the system level is to install capacitors in the local substation to provide reactive power compensation during high loading situations.

Consistent with EPE distribution planning philosophy, and EPE's System Expansion Planning (transmission level planning) this project included the installation of a two-stage 15 MVAR Capacitor Bank at Rio Bosque distribution substation to stabilize voltage in the far east area of EPE's service territory.

Q. DID EPE CONSIDER OTHER ALTERNATIVES TO ADDING A CAPACITOR BANK AT RIO BOSQUE SUBSTATION WITH PROJECT DT-184 RIO BOSQUE CAPACITOR BANK?

A. Yes. The alternative solution would be to install a small generating unit at, or near, Rio Bosque substation to support the area load and provide reactive power during high loading situations. Choosing a static, substation, capacitor bank over a small-scale generating unit was not a tough decision to make in terms of cost and difficulty.

V. TIEC Witness Higgins Regarding "69 kV Transmission System Allocation" (Pages 25-27)

Q. TIEC WITNESS HIGGINS, AT PAGES 25-27 OF HIS TESTIMONY, RECOMMENDS THAT EPE SEPARATE THE COSTS OF 69 KV AND 115 KV AND ABOVE SUB-FUNCTIONS FOR CLASS COST OF SERVICE PURPOSES, AND EXCLUDE CUSTOMERS SERVED AT 115 KV FROM THE ALLOCATION OF 69 KV COSTS. WHAT IS THE BASIS FOR THEIR CONTENTION?

A. In summary, it is Mr. Higgins' contention that EPE's transmission-connected customers taking service at 115 kV do not utilize or benefit from the existence and operation of the 69 kV transmission portion of EPE's transmission system. As such, he contends that 115 kV transmission connected customers have been allocated too much of the cost of the construction, maintenance, and operation of the 69 kV transmission portion of EPE's transmission system. He also contends that the agreement to differentiate transmission level loss factors in the settlement of EPE's most recent fuel reconciliation between 115 kV and above and 69 kV support not assigning 115 kV customers any of the 69 kV costs.

Q. DO EPE'S 115 KV CONNECTED TRANSMISSION CUSTOMERS UTILIZE OR BENEFIT FROM THE EXISTENCE AND OPERATION OF THE 69KV PORTION OF EPE'S TRANSMISSION SYSTEM?

A. Yes, they do because of the way EPE's interconnected transmission system operates.

Q. HOW DOES EPE'S TRANSMISSION SYSTEM OPERATE AS AN INTERCONNECTED SYSTEM?

A. What is commonly referred to as "the transmission system" or "transmission grid" is, in reality, a collection of transmission lines (of varying operating voltages), substations, and generators operating as an interconnected system. Independently the components of the transmission system (transmission lines, substations, and generation) have little or no functional value. All together, the components of the transmission system form a dynamic, "networked" system, where multiple transmission lines connect multiple substations and multiple generators. The direction and level of power flowing over any specific line, at any specific voltage, at any specific time, is dependent on the electrical loading of the

substations, the amount and location of connected generation, and the operating state of each of the transmission lines (either in or out of service).

Q. HOW DOES EPE KNOW HOW THE TRANSMISSION SYSTEM IS PERFORMING AT ANY POINT IN TIME?

A. EPE, like other utilities, knows by way of deployed technology (including the System Control and Data Acquisition ("SCADA") system, and the Energy Management System ("EMS")), metering, and the physical state of all the components of the transmission system at any instant in time. Also, by way of the deployed technology and metering EPE has historical data that reveals how the transmission system has operated in the past under the same or different operating configurations.

Q. ARE THE 69-KV TRANSMISSION LINES THAT ARE INTERMINGLED AND INTERCONNECTED WITH THE 115-KV TRANSMISSION LINES OF THE TRANSMISSION SYSTEM USEFUL AND BENEFICIAL TO THE 115-KV CONNECTED CUSTOMERS?

A. Yes. It should be understood that power flows over transmission lines using the path of least resistance. The image in my Exhibit RCD-7R presents an illustration of the portion of EPE's transmission system that serves the greater El Paso area. Upon inspection, the reader will note that in many cases the 69-kV transmission lines run electrically parallel to the 115-kV transmission lines. Whether the power flow from any of the generators to any single transmission customer takes a direct path exclusively on the 115-kV lines or the power flow takes a split path over both the 69-kV lines and the 115-kV lines depends on several interrelated system configuration factors. These factors are customers' demands, equipment in service, power flowing on the transmission system, etc., the unique configuration of the transmission system as a whole at the moment of power flow.

Whereas Ms. Mr. Higgins' testimony might leave one with the notion that we could define, even dictate, a specific path of energy flow exclusively over the 115-kV lines from the generators to a customer connected at 115-kV, the fact is that the operational configuration of the transmission system as a whole (from minute to minute) will define the path of power flow from the generators to the customer. The transmission system

functions as an integrated system, inclusive of voltage level differences of transmission lines. It is impossible to prescribe a specific and permanent path of power flow over specific transmission lines for individual customers because the configuration of the transmission system is in a constant state of change.

Also worthy of note, and a benefit to all customers, is the fact that the 69-kV transmission lines, interconnected with the 115-kV transmission lines, enhances the overall reliability of the transmission system. In many cases the 69-kV lines provide a second, or redundant, path for energy flow in the event of a 115-kV line outage (whether forced or scheduled) and vice versa.

Q. DOES EPE MAINTAIN SEPARATE POWER FLOW MODELS FOR EACH TRANSMISSION VOLTAGE LEVEL?

A. No, there are not different power flow models for the different transmission voltage levels (a separate power flow model for 69-kV and a separate power flow model for 115-kV, etc.). There is only one power flow model that represents the integrated transmission system, and it is necessarily inclusive of all transmission lines regardless of voltage class. There is no separating out, for a different power flow analysis, one voltage level from all others.

Q. DOES EPE MAINTAIN POWER FLOW MODELS OF ITS TRANSMISSION SYSTEM FOR PLANNING AND ANALYSIS PURPOSES?

A. Yes. EPE has and routinely runs power flow models and can provide different power flow system configuration cases. Some of the cases will show changes to the flow of power over the 69-kV transmission lines for different transmission line outages and/or different generator outages. A change in the level or direction of power flow on the 69-kV transmission system, while holding the load constant at all of the substations (including the 115-kV connected customers) would demonstrate how changes in the transmission system configuration will affect the path of power flow from the generation to the load. In sum, such a power flow model would show that the 69-kV system supports the reliability of the 115-kV system of lines, and the 115-kV customers benefit from the 69-kV system.

Q. WHAT ABOUT THE CONTENTION THAT THE DIFFERENCES IN TRANSMISSION LEVEL LOSS FACTORS BETWEEN 115-KV AND ABOVE AND 69-KV SUGGESTS THAT 115-KV CUSTOMERS USE THE SYSTEM DIFFERENTLY?

A. Of course there are different loss factors for the different operating voltage levels of transmission lines. Lower voltages require higher levels of current to move power, and higher levels of current generate higher line losses. Power flows from the 115-kV transmission lines to the 69-kV transmission lines and from 69-kV transmission lines to the 115-kV transmission lines depending on the system configuration at the time you are observing the power flow patterns. Mr. Higgins' conclusion that 115-kV customers do not use, or benefit from, the interconnection of the 69-kV lines in the overall transmission system is simply not true. The 115-kV-connected transmission customers do use and benefit from the interconnected 69-kV lines and should therefore share that cost.

Q. DO YOU HAVE ANY ADDITIONAL THOUGHTS ON THIS ISSUE?

A. Yes. Like the transmission lines that function together as a network system, the state and federal roads and highways form a "network" of routes for vehicle traffic. I commute for work between Las Cruces, New Mexico, and El Paso, Texas, (about 50 miles one way) three to five days of a normal work week. Ninety-seven percent of the time I commute by way of the Interstate 10 ("I-10") federal highway that connects the two municipalities. There are two alternate road routes (New Mexico Highway 478 and New Mexico Highway 28) that I could, and sometimes do, take to make the commute. With a posted speed limit of 75 miles-per-hour, I-10 is faster and, most of the time, not overly congested. Each of the alternate routes for my commute passes through a series of smaller communities between Las Cruces and El Paso, and speed limit variations make the commute much slower.

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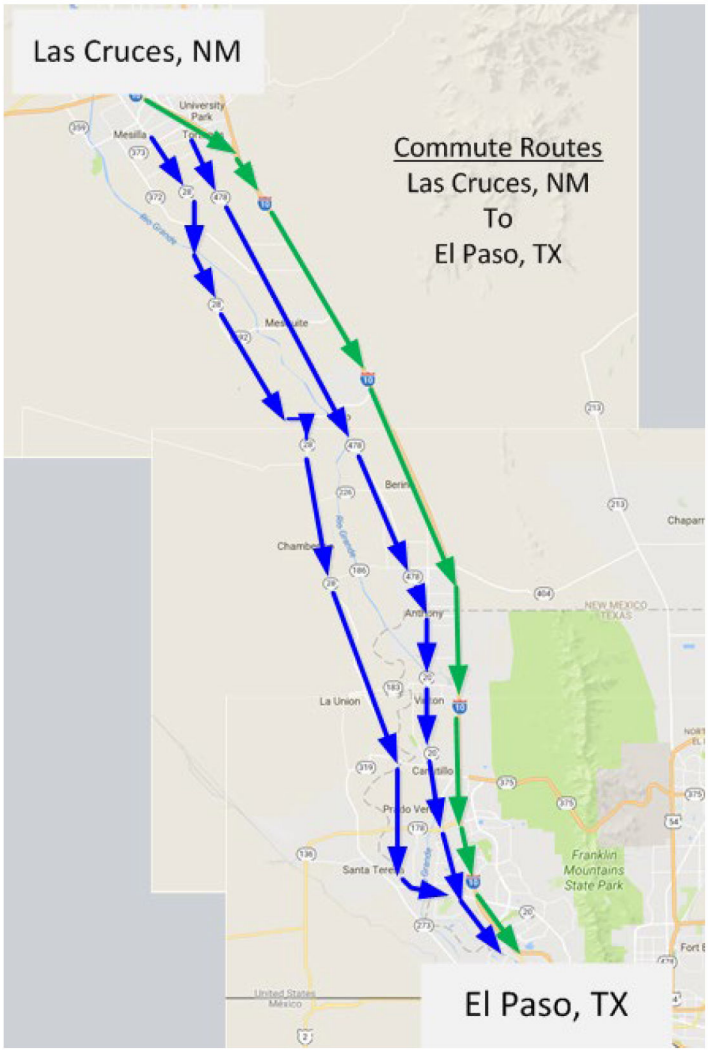
Figure RCD-1R



Although I rarely use the alternate routes for my commute, I do benefit from them being there. First, the existence of the alternate commute routes helps reduce traffic on my preferred commute route (less traffic, less congestion, less opportunity of accidents, less stress, etc.). Second, I am not totally dependent on one route of commute. If there is an accident or a highway closure, I can take an alternate route to get to work or home from work. In summary, the reliability of my work/home commute is more secure with the alternate routes and the state and federal highways that connect and function as a network. The notion that my tax dollars should not support the operation and maintenance of the alternate routes of commute is ridiculous.

EPE's transmission system is, in many ways, analogous to the state and federal highway system. The flow or energy from the generation to the 115-kV connected customer does not always take a path through the 69-kV portion of the transmission system, but the 115-kV connected customer most certainly benefits from that alternate path of service. Specifically, the benefits are reduced congestion (potential overloading) on the 115-kV lines, and by providing an alternate path of service in high congestion and outage situations.

In summary, all customers share the benefit of the operational nature of the transmission system to efficiently and reliably deliver electric energy to their home and/or business.

VI. Conclusion

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

PUBLIC

Exhibits RCD 1-R and RCD-2R are CONFIDENTIAL and/or HIGHLY SENSITIVE PROTECTED MATERIALS exhibits.

SOAH DOCKET NO. 473-21-2606
PUC DOCKET NO. 52195

APPLICATION OF EL PASO	§	BEFORE THE STATE OFFICE
ELECTRIC COMPANY TO CHANGE	§	OF
RATES	§	ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S SUPPLEMENTAL RESPONSE TO
CITY OF EL PASO'S EIGHTH REQUEST FOR INFORMATION
QUESTION NOS. CEP 8-1 THROUGH CEP 8-13

CEP 8-3:

Please provide the original budget, final cost, purpose and plant in service date of each of the top 20 highest distribution capital additions whose costs have been included in the Company's DCRF since the Company's last base rate case, along with information explaining the reasons for any increase in the original budget cost of each project of more than 10%.

SUPPLEMENTAL RESPONSE:

In accordance with the agreement with counsel from the City of El Paso, El Paso Electric Company ("EPE") was given additional time to draft its response to CEP 8-3.

EPE has identified the "top 20 highest distribution capital additions" included in the distribution cost recovery factors ("DCRF") it filed in Public Utility Commission of Texas Docket Nos. 49148 and 49395 that are not blanket projects. This response includes both a general description of EPE's planning and budgeting processes as well as an individual analysis for each project's included in the table below.

Table CEP 8-3.1

Top 20 DCRF Projects
(Docket Nos. 49148 and 49395)[1]

Project Number	Project Description	Project Total less AFUDC and CE&S	Page
DT359	NUWAY NEW DISTRIBUTION SUBSTATION	$14,431,157	5
DT371	EXECUTIVE (CE-1) NEW SUBSTATION	$11,021,964	6
DT229	SCOTSDALE TRANSFORMER & SWITCHGEAR REPLACEMENTS	$8,159,325	7
DT220	SANTA FE SUBSTATION TRANSFORMER, SWITCHGEAR, AND EQUIPMENT UPGRADES	$7,420,698	8
DT186	LEO SUBSTATION 115 KV CONVERSION & GETAWAY UPGRADE	$6,899,678	9
DT365	SPARKS T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATORS	$3,784,491	10
DT382	RIPLEY T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS	$3,397,392	11
DT379	PENDALE T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS	$3,351,288	12
DT389	SUNSET NORTH AUTO TRANSFORMER REPLACEMENT	$3,223,211	13
DT291	GLOBAL REACH T2 AND SWITCHGEAR	$3,009,279	14
DT194	SUNSET 69KV-4KV TRANSFORMER, REGULATORS, AND FEEDER REPLACEMENTS	$1,947,525	15
DT383	PELLICANO T2 TRANSFORMER ADDITION	$2,628,214	16
DT184	RIO BOSQUE CAPACITOR BANK ADDITION	$2,139,566	17
DT218	SUNSET 14KV SWITCHGEAR AND NETWORK FEEDER REPLACEMENTS	$2,382,644	18
DT353	STREET CAR (TROLLEY) - CITY OF EL PASO	$1,706,470	19
DT300	FARMER 69KV 7.5 MVAR CAPACITOR BANK	$1,659,158	20
DT361	SUBSTATION CIRCUIT BREAKER UPGRADES MPS	$1,443,037	21
DT417	MONTWOOD T1 TRANSFORMER UPGRADE TO 50 MVA	$1,484,196	22
DT392	SOL & VISTA DISTRIBUTION SUBSTATION UPGRADES	$1,524,823	23
DT404	MONTWOOD SUBSTATION LAND & PRE-FAB WALL	$1,642,242	24

[1] The project costs shown in this response do not include AFUDC or Capitalized Engineering and Supervision (CE&S) allocations, which are not included in the original project budgets.

Capital Planning Process

Historically, EPE has identified major capital transmission and distribution projects through its 10-year planning process for transmission (known as the annual transmission 10-year expansion plan) along with its 10-year planning process for distribution (known as the annual distribution 10-year expansion plan). The transmission planning process involves analyzing the bulk transmission electric system, but also focuses on addressing distribution load-serving needs and the necessary upgrades or replacements to reliably serve that load. Additionally, the need for capital projects may be identified by planned maintenance needs, imminent needs such as equipment failure, or unanticipated system changes. Capital project planning is an ongoing process that considers both transmission and distribution activities in conjunction with all of these scenarios of identifying project needs. Accordingly, the scope of a project may change over time as a result of the ongoing capital project planning processes for both transmission and distribution as new needs arise along with alternatives for addressing the needs.

Budgeting Process

A budget is initially developed to reflect the initial scoping for a particular project. This initial budget presents a preliminary budget estimate based on the identified driving need for the activity. This scoping and budgeting then evolve as the project moves forward as a result of the capital project planning processes described above.

Internal cost estimates are uploaded into the Company's Power Plan cost repository on a semi-annual basis without contingencies. Two budget versions are provided below. The Scope Zero budget version is considered the first time a system need was identified, even though it may be that the scope is still being defined based on overall system needs. The Pre-Construction Budget is when most contract services have been bid but before any major internal construction efforts have started. EPE has identified the approximate dates each budget version was developed in the individual analyses provided below.

Sometimes opportunities to perform additional upgrades to equipment to prepare for anticipated load increases or technology needs are identified after work on a project has begun. This additional work is added to the project scope once it is determined that the additions are reasonable, necessary, and prudent. EPE has found that retrofitting completed projects to accommodate new technology is both time consuming and expensive. As a result, the Company may at times expand projects or incorporate newer technology at the time of construction to avoid subsequent retrofits and redeployment of engineering and technical resources. The Company has found that addressing operational opportunities is often optimal while the project is ongoing as opposed to retrofitting projects in the future after the project is completed. This forward-looking approach tends to save costs in the longer term and thus results in lower overall costs to customers.

Common Variances

During the period covered by the design and construction of the distribution projects included in this response, a few common changes in policy and standards took place:

- Transformers changed from 30 Mega Volt-Ampere ("MVA") to 50 MVA: In 2016 the decision was made that any new distribution substations or expanded distribution substations should use transformers with a 50 MVA rating. This decision was made to accommodate future load growth and so it would be possible to offload transformers more frequently for planned maintenance cycles. This approach to proactively augment capacity has implications on existing substations beyond just accommodating the transformer. The bus, breakers, grounding, controls, and ancillary infrastructure (e.g., grounding) must all be evaluated and improvements determined necessary to support the improved capacity.
- Upgraded switchgear equipment: As technology enhancements are made in automation and switching, our switchgear specifications have evolved and these changes are incorporated into the equipment. This equipment must be upgraded to meet the transformer upgrades as well.

In addition, inflationary escalation of costs may be a factor for projects that were initially budgeted more than a few years ago.

DT359 - NUWAY SUBSTATION
Scope Zero Budget estimated May 2013
Pre- Construction Budget estimated November 2018
In Service Date 12/17/2019

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$14,431,157	$ 4,099,229	$10,331,928	252%	$ 12,168,853	$ 2,262,304	19%

The project was necessary to improve system reliability and serve load growth in the west EPE service territory. Further project details can be found in the direct testimony of EPE witness Mr. Doyle in Docket No. 52915, page 40 line 25 through page 41, line 21.

The Scope Zero assumed the new substation would be located northwest of Interstate 10 ("I-10") and would include a six-position ring bus with two 30 MVA transformers, two switchgears, and four feeders. This initial location would have required routing a 115 kilovolt ("kV") transmission line across Interstate 10 and was a smaller lot. The decision was made to acquire property closer to existing transmission infrastructure and run distribution feeders across I-10 instead of the transmission line, which would help to expedite construction.

This substation was also chosen to be EPE's first automated substation to include new technology to aid in faster recovery during transformer operations, reduce the number of hardwired alarms, and allow for remote monitoring of substation equipment.

Major equipment and scope changes that contributed to the increase from Scope Zero and from Pre-Construction Budget to actual costs in the project include:

- Transformers changed from 30 MVA to 50 MVA.
- The switchgear was upgraded from the standard configuration to one that supports a higher reliability, aids the automation processes, and provides flexibility to perform maintenance in critical substation equipment without taking any feeders out of service. The engineering and technician labor needed for the first implementation of these automated systems was more than had been initially estimated.
- The substation site was larger than initially estimated and required additional grading and drainage work.

DT186 – LEO SUBSTATION 115KV CONVERSION AND GETAWAY UPGRADE
Scope Zero Budget estimated May 2007
Pre-Construction Budget estimated May 2015
In Service Dates: Leo East (LEA) substation 3/23/2017; Dyer substation improvements 3/31/2017

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$ 6,899,678	$ 3,684,871	$3,214,808	87%	$ 5,014,748	$ 1,884,930	38%

This project was necessary to improve system reliability and serve load growth in the Northeast EPE service territory. Further project details can be found in the direct testimony of EPE witness R. Clay Doyle in Docket No. 52915, page 44 line 24 through page 45, line 26.

Major equipment and scope changes that contributed to the increase from Scope Zero and from Pre-Construction Budget to actual costs in the project include:

- Initial budget assumptions planned for completion of the complete substation in 2011. The general escalation in costs from 2009, when the budget was created, until 2015, when the next phase in major engineering work started, also contributed to the variance from original budget.
- The 115kV upgrade of Leo was tied to the upgrade of Dyer substation, which unexpectedly required an upgrade to the high side bus circuit breaker plus related equipment, a new dead end tower to receive the new conductor, as well as upgrades to the control equipment which had not been included in the original budget.
- A rock wall was built around the substation instead of chain link fencing and new sidewalks were added to scope per City of El Paso ordinance.

DT382 – RIPLEY T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS

Scope Zero Budget estimated May 2015
Pre-Construction Budget estimated May 2018
In Service Date 7/18/2019

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$ 3,397,392	$ 2,180,444	$ 1,216,948	56%	$ 3,768,405	$ (371,013)	-10%

This project was necessary to improve system reliability and serve load growth in the west EPE service territory. The project included the addition of one 50 MVA transformer, circuit breakers, voltage regulators, power control room with switchgear, steel bus and related protection, control, and communication equipment needed to serve three additional feeders from this substation.

Major equipment and scope changes that contributed to the increase from Scope Zero and from Pre-Construction Budget to actual costs in the project include:

- Transformers changed from 30 MVA to 50 MVA.
- Upgraded switchgear equipment and technology.
- Upgrades to the electrical equipment inside the control equipment enclosure were needed to meet new loading requirements.

DT379 – PENDALE T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS

Scope Zero Budget estimated May 2015
Pre-Construction Budget estimated November 2018
In Service Date 12/6/2019

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$ 3,351,288	$ 1,620,201	$1,731,086	107%	$ 2,711,297	$ 639,991	24%

This project was necessary to improve system reliability and serve load growth in the Far east EPE service territory. The project included the addition of one 50 MVA transformer, circuit breakers, voltage regulators, expansion of the ESS to install new switchgear, steel bus, and communication equipment needed to serve three additional feeders from this substation.

Major equipment and scope changes that contributed to the increase from Scope Zero and from Pre-Construction Budget to actual costs in the project include:

- Transformers changed from 30 MVA to 50 MVA.
- Upgraded switchgear equipment and technology.
- Upgrades to the electrical equipment inside the control equipment enclosure were needed to meet new loading requirements.

DT291- GLOBAL REACH T2 AND SWITCHGEAR
Scope Zero Budget estimated May 2011
Pre-Construction Budget estimated November 2017
In Service Date 8/2/2018

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$ 3,009,279	$ 1,544,012	$ 1,465,267	95%	$ 2,432,357	$ 576,923	24%

The purpose of this project was to improve system reliability and serve load growth in the East EPE service territory. The project included the addition of one 50 MVA transformer, circuit breakers, voltage regulators, Power Control Room with switchgear, steel bus and related protection, control, and communication equipment needed to serve three additional feeders from this substation.

Major equipment and scope changes which contributed to the increase from scope zero, to pre-construction budget to actual costs in the project include:

- Transformers changed from 30 MVA to 50 MVA.
- Upgraded switchgear equipment and technology.
- Upgrades to the electrical equipment inside the Control Equipment Enclosure were needed to meet new loading requirements.

DT184 – RIO BOSQUE CAPACITOR BANK ADDITION
Scope Zero Budget estimated May 2007
Pre-Construction Budget estimated November 2017
In Service Date 5/15/2019

COST INCLUDED IN RATE CASE REQUEST	SCOPE ZERO BUDGET	VARIANCE TO SCOPE ZERO BUDGET		PRE CONSTRUCTION START BUDGET	VARIANCE TO PRE CONSTRUCTION BUDGET	
$ 2,139,566	$ 250,000	$ 1,889,566	756%	$ 1,747,962	$ 391,604	22%

The purpose of this project is to provide voltage support in the Far East area of EPE service territory. The project included the addition of 2-stage 15 MVar Capacitor Banks at Rio Bosque substation, the related circuit breakers, protection and communication equipment, and a new drainage pond and entry to the substation.

Major equipment and scope changes that contributed to the increase from Scope Zero and from Pre-Construction Budget to actual costs in the project include:

- Additional property had to be purchased adjacent to the existing substation to expand and accommodate the new capacitor bank.
- Substantial grading and drainage improvements were needed to prevent t the potential for flooding of the substation entry access point.

Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit
Individual	TL249	ISLETA PUEBLO LAND RIGHTS RENEWAL	16 824 750	7/19/2017	Project needed to secure land rights along a portion of an existing 345kV transmission line. The transmission line is critical to our import capabilities and the estimated cost of rerouting exceeded the cost of renewing the easement. Project is discussed in detail in R.Clay Doyle testimony.
Individual	TL101	RIO GRANDE TO SUNSET AND SUNSET NORTH TRANSMISSION LINE UPGRADES	9 111 117	Multi-Year	Project needed to rebuild and reconductor two 69kV lines for transmission system planning purposes and due to the age of many of the structures in difficult to reach terrain. Project is discussed in detail in R.Clay Doyle testimony.
Individual	TL174	LANE - COPPER 16900 LINE REBUILD	7 239 999	Multi-Year	Project needed to rebuild and reconductor transmission line per system planning. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.
Individual	TH162	ARROYO AUTOTRANSFORMER ADDITION	7 022 925	12/5/2016	Project needed to add a 345/115kV autotransformer needed to improve transformation capacity. Project is discussed in detail in R.Clay Doyle testimony.
Blanket	TP100	PALO VERDE TRANSMISSION BLANKET	4 890 475	Multi-Year	Project is used to capture allocated capital costs associated with EPE's ownership of Palo Verde transmission assets. EPE has a partial ownership interest in several substations and transmission lines in Arizona that together provide a path for the transport of energy from EPE's 15.8% ownership interest in the PVNGS.
Individual	TA100	LUNA TO SPRINGERVILLE RIGHT OF WAY ACQUISITIONS AND RENEWALS	4 853 912	7/1/2019	Project needed to secure land rights along a portion of an existing 345kV transmission line. The transmission line is critical to our import capabilities and the estimated cost of rerouting exceeded the cost of renewing the easement. Project is discussed in detail in R.Clay Doyle testimony.
Individual	TL231	MILAGRO - LEO 69KV TO 115KV UPGRADE	4 789 170	3/23/2017	Project needed to rebuild and reconductor transmission line per system planning. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.
Blanket	TL015	TRANSMISSION LINES IMPROVEMENTS AND UPGRADES	5 039 804	Multi-Year	Blanket project used for recurring transmission line improvements. This includes steel channel additions timber replacements structure replacements resulting from inspections and other capital investments related to transmission lines or corridors.
Individual	TL127	FARMER - FELIPE STRUCTURE REPLACEMENT	4 692 597	Multi-Year	Project needed to replace wood structures with steel due to repeated maintenance and outage issues. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.
Individual	TL239	DURAZNO-ASCARATE 115KV TRANSMISSION LINE REBUILD	4 378 604	Multi-Year	Project needed to maintain system reliability and to increase emergency rating of this line to 230 MVA. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.
Blanket	TH166	ARROYO-WEST MESA 345 KV LINE REPLACEMENTS/IMPROVEMENTS	4 125 494	Multi-Year	Transmission blanket project to replace structures timbers and add line grounding to the Arroyo-West Mesa 345kV transmission line. Replacements are identified during annual line patrol inspections.
Individual	TL247	TXDOT TRANSMISSION LINE MODIFICATIONS	4 057 641	Multi-Year	Project to capture transmission line adjustments required by TXDOT for the Montana widening phase one project. EPE is required to comply with relocation of structures in TXDOT right-of-way.
Individual	TL181	MONTANA SUBSTATION AND TRANSMISSION LINES	3 544 863	Multi-Year	Project needed to maintain system reliability and support load growth. Multi-year project to construct five new 115kV lines per System Expansion Plan to carry load from new LM5100 generators at Montana Power Station.
Individual	TL293	FABENS TO FELIPE TRANSMISSION LINE UPGRADES	3 288 981	12/15/2020	Project needed to maintain system reliability and support load growth in east El Paso. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.
Individual	TL240	SUNSET NORTH-DURZNO 115KV LINE UPGRADES	3 055 978	9/ 0/2018	Project needed to maintain system reliability and to increase emergency rating of this line to 230 MVA. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.
Individual	TS123	CALIENTE AUTOTRANSFORMER AND CIRCUIT BREAKER REPLACEMENT	2 920 232	8/15/2017	Project needed for replacement of a 345/115 kV autotransformer and the related circuit breaker at Caliente Substation. These replacements were due to age and on-going maintenance issues and were necessary to ensure the continued operation of the substation.
Individual	TL189	SOL TO VISTA 115kV TRANSMISSION LINE RECONDUCTOR AND REBUILD	2 596 460	6/3/2017	Project needed to maintain system reliability under N-1 conditions and to support additional load growth in the area. Project involved the upgrade of the Sol-Vista 115kV transmission line to 954 ACSR conductor for additional capacity.
Blanket	TS063	TRANSMISSION SUBSTATION IMPROVEMENTS BLANKET	2 390 466	Multi-Year	Blanket project used to record recurring or comparatively small replacements or additions to transmission substation equipment. This equipment can include circuit breakers switches battery banks relays and other substation improvements.
Blanket	TH760	SOUTHWEST NEW MEXICO TRANSMISSION BLANKET - MIXED COSTS	2 291 248	Multi-Year	Blanket project for capital costs at Greenlee Hidalgo and Luna 345kV substations and the transmission lines that connect them. The majority of costs included in this rate case are related to the replacement of the 200 MVAR shunt reactor and related circuit breakers at Luna substation. These replacements were due to age and on-going maintenance issues.
Blanket	TE100	EMERGENCY TRANSMISSION STRUCTURE REPLACEMENT	2 029 022	Multi-Year	A blanket project to record the emergency replacement of transmission structures due to damage by the public weather events and aging infrastructure.

Distribution Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	
Blanket	DT069	TEXAS COMMERCIAL CONSTRUCTION BLANKET	44 746 028	Multi-Year	Needed to maintain or improve system reliability and serve load growth. Involves replacement or installation of overhead/underground distribution facilities to provide service to new commercial/industrial customers installations and provide additional load to existing commercial/industrial customer installations.
Blanket	DT061	TEXAS RESIDENTIAL CONSTRUCTION BLANKET	35 426 072	Multi-Year	Needed to maintain or improve system reliability and serve load growth. Involves replacement or installation of overhead/underground distribution facilities to provide service to new residential customer installations and to provide additional load to existing residential customer installations.
Blanket	DT062	TEXAS DISTRIBUTION BETTERMENT BLANKET	33 156 327	Multi-Year	Blanket project needed to maintain or improve distribution system reliability. Proactive replacement and upgrades of overhead and underground distribution equipment. This equipment includes but is not limited to pole top and pad mount transformers poles switches and conductor.
Individual	DT359	NUWAY NEW DISTRIBUTION SUBSTATION	16 471 140	12/17/2019	Project needed to maintain system reliability and serve load growth. Involved the addition of a new substation to serve forecasted load growth in the west side of El Paso.
Blanket	DT065	TEXAS DISTRIBUTION DAMAGE BLANKET	16 323 388	Multi-Year	Reactive replacement of failed overhead/underground equipment due to damage by the public weather events and aging infrastructure.
Individual	DT371	EXECUTIVE (CE-1) NEW SUBSTATION	12 347 653	Multi-Year	Project needed to maintain system reliability and serve load growth. Involved the addition of a new substation and a temporary substation in the central/westside area of El Paso to serve load growth.
Individual	DT229	SCOTSDALE TRANSFORMER & SWITCHGEAR REPLACEMENTS	9 942 725	12/20/2018	Project needed to maintain system reliability and serve load growth in east El Paso. Involved the replacement and upgrade of most of the substation equipment most of which had reached the end of its useful life.
Individual	DT220	SANTA FE SUBSTATION TRANSFORMER SWITCHGEAR AND EQUIPMENT UPGRADES	8 801 042	3/19/2019	Project needed to maintain system reliability and service forecasted load growth in the downtown El Paso area. Involved the entire rebuild and upgrade of the majority of substation equipment at Santa Fe substation due to age and maintenance issues.
Individual	DT186	LEO SUBSTATION 115 KV CONVERSION & GETAWAY UPGRADE	8 528 067	3/23/2017	Project needed to improve system reliability and serve load growth in the northeast El Paso area. Construction of new Leo substation and upgrades at Dyer and Milagro substations that were needed to support related transmission line upgrades between these substations. Additional capacity was also added with the new substation.
Blanket	DT068	TEXAS OVERHEAD SERVICE NEW/REPLACE BLANKET	8 505 501	Multi-Year	Blanket project needed to maintain or improve system reliability and serve load growth. Replacement and installation of wire and meters associated with new service hookups.
Blanket	MT004	TEXAS METERS BLANKET	8 226 133	Multi-Year	Blanket project needed to maintain or improve system reliability and serve load growth. Replacement or installation of large residential and small and large commercial polyphase meters and primary metering equipment.
Individual	DT189	TEXAS AREA 4KV CONVERSIONS	4 860 348	Multi-Year	Maintain or improve system reliability and serve load growth. Replacement and installation of older 4kv transformers which have exposed primary and secondary terminations with pad mount transformers that have equivalent load supplying capacity. Where it is not feasible to convert to a 4kv pad mount substation 4kv feeders are being converted to either 23.9kv or 13.8kv distributions when possible.
Individual	DT365	SPARKS T2 TRANSFORMER SWITCHGEAR AND VOLTAGE REGULATORS	4 366 5 0	3/8/2018	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer switchgear and related equipment needed to serve additional feeders out of this substation.
Individual	DT382	RIPLEY T2 TRANSFORMER SWITCHGEAR AND VOLTAGE REGULATOR ADDITIONS	3 897 9 8	7/ 8/2019	Project needed to serve load growth in northeast El Paso and maintain reliability. Included the addition of a transformer switchgear and related equipment needed to serve additional feeders out of this substation.
Individual	DT379	PENDALE T2 TRANSFORMER SWITCHGEAR AND VOLTAGE REGULATOR ADDITIONS	3 718 450	12/6/2019	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer switchgear and related equipment needed to serve additional feeders out of this substation.
Blanket	DT063	TEXAS SUBSTATION BETTERMENT BLANKET	3 674 064	Multi-Year	Blanket project to maintain or improve distribution system reliability. Reactive and proactive improvements of distribution substation equipment and infrastructure. This includes but is not limited to grounding grid relay equipment circuit breakers switches battery chargers bushings control house buildings and security fencing.
Individual	DT389	SUNSET NORTH AUTO TRANSFORMER REPLACEMENT	3 656 864	Multi-Year	Project needed to maintain reliability in the downtown/medical district area. Involved the replacement of Sunset North T1 and T3 transformers and related equipment that were at the end of their useful lives.
Blanket	DT372	POLE REPLACEMENT & IMPROVEMENTS TEXAS	3 451 028	Multi-Year	A blanket project used to maintain or improve distribution system reliability. Replacement/Reinforcement of EPE owned poles and other equipment based on inspections.
Individual	DT291	GLOBAL REACH T2 AND SWITCHGEAR	3 439 982	8/2/2018	Project needed to serve load growth in east El Paso and maintain reliability. Included the addition of a transformer switchgear and related equipment needed to serve additional feeders out of this substation.
Individual	DT194	SUNSET 69KV-4KV TRANSFORMER REGULATORS AND FEEDER REPLACEMENTS	3 020 849	Multi-Year	Project needed to maintain system reliability. Involved the replacement of 69kv-4kv Sunset substation switchgear and related equipment due to age and maintenance issues.
Individual	DT383	PELLICANO T2 TRANSFORMER ADDITION	2 996 995	3/9/2018	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer switchgear and related equipment needed to serve additional feeders out of this substation.
Individual	DT184	RIO BOSQUE CAPACITOR BANK ADDITION	2 855 028	5/15/2019	Project needed to provide voltage support and maintain system reliability. Installation of two-stage 15 MVar Capacitor Banks at Rio Bosque distribution substation to stabilize voltage in the far east area of EPE service territory.
Individual	DT218	SUNSET 14KV SWITCHGEAR AND NETWORK FEEDER REPLACEMENTS	2 809 949	5/22/2020	Project needed to maintain system reliability and support load in the downtown area. Replacement of the old 14kV switchgear and the downtown network feeders coming out of the new switchgear up to the first junctions of each feeder.
Blanket	DT121	TEXAS CABLE REPLACEMENT PROGRAM BLANKET	2 426 528	Multi-Year	Blanket project used to maintain or improve distribution system reliability. Replacement of obsolete URD cable pad-mount submersible transformers and other UG equipment in areas with high rates of underground cable failures.
Blanket	DT064	TEXAS LIGHTING BLANKET	2 391 878	Multi-Year	Replacement and installation of El Paso Electric owned area and street lighting infrastructure for municipal and private customers.
Individual	DT416	DISTRIBUTION DUAL VOLTAGE MOBILE TRANSFORMER	2 313 824	Multi-Year	Maintain or improve system reliability. Purchase of a new dual voltage mobile transformer to use as backup for transformer replacements with limited back feed options. Existing fleet of mobile transformers is from the 1950s and are not capable of providing reliable service as they are not adequate to handle all voltages above 4kV.

Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Individual	TL249	ISLETA PUEBLO LAND RIGHTS RENEWAL	16,824,750	7/19/2017	Project needed to secure land rights along a portion of an existing 345kV transmission line. The transmission line is critical to our import capabilities and the estimated cost of rerouting exceeded the cost of renewing the easement. Project is discussed in detail in R.Clay Doyle testimony.	Page 22, line 1 through page 26, line 11 and Exhibit RCD-05.		
Individual	TL101	RIO GRANDE TO SUNSET AND SUNSET NORTH TRANSMISSION LINE UPGRADES	9,111,117	Multi-Year	Project needed to rebuild and reconductor two 69kV lines for transmission system planning purposes and due to the age of many of the structures in difficult to reach terrain. Project is discussed in detail in R.Clay Doyle testimony.	page 26, line 13 through page 28, line 2.	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning studies calling for the project.	
Individual	TL174	LANE - COPPER 16900 LINE REBUILD	7,239,999	Multi-Year	Project needed to rebuild and reconductor transmission line per system planning. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.	page 28, line 4 through page 29, line 15.	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	
Individual	TH162	ARROYO AUTOTRANSFORMER ADDITION	7,022,925	12/5/2016	Project needed to add a 345/115kV autotransformer needed to improve transformation capacity. Project is discussed in detail in R.Clay Doyle testimony.	page 29, line 17 through page 31, line 2.		
Blanket	TP100	PALO VERDE TRANSMISSION BLANKET	4,890,475	Multi-Year	Project is used to capture allocated capital costs associated with EPE's ownership of Palo Verde transmission assets. EPE has a partial ownership interest in several substations and transmission lines in Arizona that together provide a path for the transport of energy from EPE's 15.8% ownership interest in the PVNGS.	General reference for "Other transmission projects" page 36, line 24 through page 37 line 13		FMI 02-03 Confidential Attachment_07 SRP CBI Documents are reviewed and approved by EPE and other participants for these capital improvements.
Individual	TA100	LUNA TO SPRINGERVILLE RIGHT OF WAY ACQUISITIONS AND RENEWALS	4,853,912	7/1/2019	Project needed to secure land rights along a portion of an existing 345kV transmission line. The transmission line is critical to our import capabilities and the estimated cost of rerouting exceeded the cost of renewing the easement. Project is discussed in detail in R.Clay Doyle testimony.	page 31, line 4 through page 33, line 8.		
Individual	TL231	MILAGRO - LEO 69KV TO 115KV UPGRADE	4,789,170	3/23/2017	Project needed to rebuild and reconductor transmission line per system planning. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.	page 33, line 10 through page 34, line 21.	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	
Blanket	TL015	TRANSMISSION LINES IMPROVEMENTS AND UPGRADES	5,039,804	Multi-Year	Blanket project used for recurring transmission line improvements. This includes steel channel additions, timber replacements, structure replacements resulting from inspections, and other capital investments related to transmission lines or corridors. These are upgrades or replacements to existing transmission line assets that are needed for the continued operation of the line.	General reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Reference CEP 13-19 and 13-21 responses.	
Individual	TL127	FARMER - FELIPE STRUCTURE REPLACEMENT	4,692,597	Multi-Year	Project needed to replace wood structures with steel due to repeated maintenance and outage issues. There was no feasible alternative. Project is discussed in detail in R.Clay Doyle testimony.	Page 34, line 23 through 36, line 22.		
Individual	TL239	DURAZNO-ASCARATE 115KV TRANSMISSION LINE REBUILD	4,378,604	Multi-Year	Project needed to maintain system reliability and to increase emergency rating of this line to 230 MVA. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.	General reference for "Other transmission projects" page 36, line 24 through page 37, line 13	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	

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Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Blanket	TH166	ARROYO-WEST MESA 345 KV LINE REPLACEMENTS/IMPROVEMENTS	4,125,494	Multi-Year	Transmission blanket project to replace structures, timbers, and add line grounding to the Arroyo-West Mesa 345kV transmission line. Replacements are identified during annual line patrol inspections.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Reference CEP 13-19 and 13-21 responses.	
Individual	TL247	TXDOT TRANSMISSION LINE MODIFICATIONS	4,057,641	Multi-Year	Project to capture transmission line adjustments required by TXDOT for the Montana widening phase one project. EPE is required to comply with relocation of structures in TXDOT right-of-way.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13		
Individual	TL181	MONTANA SUBSTATION AND TRANSMISSION LINES	3,544,863	Multi-Year	Project needed to maintain system reliability and support load growth. Multi-year project to construct five new 115kV lines per System Expansion Plan to carry load from new LMS100 generators at Montana Power Station.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	STAFF 03-01 Attachment_01 Confidential	
Individual	TL293	FABENS TO FELIPE TRANSMISSION LINE UPGRADES	3,288,981	12/15/2020	Project needed to maintain system reliability and support load growth in east El Paso. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	
Individual	TL240	SUNSET NORTH-DURAZNO 115KV LINE UPGRADES	3,055,978	9/30/2018	Project needed to maintain system reliability and to increase emergency rating of this line to 230 MVA. Project involved the upgrade of structures and replacement of conductor with 954 ACSR for additional capacity.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	
Individual	TS123	CALIENTE AUTOTRANSFORMER AND CIRCUIT BREAKER REPLACEMENT	2,920,232	8/15/2017	Project needed for replacement of a 345/115 kV autotransformer and the related circuit breaker at Caliente Substation. These replacements were due to age and on-going maintenance issues and were necessary to ensure the continued operation of the substation.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13		FMI 02-03 Attachment_05 shows assessment and recommendation for replacement from substation maintenance supervisor.
Individual	TL189	SOL TO VISTA 115kV TRANSMISSION LINE RECONDUCTOR AND REBUILD	2,596,460	6/3/2017	Project needed to maintain system reliability under N-1 conditions and to support additional load growth in the area. Project involved the upgrade of the Sol-Vista 115kV transmission line to 954 ACSR conductor for additional capacity.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Staff 3-7 response provides references to the related Staff 3-7 Attachments that provide system planning documents calling for the project.	
Blanket	TS063	TRANSMISSION SUBSTATION IMPROVEMENTS BLANKET	2,390,466	Multi-Year	Blanket project used to record recurring or comparatively small replacements or additions to transmission substation equipment. This equipment can include circuit breakers, switches, battery banks, relays, and other substation improvements.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Reference CEP 13-19 and 13-21 responses.	FMI 02-03 Attachment_01 and 03 are examples of assessments done by the maintenance crews for work completed under this blanket project.
Blanket	TH760	SOUTHWEST NEW MEXICO TRANSMISSION BLANKET - MIXED COSTS	2,291,248	Multi-Year	Blanket project for capital costs at Greenlee, Hidalgo, and Luna 345kV substations and the transmission lines that connect them. The majority of costs included in this rate case are related to the replacement of the 200 MVAR shunt reactor and related circuit breakers at Luna substation. These replacements were due to age and on-going maintenance issues.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Reference CEP 13-19 and 13-21 responses.	
Blanket	TE100	EMERGENCY TRANSMISSION STRUCTURE REPLACEMENT	2,029,022	Multi-Year	A Blanket project to record the emergency replacement of transmission structures due to damage by the public, weather events, and aging infrastructure.	general reference for "Other transmission projects" page 36, line 24 through page 37 line 13	Reference CEP 13-19 and 13-21 responses.	

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Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Distribution Project Type	**PROJECT**	**PROJECT DESCRIPTION**	**ADJUSTED GROSS ADDITIONS**	**In Service Date**				
Blanket	DT069	TEXAS COMMERCIAL CONSTRUCTION BLANKET	44,746,028	Multi-Year	Needed to maintain or improve system reliability and serve load growth. Involves replacement or installation of overhead/underground distribution facilities to provide service to new commercial/industrial customers installations and provide additional load to existing commercial/industrial customer installations.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19, 13-20, 13-21 and 13-22 responses.	
Blanket	DT061	TEXAS RESIDENTIAL CONSTRUCTION BLANKET	35,426,072	Multi-Year	Needed to maintain or improve system reliability and serve load growth. Involves replacement or installation of overhead/underground distribution facilities to provide service to new residential customer installations and to provide additional load to existing residential customer installations.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19, 13-20, 13-21 and 13-22 responses.	
Blanket	DT062	TEXAS DISTRIBUTION BETTERMENT BLANKET	33,156,327	Multi-Year	Blanket project needed to maintain or improve distribution system reliability. Proactive replacement and upgrades of overhead and underground distribution equipment. This equipment includes, but is not limited to, pole top and pad mount transformers, poles, switches, and conductor.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19, 13-20, 13-21 and 13-22 responses. Also see STAFF 3-7, Attachment 7 - Confidential Errata pages 5 through 11 for EPE Distribution System planning philosophy and load forecasting methods.	
Individual	DT359	NUWAY NEW DISTRIBUTION SUBSTATION	16,471,140	12/17/2019	Project needed to maintain system reliability and serve load growth. Involved the addition of a new substation to serve forecasted load growth in the west side of El Paso. Project is discussed in R.Clay Doyle testimony.	page 40 line 25 through page 41 line 21	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Nuway is part of the West El Paso Service Territory and is referred to as "Transmountain" in the transformer loading tables and in the West El Paso Service Territory summary in the attachment page 36 through 38.	
Blanket	DT065	TEXAS DISTRIBUTION DAMAGE BLANKET	16,323,388	Multi-Year	Reactive replacement of failed overhead/underground equipment due to damage by the public, weather events, and aging infrastructure.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19, 13-20, 13-21 and 13-22 responses. Also see STAFF 3-7, Attachment 7 - Confidential Errata pages 5 through 11 for EPE Distribution System planning philosophy and load forecasting methods.	
Individual	DT371	EXECUTIVE (CE-1) NEW SUBSTATION	12,347,653	Multi-Year	Project needed to maintain system reliability and serve load growth. Involved the addition of a new substation and a temporary substation in the central/westside area of El Paso to serve load growth. Project is discussed in R. Clay Doyle testimony.	paeg 41 line 23 through page 42 line 24	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Executive substation is part of the Underground, Downtown, and Central El Paso Service Territory and is referred to as "CE-1" in the transformer loading tables and in the Underground, Downtown, and Central Service Territory summary in the attachment pages 39 through 41.	

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Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Individual	DT229	SCOTSDALE TRANSFORMER & SWITCHGEAR REPLACEMENTS	9,942,725	12/20/2018	Project needed to maintain system reliability and serve load growth in east El Paso. Involved the replacement and upgrade of most of the substation equipment, most of which had reached the end of its useful life. Project is discussed in R. Clay Doyle testimony.	page 42 line 26 through page 43 line 20	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Scotsdale is part of the East El Paso Service Territory and is referred to as Scotsdale in the transformer loading tables and in the East El Paso Service Territory summary in the attachment pages 44 through 45.	
Individual	DT220	SANTA FE SUBSTATION TRANSFORMER, SWITCHGEAR, AND EQUIPMENT UPGRADES	8,801,042	3/19/2019	Project needed to maintain system reliability and service forecasted load growth in the downtown El Paso area. Involved the entire rebuild and upgrade of the majority of substation equipment at Santa Fe substation due to age and maintenance issues. Project is discussed in R. Clay Doyle testimony.	page 43 line 22 through page 44 line 22	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Sante Fe substation is part of the Underground, Downtown, and Central El Paso Service Territory and is referred to as Santa Fe in the transformer loading tables and in the Underground, Downtown, and Central Service Territory summary in the attachment pages 39 through 41.	
Individual	DT186	LEO SUBSTATION 115 KV CONVERSION & GETAWAY UPGRADE	8,528,067	3/23/2017	Project needed to improve system reliability and serve load growth in the northeast El Paso area. Construction of new Leo substation and upgrades at Dyer and Milagro substations that were needed to support related transmission line upgrades between these substations. Additional capacity was also added with the new substation. Project is discussed in R. Clay Doyle testimony.	page 44 line 24 through page 45 line 26	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Leo is part of the Northeast El Paso Territory and is referred to as "Leo East" in the transformer loading tables and in the Northeast El Paso Service Territory summary in the attachment page 42 through 43.	
Blanket	DT068	TEXAS OVERHEAD SERVICE NEW/REPLACE BLANKET	8,505,501	Multi-Year	Blanket project needed to maintain or improve system reliability and serve load growth. Replacement and installation of wire and meters associated with new service hookups.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19, 13-20, 13-21 and 13-22 responses.	
Blanket	MT004	TEXAS METERS BLANKET	8,226,133	Multi-Year	Blanket project needed to maintain or improve system reliability and serve load growth. Replacement or installation of large residential and small and large commercial polyphase meters and primary metering equipment.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19 and 13-21 responses.	
Individual	DT189	TEXAS AREA 4KV CONVERSIONS	4,860,348	Multi-Year	Maintain or improve system reliability and serve load growth. Replacement and installation of older 4kv transformers, which have exposed primary and secondary terminations, with pad mount transformers that have equivalent load supplying capacity. Where it is not feasible to convert to a 4kv pad mount substation, 4kv feeders are being converted to either 23.9kv or 13.8 kv distributions when possible. Project is discussed in R. Clay Doyle testimony.	page 45 line 28 through page 47 line 19	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. The 4kV planning process is explained in the Attachment document page 10.	
Individual	DT365	SPARKS T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATORS	4,366,530	3/8/2018	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer,switchgear, and related equipment needed to serve additional feeders out of this substation. Project is discussed in R. Clay Doyle testimony.	page 47 line 21 through page 48 line 11	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Sparks is part of the Far East El Paso Service Territory and is referred to as Sparks in the transformer loading tables and in the Far East El Paso Service Territory summary in the attachment page 46 through 47.	

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Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Individual	DT382	RIPLEY T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS	3,897,918	7/18/2019	Project needed to serve load growth in northeast El Paso and maintain reliability. Included the addition of a transformer,swicthgear, and related equipment needed to serve additional feeders out of this substation.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Ripley is part of the West El Paso Service Territory and is referred to as Ripley in the transformer loading tables and in the West El Paso Service Territory summary in the attachment page 36 through 38.	
Individual	DT379	PENDALE T2 TRANSFORMER, SWITCHGEAR, AND VOLTAGE REGULATOR ADDITIONS	3,718,450	12/6/2019	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer,switchgear, and related equipment needed to serve additional feeders out of this substation.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Pendale is part of the East El Paso Service Territory and is referred to as Pendale in the transformer loading tables and in the East El Paso Service Territory summary in the attachment pages 44 through 45.	
Blanket	DT063	TEXAS SUBSTATION BETTERMENT BLANKET	3,674,064	Multi-Year	Blanket project to maintain or improve distribution system reliability. Reactive and proactive improvements of distribution substation equipment and infrastructure. This includes but is not limited to grounding grid, relay equipment, circuit breakers, switches, battery chargers, bushings, control house buildings, and security fencing.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19 and 13-21 responses.	FMI 02-03 Attachment_01 and 03 are examples of assessments done by the maintenance crews for work completed under this blanket project.
Individual	DT389	SUNSET NORTH AUTO TRANSFORMER REPLACEMENT	3,656,864	Multi-Year	Project needed to maintain reliability in the downtown/medical district area. Involved the replacement of Sunset North T1 and T3 transformers and related equipment that were at the end of their useful lives.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.		FMI 02-03 Attachment_02 and FM 02-03 Attachment_04 requesting replacement by the Substation maintenance supervisor.
Blanket	DT372	POLE REPLACEMENT & IMPROVEMENTS TEXAS	3,451,028	Multi-Year	A blanket project used to maintain or improve distribution system reliability. Replacement/Reinforcement of EPE owned poles and other equipment based on inspections.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19 and 13-21 responses.	
Individual	DT291	GLOBAL REACH T2 AND SWITCHGEAR	3,439,982	8/2/2018	Project needed to serve load growth in east El Paso and maintain reliability. Included the addition of a transformer,switchgear, and related equipment needed to serve additional feeders out of this substation.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Global Reach is part of the East El Paso Service Territory and is referred to as Global Reach in the transformer loading tables and in the East El Paso Service Territory summary in the attachment pages 44 through 45.	
Individual	DT194	SUNSET 69KV-4KV TRANSFORMER, REGULATORS, AND FEEDER REPLACEMENTS	3,020,849	Multi-Year	Project needed to maintain system reliability. Involved the replacement of 69kv-4kv Sunset substation switchgear and related equipment due to age and maintenance issues.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Sunset substation is part of the Underground, Downtown, and Central El Paso Service Territory and is referred to as Sunset in the transformer loading tables and in the Underground, Downtown, and Central Service Territory summary in the attachment pages 39 through 41.	

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Transmission Project Type	PROJECT	PROJECT DESCRIPTION	ADJUSTED GROSS ADDITIONS	In Service Date	Project Benefit	R. Clay Doyle Testimony References	Other Docket 52195 RFI Responses	New Attachment References
Individual	DT383	PELLICANO T2 TRANSFORMER ADDITION	2,996,995	3/9/2018	Project needed to serve load growth in far east El Paso and maintain reliability. Included the addition of a transformer,swicthgear, and related equipment needed to serve additional feeders out of this substation.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Pellicano is part of the Far East El Paso Service Territory and is referred to as Pellicano in the transformer loading tables and in the Far East El Paso Service Territory summary in the attachment page 46 through 47.	
Individual	DT184	RIO BOSQUE CAPACITOR BANK ADDITION	2,855,028	5/15/2019	Project needed to provide voltage support and maintain system reliability. Installation of two-stage 15 MVar Capacitor Banks at Rio Bosque distribution substation to stabilize voltage in the far east area of EPE service territory.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6. At the time of this being placed in service, EPE classifies capacitor banks as distribution assets when placed in a substation that has distribution feeders.	Part of a system planning study. STAFF 03-07 Attachment 1, table 5, Attachment 2 table 5.	
Individual	DT218	SUNSET 14KV SWITCHGEAR AND NETWORK FEEDER REPLACEMENTS	2,809,949	5/22/2020	Project needed to maintain system reliability and support load in the downtown area. Replacement of the old 14kV switchgear and the downtown network feeders coming out of the new switchgear up to the first junctions of each feeder.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	STAFF 3-7, Attachment 7 - Confidential Errata provides the distribution system planning process and project needs by service area. Sunset substation is part of the Underground, Downtown, and Central El Paso Service Territory and is referred to as Sunset in the transformer loading tables and in the Underground, Downtown, and Central Service Territory summary in the attachment pages 39 through 41.	
Blanket	DT121	TEXAS CABLE REPLACEMENT PROGRAM BLANKET	2,426,528	Multi-Year	Blanket project used to maintain or improve distribution system reliability. Replacement of obsolete URD cable, pad-mount, submersible transformers, and other UG equipment in areas with high rates of underground cable failures.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP responses for 13-19 and 13-21. Also reference STAFF 3-7, Attachment 7 - Confidential Errata page 10.	
Blanket	DT064	TEXAS LIGHTING BLANKET	2,391,878	Multi-Year	Replacement and installation of El Paso Electric owned area and street lighting infrastructure for municipal and private customers.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.	Reference CEP 13-19 and 13-21 responses.	
Individual	DT416	DISTRIBUTION DUAL VOLTAGE MOBILE TRANSFORMER	2,313,824	Multi-Year	Maintain or improve system reliability. Purchase of a new dual voltage mobile transformer to use as backup for transformer replacements with limited back feed options. Existing fleet of mobile transformers is from the 1950s and are not capable of providing reliable service as they are not adequate to handle all voltages above 4kV.	General reference to Distribution capital project investments page 37 line 15 through page 40 line 6.		

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V. FUNDAMENTAL PLANNING PHILOSOPHY

The fundamental philosophy used in EPE's distribution system planning was to balance reasonable cost with superior service. A customer's electrical service can suffer in several ways such as improper voltage, poor power quality (i.e., excessive voltage sags, swells, and harmonics), frequent interruptions, or long-duration interruptions. Extraordinary events can occur in a large electrical system and affect a customer's service under any given design philosophy. EPE believes that the distribution system should not be a contributing factor to poor customer service, but rather should be designed to meet the customer's needs in a reliable and economic manner. EPE considers many factors in the design of the system. Thermal capacity, voltage constraints, reliability, energy and demand losses, safety, economic operation, and aesthetic concerns were the basic factors considered in this planning criterion.

Capital projects will be proposed for five main reasons: 1) to ensure feeders are not overloaded 2) to ensure that transformers are not overloaded 3) to provide extra capacity for feeders and transformers which can be utilized during contingency switching scenarios 4) for safety considerations and 5) to improve reliability.

Thermal Capacity

Thermal constraints are one of the most important factors in system operation. Exceeding equipment thermal ratings will result in shortening equipment life and may cause catastrophic equipment failure. However, thermal ratings are not easily determined. Conductor ratings vary considerably depending on the ambient temperature and wind velocity. Transformer ratings depend on the ambient temperature and the load profile under which the transformer operates. Voltage regulator ratings depend on load profile, ambient temperature, and regulation range. Cable ratings depend on soil conditions, load profiles for each circuit, and the number and positioning of circuits in the duct bank. Consequently, feeder ampacities rely on unpredictable and dynamic variables. Therefore, for the purpose of this document, ratings were based on stated assumptions. When the impact of the assumptions cannot be accurately quantified, the assumptions may be conservative. When necessary, these ratings may be exceeded if technical decisions based on specific circumstances are evaluated and temporary higher operating levels are warranted. A slight reduction in equipment life may be acceptable if deemed necessary for emergency power restoration.

Voltage Constraints

ANSI C84.1-2011, the recommended guidelines for utilities under normal and emergency conditions, dictates EPE's steady state voltage tolerance. System planning must allow for voltage drop from primary conductors, distribution transformers, and secondary and service conductors to maintain voltage to the customer within the limits specified in the ANSI standard. Planning must consider conductor type and size, feeder lengths, magnitude, nature, and location of loads, method of regulation and regulator settings, and capacitor size and location.

Reliability

Reliability is the most difficult subject to address in the planning process. The EPE philosophy is to employ N-1 contingency in the design of its distribution system. N-1 contingency is defined as the ability to restore power to all customers following the loss of any one major system component. Unfortunately, because reliability improvements are difficult to quantify monetarily, such concerns are sometimes not acted upon due to engineering and construction resource limitations and budget constraints. To date, the postponement of projects justified by reliability improvement considerations has not significantly impacted

EPE's system performance. Reliability statistics show that EPE is consistently among the best in Texas, indicating that substantial system upgrades to improve reliability may not be warranted. Engineers have managed to adequately serve new load each year by evaluating the need for projects and adapting the short-term plan to accommodate budget constraints and resource limitations. However, it must be mentioned that the engineers have often needed to be very creative in shifting various loads in order to restore power during a contingency. As a planning philosophy it is the intention of the Distribution Systems Section to present the most economic method to address this type of reliability concern. Creative load shifting can be valuable in an emergency, but it could also be considered luck. It should not be relied upon as the technique to design to when developing N-1 capability in the distribution system.

Losses

Energy and demand losses impact operating costs and system capacity. Distribution systems built to minimize "up front" capital costs can subsequently result in additional energy costs due to the increased energy losses associated with smaller wire and/or longer feeders. Corresponding power losses decrease system capacity as more kilowatts are required to serve the same load. For example, engineering studies performed by EPE have determined that utilizing 795 AAC (large conductor) for backbone feeders is the most economical choice after energy and demand losses are included. Another consideration that can significantly reduce losses is the application of capacitors for power factor improvement. Optimal sizing and placement of fixed and switched capacitor banks on a distribution feeder in conjunction with a switched capacitor control program can correct the feeder power factor to close to unity under most circumstances. Proper application of capacitors will significantly reduce demand and energy losses by reducing the reactive component of the current needed to serve the load. This virtually eliminates losses due to inductive loads. EPE plans its system to achieve this goal. EPE utilizes a system (RCCS) to perform capacitor switching based on VAR flow at the source of each feeder or time of day.

Aesthetics

Aesthetics have also become more important in recent years. Customers frequently deem overhead construction unsightly and request that service be placed underground. In areas that are presently being served by 13.8 kV or 23.9 kV the cost differential experienced for aesthetic reasons is simply the difference between overhead and underground construction and is often paid by the customer. However, EPE generally avoids serving underground areas from 4 kV systems. This limitation requires that some areas be converted to 13.8 kV or 23.9 kV in order to install underground line extensions to satisfy aesthetic requirements.

Contingency Based Planning

Contingency based planning spans a broad spectrum of operating philosophies. At one extreme, the utility may require enough redundant capacity to accommodate the loss of any one major component (e.g., a substation transformer). At the other extreme, the utility may design just enough capacity to meet the peak loads, providing limited backup capacity during non-peak periods. The first extreme is costly while the second is not adequate. EPE's planning position is in between these two extremes.

The planning philosophy must be realistic in recognizing that yearly incremental capacity increases cannot be achieved to exactly meet yearly increases in system loads. In other words, an upgrade to a feeder or substation must be made in increments that will initially exceed the immediate need, then exactly match the load at some time in the future, and finally fall short as the load subsequently grows further. These

"lumpy" additions are often the most economic because manufacturers will standardize their products such as transformers and regulators on certain sizes. Non-standard sizes specified to meet load growth will almost always be more expensive. Avoiding the "lumpy" additions by purchasing custom-sized equipment is usually not the economic choice.

EPE's contingency planning criteria will utilize the distribution system in the surrounding area to provide backup capacity for restoration of power. The surrounding area is defined as feeders and/or substations that can be directly or indirectly utilized to sectionalize and reconfigure the system for restoring power to as many customers as possible. It may be necessary to utilize switching procedures involving multiple numbers of substations in order to cascade load from adjacent feeders and substations to create the needed capacity in the immediate vicinity. EPE recognizes that investment avoided by leaning on available capacity adjacent substations must be balanced by the additional outage duration due to more complicated switching procedures and more field personnel to do the switching.

The system plan will call for the timing of upgrades based on load projections that indicate the surrounding system can no longer support an N-1 contingency. When budget constraints or limited engineering and construction resources preclude implementation of these upgrades, portable substations will be used as a temporary remedy for this problem until the upgrade or a suitable alternative can be achieved. Projected upgrades will be evaluated yearly to determine if the project is still warranted and if adjustments to the timing of the project can be made. Multiple outages of equipment due to unusual events such as ice storms or wind damage can quickly subscribe all portable substations to the field. At this point, restoration times will be long because the only solution is to repair or rebuild the damage while customers remain out of service.

Portions of the system where the load is greater than 2,000 kVA will require capacity in the surrounding area for service restoration. If the existing system has the capacity, then areas where the load is less than 2,000 kVA may be utilized for contingency planning. These load criteria will also apply to 4 kV substations.

Peak Utilization Factor Planning

Along with Contingency Based Planning, EPE implements a Peak Utilization Factor for planning the distribution feeders and distribution substation power transformer installations. For both the feeders and power transformers, the factor is defined as the peak load of the feeder or transformer divided by the maximum load rating for the feeder or transformer, respectively. The system plan will call for the scheduling of upgrades when this value is 70% or greater.

As a distribution feeder reaches 80%, corrective measures will be implemented to reduce the factor. One corrective measure will be to cascade load to adjacent feeders and substations if surrounding capacity is available. Another corrective measure will be to increase the feeder's capacity, if possible. The feeder will be analyzed to determine the weak link and possible component upgrades. Upgrades will include the following: increasing the size of any jumpers on the feeder, increasing the size of the voltage regulators, increasing the size of the overhead conductor, increasing the size and position in the duct bank of the getaway cables, and upgrading the sectionalizing switches and disconnects on the feeder.

Similar to distribution feeders, as a distribution substation power transformer reaches 80%, corrective measures will be implemented to reduce the factor. One corrective measure will be to cascade load to adjacent substation transformers, if capacity is available. Another corrective measure will be to replace the existing transformer with a larger unit. The more costly corrective measures will be the installation of a

new transformer in the existing substation, or the installation of a new transformer at a new substation site.

Other Voltage Considerations

ANSI C84.1-2011 identifies two voltage ranges (Range A and Range B) for service voltage. Range A defines the normal operating range. Range B defines the extended range that is tolerable for the short periods of time during which the utility is operating under abnormal conditions. The service voltage ranges are 95% to 105% of nominal for Range A and 92% to 106% of nominal for Range B. A narrower range will be utilized in the planning process for the primary system voltage to account for the distribution transformer, secondary, and service voltage drops. A cumulative 3% will be assumed for the combination of these voltage drops. Another 1% is added as a cushion to account for unanticipated load increases and calculation error. Therefore, for system planning purposes the primary system voltage ranges for Range A and Range B will be 99% to 104% and 96% to 106% respectively.

EPE aims for a primary system voltage unbalance limit of 3%. ANSI C84.1-2011 notes that most electrical motors should be able to withstand a 3% unbalance. To alleviate this unbalance we may apply single-phase load balance between phases, the addition of single-phase voltage regulators, or the incorporation of capacitors. The equation used for voltage unbalance is defined in this standard as:

% Voltage Unbalance = 100 x (max. phase deviation from the average V)/(Average Voltage)

Primary system voltage flicker and harmonics are rarely considered as system planning variables. These issues are dealt with on a case by case basis. When voltage flicker is considered, EPE prefers a 2% limit on primary voltage sags.

Capacity Ratings

In general, the capacity variable in Distribution Planning is twofold. The system must be designed to carry the present load plus expected load growth over the period under study and the system must be designed to have the capability to carry additional load switched to it from the surrounding area during emergency conditions. Capacity ratings of the distribution feeders are based on the thermal limitations of the following components:

1. Substation power transformers.
2. Breaker jumpers, connectors, feeder riser jumper, and overhead conductor.
3. Feeder getaway cable duct banks.
4. Voltage regulators.
5. Sectionalizing switches and disconnects.

Substation Power Transformers

Dynamic ratings can be applied to transformers per ANSI C57 transformer load guidelines. For simplicity, the maximum cooling stage, 55°C rise, nameplate rating will be utilized for planning purposes. For operational purposes the emergency static capacity rating will be the top name plate rating. Higher dynamic ratings can be utilized with engineering approvals if the load profile and ambient conditions permits. Distribution Systems is recommending that all new transformers installed be 30/40/50 MVA units with a base impedance of 11% or greater, ensuring that the fault current does not exceed an equipment rating of 12.5 kA, which is standard for many of the medium voltage components. New substations should also accommodate two 50MVA transformers and six feeders for the 13.8kV systems and four feeders for the 24kV systems.

Breaker Jumpers, Feeder Riser Jumpers, and Overhead Conductors

Wires and conductors utilized as jumpers or conductors for feeder mains shall be rated at a minimum of 400 amps continuous current carrying capacity and a minimum of 600 amps emergency current capacity. Most breakers in substations have jumpers that are rated to match the breaker capacity. There may be cases where the jumpers are undersized and these will need to be field verified. All jumpers will be rated to carry the maximum anticipated load. The parameters used to define conductor ampacities are as follows:

Wind speed – 2 feet/second
Altitude – 4,000 feet
Ambient temperature – 40 degrees Celsius
Latitude – 32 degrees North

Feeder Getaway Cable

Duct bank configurations will be designed to accommodate a minimum simultaneous continuous ampacity rating of 400 amps with any single circuit carrying 600 amps. Cables used for new substation getaways shall utilize 750 CU SH power cable at a minimum. Proximity effects, soil thermal resistivity, and load factors shall be utilized on a case by case basis to determine cable ampacities.

Voltage Regulators

Single-phase voltage regulators rated for a minimum continuous capacity of 400 amps and a capacity of at least 600 amps at raise 8 tap and lower 8 tap position shall be used for voltage regulation on all feeders.

Sectionalizing Switches and Disconnects

Feeder mains shall use 600 amp rated solid blade disconnects or 600 amp load break gang-operated pole-top switches at the getaway riser. Switches utilized on the main feeder shall be 600 amp gang-operated load break pole-top switches. EPE has historically used disconnects at the getaway riser. Pole-top switches on the feeder provide the opportunity for quick field switching from the ground by any qualified person.

Contingencies

The system design will incorporate a parameter where no more than 3,000 customers will be affected by a single distribution system component failure during normal operations. A typical feeder will not serve more than 3,000 customers.

This document protects for N-1 contingency at peak load utilizing existing system capacity. Existing system capacity can be derived from the same substation, tie feeder from the same substation, capacity from adjacent substations, or any combination of the three. In some cases, offloading adjacent substations or feeders to other sources may be necessary to provide adequate capacity. A contingency consists of the loss of any single transmission line, substation transformer, feeder getaway cable, or portion of a feeder affecting more than 500 customers or 2,500 kVA of load. Planning the distribution system such that it can recover from an N-1 contingency using existing system capacity will limit the duration of outages that customers will experience. Knowing that sufficient capacity exists to pick up the load following a contingency will allow restoration to begin without an undue delay for load analysis.

4 kV Distribution Planning

The EPE system has a sizable number of 23.9 kV/4 kV and 13.8 kV/4 kV substations supplying an average of 1,500 kVA to 2,500 kVA of mostly residential loads. These 4 kV substations are spread throughout the service territory in mostly older neighborhoods. Many of these substations are surrounded by residential subdivisions and in many cases operating clearances and safety issues may exist. In addition to the safety issues, the replacement parts for these substations are no longer available, and as a result, EPE substation maintenance crews are finding it impossible to repair or replace worn or damaged equipment in these substations. Recent studies performed regarding the grounding systems in these substations have introduced additional challenges in converting these substations resulting in increased costs and construction delays. The EPE Distribution Systems Section has developed and implemented a design to replace the old 4kV transformers, which have exposed primary and secondary terminations, with padmount transformers that have equivalent load supplying capacity. Padmounted equipment used for these installations has "dead front" terminators housed in a metal enclosure. This type of installation substantially reduces the risk of the public contacting energized parts. Protective equipment from the existing substations is removed and replaced by a recloser with a programmable logic controller. Conversion of adjacent stations to the newer padmount configuration is ongoing because the new and the old transformers do not phase and the substations cannot be tied together in switching operations. Converting two adjacent 4 kV substations ensures one of the substations can be used to back up the other, thereby creating a level of redundancy. In cases where it is not feasible to convert to a 4 kV padmount substation, 4 kV feeders are being converted to either 23.9 kV or 13.8 kV distributions when feasible.

Cable Replacement Program

The cable replacement program, which was established in 2000, proactively tracks cable failures throughout EPE's underground residential distribution system in an attempt to identify pending failures and replace damaged cable before complete failure occurs. Risers with the most recorded failures over the past 12 months are first to have their cable replaced. When the 12-month riser failures equal those for multiple risers, the number of cumulative failures takes priority. Cable served from a 10% Worst Performing Feeder (WPF) is also taken into consideration. EPE underground crews as well as contractors replace cable year round except for the storm season months of May-August. $350,000 is budgeted each year for the plan period.

VI. LOAD FORECASTING

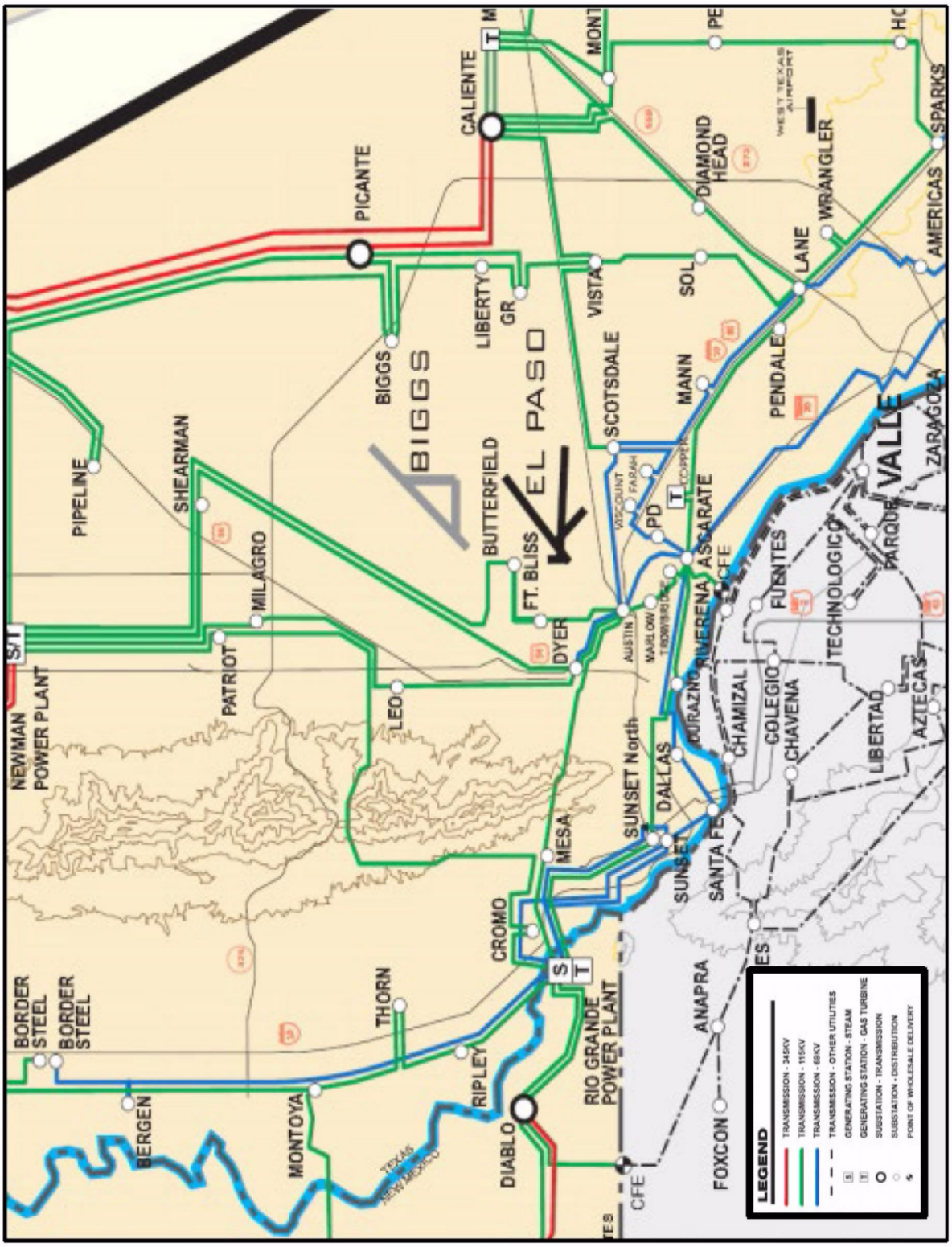
Load forecasting is used to determine the amount of power EPE will be expected to serve. In areas where load already exists, facility improvements primarily consist of re-conductoring and rebuilding distribution lines or enhancing system capacity. New areas of development generally dictate the installation of new facilities and equipment.

New customer load growth and increased demand from existing customers were evaluated for various geographic locations within EPE's service territory. Geographic locations were delineated as West El Paso/Santa Teresa/Anthony, NM; Downtown Network and Central El Paso; Northeast El Paso; East El Paso; Far East El Paso; and the Las Cruces Service Territory.

As yearly spatial load forecasts were developed using the New Mexico and Texas Load Reports, new growth amounts were served by area feeders or transferred to adjacent semi-loaded feeders when possible. Trending methods such as multiple regression were used to forecast future load growth. Forecasting methods were further enhanced by incorporating extraordinary or large spot loads that are expected to materialize. Some examples of special growth are the proposed residential, commercial, and industrial development in the Northeast El Paso area or the projected Verde Reality Group development in the Sunland Park and Santa Teresa regions.

Distribution Systems will be reevaluating its load forecast to accelerate, delay, or cancel projects, and/or propose new ones.

The following spreadsheets show the load projection process.


EL PASO
BIGGS
NEWMAN POWER PLANT
RIO GRANDE POWER PLANT
PICANTE
CALIENTE
DIAMOND HEAD
WRANGLER
AMERICAS
SPARKS
LIBERTY
VISTA
SOL
LANE
PENDALE
MANN
SCOTSDALE
BIGGS
PIPELINE
SHEARMAN
MILAGRO
PATRIOT
BUTTERFIELD
FT. BLISS
DYER
LED
THORN
CROMO
MESA
SUNSET North
SUNSET
DALLAS
SANTA FE
ASCARATE
RIVERENA
FUENTES
CHAMIZAL
COLEGIO
CHAVENA
TECHNOLOGICO
PARQUE
VALLE
ZARAGOZA
LIBERTAD
AZTECAS
ANAPRA
FOXCON
CFE
BERGEN
MONTOYA
RIPLEY
DIABLO
BORDER STEEL
BORDER STEEL
TEXAS
NEW MEXICO
LEGEND
TRANSMISSION - 345KV
TRANSMISSION - 115KV
TRANSMISSION - 69KV
TRANSMISSION - OTHER UTILITIES
GENERATING STATION - STEAM
GENERATING STATION - GAS TURBINE
SUBSTATION - TRANSMISSION
SUBSTATION - DISTRIBUTION
POINT OF WHOLESALE DELIVERY

SOAH DOCKET NO. 473-21-2606
DOCKET NO. 52195

APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	**§ § §**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

CONFIDENTIALITY STATEMENT UNDER SECTION 4 OF THE PROTECTIVE ORDER

The undersigned attorney for El Paso Electric Company ("EPE") submits this statement under the section 4 of the Protective Order entered in this case. Materials provided in the redacted portions of the Rebuttal Testimony of R. Clay Doyle and his Exhibits RCD-1R and RCD-2R are exempt from public disclosure pursuant to sections 552.101 and 552.110 of the Public Information Act[1] and section 418.181 of the Texas Government Code.

The information at issue is also provided in EPE's responses to City of El Paso's 5th RFI to EPE and as explained in the confidentiality statement provided with those responses, some of the information contained in the documents identified above concern business operations that are commercially sensitive and not otherwise readily available to the public and that if released could cause substantial competitive harm to EPE or the owner of the confidential information. Additionally, some of the information in the documents identified above are subject to confidentiality provisions that require EPE to prevent the public release of the information contained therein. Finally, other information in the documents identified above concern highly sensitive, confidential critical infrastructure that EPE is required to keep confidential and the public release of which could jeopardize the security of EPE's system.

The undersigned counsel for EPE has reviewed the information described above sufficiently to state in good faith that the information is exempt from disclosure under the Public Information Act and Texas Government Code and merits the confidential protected materials designation given to it.

[1] Tex. Gov't Code Ann. § 552.110.

Respectfully submitted,

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ATTORNEYS FOR EL PASO ELECTRIC COMPANY

CERTIFICATE OF SERVICE

I certify that a true and correct copy of this document was served by email on all parties of record on November 19, 2021.

Laura B. Kennedy
Laura B. Kennedy

The following files are not convertible:

Exhibit RCD-4R.xlsx
Exhibit RCD-5R.xlsx

Please see the ZIP file for this Filing on the PUC Interchange in order to access these files.

Contact centralrecords@puc.texas.gov if you have any questions.