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IMPARTIAL HEARING EXAMINER

# AUSTIN ENERGY'S SECOND SUPPLEMENTAL RESPONSE TO NXP SEMICONDUCTORS' THIRD REQUEST FOR INFORMATION

Austin Energy files this Second Supplemental Response to NXP Semiconductors' ("NXP") Third Request for Information ("RFI") submitted on May 26, 2022.

Respectfully submitted,

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ATTORNEYS FOR THE CITY OF AUSTIN D/B/A AUSTIN ENERGY

# Austin Energy's Second Supplemental Response to NXP's Third RFI

NXP 3-12: Please provide a copy of AE's most recent long-term distribution system plan.

ANSWER: See Supplemental Attachment NXP 3-12.

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# BEE CREEK BC05 & BC08 RECONDUCTOR---C325

#### **DESCRIPTION:**

Reconductor approximately 850 linear feet of existing 336 ACSR conductor on distribution feeders BC05 and BC08 out of the Bee Creek substation with 795 AL along Redbud Trail (pole #263160 to pole #262927).

### JUSTIFICATION:

This project will increase the tie line capacity between feeders BC05 and BC08 out of the Bee Creek substation. This will improve switching flexibility during contingencies. Several distribution poles along Redbud Trail are particularly vulnerable to vehicle risks along curved sections of the road.

#### **NEED DATE:**

May 2025

#### IMPACT OF DELAY:

Delaying this project will restrict the ability to support new load developments reliably and efficiently and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 940 customers on feeder BC05 and 696 customers on feeder BC08.

# **BUSINESS FACTOR:**

# **BRODIE LANE BL02 RECONDUCTOR—C467**

#### **DESCRIPTION:**

Reconductor approximately 1,200 circuit feet from pole #204568 to pole #204661 on distribution feeder BL02 out of the Brodie Lane substation with 795 AL conductor.

### JUSTIFICATION:

This project will improve switching flexibility between BL02 and the surrounding feeders BL07, BL08 and SL02.

#### **NEED DATE:**

May 2025

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 2,905 customers on feeder BL02.

### **BUSINESS FACTOR:**

## **BRODIE LANE NEW FEEDER BL03—C318**

#### **DESCRIPTION:**

Develop a new distribution feeder BL03 out of the Brodie Lane substation.

This will involve building approximately 13,775 linear feet of 795 AL (double circuit construction) from the substation north along Brodie Lane to its intersection with Ben Garza Lane.

# JUSTIFICATION:

This project is needed due to insufficient capacity on the existing feeder BL01 out of the Brodie Lane substation for serving the Ben Garza office complex and other multi-family developments located on Ben Garza Lane. As loads continue to develop toward the north end of the BL01 feeder, this new feeder will also provide load relief for the existing Brodie Lane feeders and will improve switching flexibility.

### **NEED DATE:**

May 2023

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to reliably and efficiently support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations.

### **BUSINESS FACTOR:**

# **BURLESON BU02 RECONDUCTOR—C465**

#### **DESCRIPTION:**

Reconductor approximately 2,800 linear feet of existing 336 ACSR conductor on distribution feeder BU02 out of the Burleson substation with 795 AL conductor from pole #218026 to pole #214814.

### **JUSTIFICATION:**

This project with strengthen the feeder tie with the Burleson substation feeder BU07 and improve switching flexibility between the BU02 and BU07 feeders.

#### **NEED DATE:**

May 2023

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 210 customers on feeder BU02 including two critical customers.

#### **BUSINESS FACTOR:**

# **BURLESON BU05 & BU07 FEEDER TIE—C466**

### **DESCRIPTION:**

Reconductor approximately 1,950 linear feet of existing 336 ACSR conductor on distribution feeder BU05 out of the Burleson substation with 795 AL conductor from pole #218190 to pole #218353. Reconductor approximately 200 linear feet from pole #218353 to pole #218379 with 795 AL conductor on the BU07 feeder.

# JUSTIFICATION:

This project would strengthen the feeder tie between the Burleson substation feeders BU05 and BU07 and improve switching flexibility in the area.

#### **NEED DATE:**

May 2024

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 51 customers on feeder BU05 and 396 customers on BU07 including one critical customer.

### **BUSINESS FACTOR:**

# **CAPACITORS FOR REACTIVE STANDARDS---2513**

### **DESCRIPTION:**

This program provides multi-year funding for the installation of the new capacitor banks on Austin Energy distribution feeders as necessary to meet reactive standards mandated by ERCOT.

#### JUSTIFICATION:

ERCOT has approved a phased approach for improving the power factor at all substations. Substations are required to have a minimum power factor of 0.97 on the secondary side of unit transformers. Engineering studies will continue to identify new capacitor banks that are required system-wide to meet power factor requirements, minimize losses, and improve voltage profiles.

### **NEED DATE:**

Capacitor bank additions will be coordinated with construction schedules and regularly scheduled maintenance outages.

### **IMPACT OF DELAY:**

Delaying this project could result in Austin Energy not complying with ERCOT power factor requirements which could result in fines or sanctions.

# **BUSINESS FACTOR:**

# **CARDINAL LANE CL05 RECONDUCTOR—C082**

#### **DESCRIPTION:**

Reconductor approximately 4,000 linear feet of existing 4/0 ACSR conductor and approximately 1,600 linear feet of existing 336 ACSR conductor on distribution feeder CL05 out of the Cardinal Lane substation with 795 AL along South Lamar Boulevard from just north of Bluff Street to West Oltorf Street.

### JUSTIFICATION:

This project will increase switching flexibility during contingency conditions and will rehabilitate existing overhead facilities. Currently feeder CL05 out of the Cardinal Lane substation provides a tie to back-up feeder SP12 out of the Seaholm substation. However, under contingency, feeder CL05 can only pick up a minimal amount of the feeder SP12 load because the overhead infrastructure is comprised mainly of 4/0 ACSR conductor.

### **NEED DATE:**

May 2022

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 5,391 customers on feeder CL05 and 2,100 customers on feeder SP12. Critical loads in this area include the City Traffic Signal Dispatch Center and Fire Station # 32.

#### **BUSINESS FACTOR:**

#### COMMONS FORD CF03 & CF05 RECONDUCTOR---C327

#### **DESCRIPTION:**

Reconductor approximately 250 linear feet of 336 ACSR conductor on distribution feeders CF03 and CF05 out of the Commons Ford substation with 795 AL along FM 2244 (pole #270076 to pole #269698). Reconductor approximately 1,170 linear feet of 336 ACSR to 795 AL on the back property lines along Canon Wren Drive (pole #269698 to pole #270595).

# JUSTIFICATION:

This reconductor project will improve the switching options between the CF03 and CF05 feeders out of the Commons Ford substation by eliminating the limitation imposed by the existing 336 ACSR conductor. Currently, customers on the CF05 feeder are at risk of experiencing extended outages during contingencies.

#### **NEED DATE:**

May 2024

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to reliably and efficiently support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 462 customers on the CF03 feeder and 1,027 customers on the CF05 feeder.

### **BUSINESS FACTOR:**

#### COMMONS FORD CF04 & CF07 FEEDER TIE—C070

#### **DESCRIPTION:**

Develop a new feeder tie line between distribution feeders CF04 and CF07 out of the Commons Ford substation by building approximately 5,500 linear feet of 795 AL along Cuernavaca Drive and River Hills Road.

#### JUSTIFICATION:

The service area of feeder CF04 out of the Commons Ford substation extends to the south side of Lake Austin. Only one river crossing, on feeder JE02 out of the Jett substation, has been established into this area. Due to the size of the load and the distance from the Jett substation, customers in this area may be subject to unacceptably low voltages upon the loss of feeder CF04 during peak conditions. Depending upon the specific outage that may occur, customers can potentially be without service for an extended period of time. To improve electric service reliability to the customers served by feeder CF04, this new feeder tie line is recommended.

#### **NEED DATE:**

May 2024

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to reliably and efficiently support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 2,093 customers on feeder CF04.

### **BUSINESS FACTOR:**

# **DISTRIBUTION BACKUP TO 15 KV NETWORK CIRCUITS—C088**

#### **DESCRIPTION:**

Construct the necessary infrastructure to extend back-up capability to the 15 kV downtown network P-Circuit feeders from the existing local overhead distribution system.

This will involve the construction of overhead and underground feeder extensions, the installation of normally open switches at the back-up tie points, and the installation of risers to allow overhead taps to be tied into the underground network manholes.

### JUSTIFICATION:

Part of the Austin Energy downtown network area is supported by fourteen 15 kV P-Circuits. These network circuits are supplied by two 138/12.47 kV 50 MVA unit transformers at the Seaholm substation.

This project will improve system reliability by providing badly needed emergency ties to the network circuits at key locations from the neighboring overhead distribution system that encompasses the downtown area.

#### **NEED DATE:**

June 2027

# **IMPACT OF DELAY:**

Delaying this project places customers served by the downtown network at risk of an extended outage for a single contingency due to limited switching flexibility.

### **BUSINESS FACTOR:**

## EAST VILLAGE NEW FEEDERS EV01-02-03—C838

#### **DESCRIPTION:**

New East Village Substation Feeder 1 (EV01) will need to be installed from the substation switchgear circuit breaker cubicle 1 to an overhead riser on the south side of the East Village Substation. Install approximately 1000 linear ft of 3-phase 1000 MCM existing duct bank.

New East Village Substation Feeder 2 (EV02) will need to be installed from the substation switchgear circuit breaker cubicle 2 to an overhead riser on the North West side of the East Village Substation. Install approximately 500 linear ft of 3-phase 1000 MCM in existing substation duct bank. Install approximately 300 linear ft of 3-phase 1000 MCM in underground bore under Howard Lane.

New East Village Substation Feeder 3 (EV03) will need to be installed from the substation switchgear circuit breaker cubicle 3 to an overhead riser on the North West side of the East Village Substation and routed overhead to Howard Lane. Install approximately 500 linear ft of 3-phase 1000 MCM in existing duct bank. Install approximately 2400 linear ft of 795 3-Phase ACSR from substation getaway riser to Howard Ln. Install approximately 300 linear ft of 3-phase 1000 MCM in underground bore under Howard Lane.

#### JUSTIFICATION:

Feeder EV01 will serve customer load on the South and East side of East Village Substation. This feeder is required to serve load to the new East Village Development directly to the south of the East Village Substation. This feeder will transfer some customer load from existing Feeder DE24 to new Feeder EV01.

Feeder EV02 will serve customer load on the North and North West side of East Village Substation. This project is required to serve load to the new East Village Subdivision directly to the North of the East Village Substation. This project will transfer some customer load from existing Feeder DE24 to new Feeder EV02.

Feeder EV03 will serve customer load on the North and North East side of East Village Substation. This project will transfer some customer load from existing Feeder DE24 to new Feeder EV03.

These projects will add capacity, improve reliability, and enhance switching flexibility in North East Austin.

#### **NEED DATE:**

September 2023

#### **IMPACT OF DELAY:**

A delay to this project will prevent AE from having capacity to serve customers in the North East Austin area of the service territory. This will create feeder overloading and voltage drop problems on adjacent feeders DE24, TR02, and SK05 which could result in decreased reliability, service interruptions, and switching limitations.

# **BUSINESS FACTOR:**

# FISKVILLE - SPRINKLE FV05 & SK01 FEEDER TIE---C098

#### **DESCRIPTION:**

Develop a new feeder tie line between distribution feeder FV05 out of the Fiskville substation and distribution feeder SK01 out of the Sprinkle substation by building approximately 3,800 linear feet of 795 AL from the intersection of Dessau Road and Childress Drive along property lines to near Sprinkle Road.

#### JUSTIFICATION:

A new tie line between feeder FV05 out of the Fiskville substation and feeder SK01 out of the Sprinkle substation is necessary to accommodate load development in the Pioneer Hill subdivision and other load growth in the area to the south of this new subdivision. This tie will improve reliability by ensuring adequate feeder back-up capability and switching flexibility.

#### **NEED DATE:**

May 2022

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to reliably and efficiently support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. New loads in this area include the Pioneer Hill subdivision and 695 single-family, multi-family, commercial, and light industrial lots.

### **BUSINESS FACTOR:**

## **FOUR POINTS DUCT BANK---C087**

#### **DESCRIPTION:**

Replace the existing pull-boxes along Four Points Drive between River Place Road and FM 620 with 6'x12' manholes and install approximately 4,100 linear feet of 1000 MCM power cable in new duct bank.

### JUSTIFICATION:

The existing 250 MCM power cable along Four Points Drive on feeder RP06 out of the Riverplace substation does not provide the capacity needed for this area. New developments cannot be reliably served in this area without risking the overloading of the existing power cable.

Replacing the pull-boxes with manholes and installing new duct bank and 1000 MCM power cable will eliminate the loading problems in this area. This upgrade will also create strong feeder ties between the Riverplace feeders which will provide additional switching flexibility. Switching is limited in this area since existing feeders are located near the edge of the Austin Energy service territory which limits the available ties with neighboring substations.

# **NEED DATE:**

May 2022

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. New loads in this area include the Four Points Center office building, Four Points Center apartments (341 multifamily units), and The Preserve at Four Points (148 condominiums).

### **BUSINESS FACTOR:**

## **HARRIS NEW DISTRIBUTION FEEDERS HA01 & HA02—C083**

#### **DESCRIPTION:**

Develop two new distribution feeders (HA01 and HA02) out of the Harris substation.

Establish feeder HA01 by installing 1000 MCM power cable in duct bank from the substation to a new riser on the north side of East Dean Keeton Street. Reconductor approximately 650 linear feet of existing 1/0 ACSR conductor with 795 AL east along East Dean Keeton Street from the riser to Medical Arts Street.

Establish feeder HA02 by installing 1000 MCM power cable in duct bank from the substation to a new riser on the north side of East Dean Keeton Street. Build approximately 530 linear feet of 795 AL west along East Dean Keeton Street to Harris Park Avenue, then north along Harris Park Avenue to the alley south of Elmwood Place, then along the alley to the existing distribution line. Reconductor approximately 860 linear feet of existing 1/0 ACSR conductor with 795 AL west along the alley south of Elmwood to San Jacinto Boulevard, then north along San Jacinto Boulevard to East 30<sup>th</sup> Street.

### JUSTIFICATION:

This project is needed to provide contingency support to both the Fiesta substation and the Central Austin substation. Establishment of the Harris substation and associated distribution circuits will enable Austin Energy to reestablish service to St. David's Hospital from two substations. Additional capacity is also needed in the area to serve new high density commercial, office, and residential loads being developed in the former Concordia site.

#### **NEED DATE:**

June 2028

#### IMPACT OF DELAY:

Delaying this project will restrict the ability to reliably and efficiently support new load developments and could also create an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations.

# **BUSINESS FACTOR:**

## KINGSBERY KB01 RECONDUCTOR PHASE 2---C647

#### **DESCRIPTION:**

Upgrade distribution feeder KB01 out of the Kingsbery substation by reconductoring approximately 4,200 linear feet of existing 336 ACSR conductor with 795 AL from switch A-4430 to switch A-2556 on the northwest corner of East 51st Street and Overbrook Drive. Reconductor approximately 3,348 linear feet of existing 1/0 ACSR conductor with 795 AL inside the Mueller project from Manor Road to Berkman Drive.

### JUSTIFICATION:

This circuit will be used as the alternate feeder source to the Robert Mueller Energy Center as requested by the customer. The primary source to this load is now provided by feeder MU02 out of the Mueller substation. Should the load on the normal feeder grow to the anticipated 10.8 MVA, the existing alternate feed will not be able to carry the load under contingency conditions. This project is essential to make this feeder capable of supporting the anticipated Mueller plant load under contingency conditions.

#### **NEED DATE:**

June 2026

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and could also create an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations.

### **BUSINESS FACTOR:**

#### KINGSBERY KB03 & KB06 RECONDUCTOR---C817

#### **DESCRIPTION:**

Upgrade the underground cables for the KB03 and KB06 feeders out of the Kingsbery substation.

KB03: Replace the existing 1-1000 MCM cables with approximately 2800 linear feet of 2-500 MCM underground cables from the get-a-ways of the KB-123 unit transformer (KB03 feeder position) to D-1331 (pole #248696). Install an overhead air switch in the normally open position on pole #242619. Close existing switch D-0980.

KB06: Replace the existing 1-1000 MCM cables with approximately 2700 linear feet of 2-500 MCM underground cables from the get-a-ways of the KB-456 unit transformer (KB06 feeder position) to D-1332 (pole #248934).

### JUSTIFICATION:

The peak loads supplied by the KB03 feeder reached 13.6 MW (122% of rating) in the summer of 2021. The peak loads supplied by the KB06 feeder reached 10.8 MW (105% of rating) in the summer of 2021. The peak loads supplied by the Pedernales substation PE03 feeder reached 9.3 MW (104% of rating) in the summer of 2021. The cable upgrades of these feeder routes are essential to providing and maintaining electrical service to the existing and future loads of the Kingsbery and Pedernales substation service areas. If installed, the upgrades should increase the load carrying capacity of the KB03 and KB06 feeders by approximately 50 percent each. The increased capacity will also allow for approximately 55 amps of load relief via switching to the Pedernales PE03 feeder.

#### **NEED DATE:**

May 2023

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to reliably and efficiently support new load developments and could also create an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations. Delaying this project could also impact approximately 9,000 customers on the KB03, KB06 and PE03 feeders. To serve those customers, load would have to be switched to the existing PE07, and Fiesta Fl02 and Fl05 feeders. Capacity on these three feeders is limited due to the dual feed reserve capacity that must be maintained for critical hospital facilities.

# **BUSINESS FACTOR:**

## **KOENIG LANE KL06 RECONDUCTOR---CA06**

#### **DESCRIPTION:**

Upgrade approximately 2200 linear feet of existing 4/0 overhead to 795AA along 56th street from Guadalupe (pole 413308) to Avenue G (pole 282987).

#### JUSTIFICATION:

The KL06 is anticipated to load to 97% of rating by summer peak 2025. It could load to as high as 120% of normal if a large multifamily project is constructed. The establishment of these new feeder routes is essential to providing and maintaining electrical service to the existing and future loads of the Koenig Lane, Central Austin Fiesta and Wheless Lane substation service areas. If installed, the upgrades are anticipated to increase the load carrying capacity of the KL06 feeder by approximately 80 percent. This upgrade will allow the KB06 feeder to operate below 85% of normal rating, and also allow for load relief if needed via switching on the adjacent CA05 feeder and CA-456 unit transformer, the CA02 feeder (the St David's Hospital alternate feed) and CA-123 unit transformer, and the FI05 feeder.

#### **NEED DATE:**

June 2024

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently on this feeder and in the nearby Highland Mall area and could also create an unnecessary risk of service interruptions to existing customers during contingency conditions because of switching limitations. The KB06 feeder could potentially relieve the Central Austin substation CA-123 unit transformer if the Austin State Hospital upgrade project is constructed. The KB06 also ties to the Fiesta substation FI05 feeder which is the alternate dual feed for the Robert Mueller Energy Center, which could require load relief as a possible solution to feeder paralleling issues.

### **BUSINESS FACTOR:**

#### LAKESHORE LS02 & LS06 FEEDER TIE---C924

#### **DESCRIPTION:**

Develop a new feeder tie line between distribution feeders LS02 and LS06 out of the Lakeshore substation by reconductoring approximately 3,500 linear feet of existing 1/0 AL conductor with 795 AL along Toro Canyon Drive from Stone Canyon Drive to Buckman Mountain Road. Build approximately 700 linear feet of 795 AL, and reconductor approximately 2,000 linear feet of existing # 2 AL conductor with 795 AL near Westlake Drive.

### JUSTIFICATION:

This project will increase switching flexibility for feeders LS01, LS02, LS06 out of the Lakeshore substation and feeder BC06 out of the Bee Creek substation. In 2003, double-circuit construction of feeders LS02 and LS04 and a load transfer from feeder NL08 out of the Northland substation to feeder LS04 were completed. However, due to load transfers and circuit reconfigurations within the area, the ability to restore electric service to all customers during contingency has become increasingly difficult. The customers who are susceptible to these contingency outages are in the High Road and Westlake Drive vicinity. By rebuilding existing facilities and extending feeder LS06, switching options are increased and electric service restoration is possible.

### **NEED DATE:**

May 2022

#### IMPACT OF DELAY:

Delaying this project will restrict the ability to support new load developments reliably and efficiently, and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 3,600 customers. Critical loads in this area include the Westlake Drive pump station and reservoir, Lookout Lane pump station and reservoir, Cat Mountain pump station, and the Mount Larson radio tower.

## **BUSINESS FACTOR:**

#### MCANGUS ROAD RECONDUCTOR & FEEDER TIE---C010

#### **DESCRIPTION:**

Reconductor approximately 4,100 linear feet of existing 1/0 ACSR conductor on distribution feeder SR02 out of the Stoney Ridge substation with 795 AL along McAngus Road just south of Elroy Road. Build approximately 4,900 linear feet of 795 AL from McAngus Road to FM 812.

### JUSTIFICATION:

This project will tie in with the planned project upgrade along FM 812 to develop a feeder tie on the southern end of the Formula One site between the existing distribution and the feeder from the Elroy substation that will be serving the racetrack. This tie will help provide contingency switching in the event of an outage on the feeders serving the tract or during maintenance of the unit transformer at the Elroy substation. This will also establish the initial infrastructure needed to extend a future feeder from Stoney Ridge substation which may be needed to support load growth in this area.

#### **NEED DATE:**

May 2026

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 1,055 customers on feeder SR02.

### **BUSINESS FACTOR:**

# PATTON LANE PL11 RECONDUCTOR---C167

## **DESCRIPTION:**

Reconductor approximately 1,000 linear feet of existing 1/0 ACSR conductor on distribution feeder PL11 out of the Patton Lane substation with 795 AL on the back-property lines along Red Willow Drive (pole #231760 to pole #232456).

### JUSTIFICATION:

The area served by feeder PL11 out of the Patton Lane substation is densely developed. Part of the area is supplied by 1/0 ACSR conductor which is near its loading limit of 230 amps. The final phase of The Enclave at Covered Bridge will be supplied by this feeder soon. This additional load cannot be supported by the existing 1/0 ACSR conductor.

Feeder PL11 is currently being upgraded to 795 AL from Highway 71 to pole #231760. Extending the conductor upgrade further to the west will allow this feeder to serve future loads in the area. An additional consideration is that feeder PL11 is located near the edge of the Austin Energy service territory with limited switching flexibility. This system improvement will strengthen the feeder main in preparation for a future tie to the west.

### **NEED DATE:**

May 2024

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 2,344 customers on feeder PL11. Critical loads in this area include two locations for the West Travis County Public Agency and a City of Austin pumping station.

#### **BUSINESS FACTOR:**

## PEDERNALES - FIESTA PE07 & FI02 TIE & RECONDUCTOR---C816

#### **DESCRIPTION:**

Upgrade approximately 4600 linear feet of existing 4/0 CU conductors on distribution feeders PE07 out of the Pedernales substation and Fl02 out of the Fiesta substation with 795 AA along Chicon St from pole #250085 (existing air switch A-1305) to pole #258924.

Reconductor approximately 2700 linear feet of existing 4/0 CU conductors with 795 AA from pole #261844 across Interstate 35 to pole #258924.

### JUSTIFICATION:

This project will increase the tie line capacity between feeders PE07 and Fl02 out of the Pedernales and Fiesta substations, respectively. This will improve switching flexibility during contingencies.

#### **NEED DATE:**

June 2025

#### IMPACT OF DELAY:

Delaying this project could restrict the ability to restore service interruptions to customers (including the St. David's Hospital) during contingency conditions because of switching limitations. Delaying this project could also impact approximately 2,500 customers on the PE07 feeder and approximately 1770 customers on the FI02 feeder.

# **BUSINESS FACTOR:**

## PEDERNALES NEW FEEDER PE08---C323

#### **DESCRIPTION:**

Develop a new distribution feeder PE08 out of the Pedernales substation.

This will involve building approximately 7,600 linear feet of 795 AL from the Pedernales substation to one of the proposed Vista switches which are to be installed near the northeast corner of 4<sup>th</sup> Street and Attayac Street as part of the Plaza Saltillo Project.

#### JUSTIFICATION:

The existing PE-5678 unit transformer at the Pedernales substation is scheduled to be upgraded from 30 MVA to 40 MVA in 2021. This new unit transformer capacity will support the development of a new distribution feeder PE08 to serve the Plaza Saltillo project. This new feeder will pick up load from the existing PE05 (or SP02) and PE01 feeders.

The development of this new feeder out of the Pedernales substation is needed to serve the growing loads in the area east of Interstate 35 and north of Lady Bird Lake. The redevelopment of the area will continue to place a strain on the system infrastructure for the foreseeable future. Voltage issues and limitations on switching have a high probability of worsening as load in the area increases. In addition, loss of any feeder serving the area would result in customers being out of service for an extended period of time. This project will provide additional capacity, improve the reliability, and will enhance switching flexibility in the area.

#### **NEED DATE:**

May 2022

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. The initial development phases of the new Plaza Saltillo project prior to 2020 can be supplied by the existing PE-5678 unit transformer at the Pedernales substation; however, this unit transformer will overload if securing additional unit transformer capacity and developing the new feeder is delayed.

#### **BUSINESS FACTOR:**

## PEDERNALES PE01 RECONDUCTOR---C645

### **DESCRIPTION:**

Upgrade underground cables and reconductor the overhead backbone conductors for the PE01 feeder out of the Pedernales substation. Install approximately 500 linear feet of new 9-5" conduit duct banks from the PE-1234 unit transformer to existing Manhole MH#23 inside the Pedernales substation. Install approximately 500 linear feet of 2-500 MCM underground cables from get-a-ways from the PE-1234 unit transformer (PE01 feeder position) to MH 23. Install approximately 200 linear feet of 2-500 MCM underground cables from MH 23 to existing switch D-0939 (pole 238068). Upgrade approximately 1900 linear feet of existing 336 ASCR overhead conductors to 795 AA from pole 238068 westward to Chicon Street (pole 239154). Upgrade approximately 2250 linear feet of existing 336 ASCR overhead conductors to 795 AA from pole 239154 to existing air switch A-4310 on the southeast corner of Chicon and 3rd. Upgrade approximately 1400 linear feet of existing 4/0 CU overhead conductors to 795 AA from existing air switch A-1324 on the southeast corner of Chicon and 7th.

Verify whether approximately 2800 linear feet of existing 2/0 CU overhead conductors were upgraded to 795 AL from pole 244894 to Waller St. If it has not, install it. Also verify if LF 04148 (pole 394959) was replaced with a new 125A air switch along this route. If not installed, replace.

# JUSTIFICATION:

The establishment of these new feeder routes is essential to providing and maintaining electrical service to the existing and future loads of the Pedernales and Seaholm Plant substation service areas. If installed, the upgrades should increase the load carrying capacity of the PE01 feeder by approximately 85 percent. This increase should not only allow the PE01 feeder to operate below rated capacity but will allow for load relief via switching on the adjacent SP02 and PE03 feeders.

The peak loads supplied by the PE01 feeder reached 6.8 MW (82% of rating) in the summer of 2020. The adjacent Seaholm SP02 feeder reached 7.2 MW (93% of rating) in the summer of 2020. The adjacent PE03 feeder reached 9.3 MW (104% of rating) in the summer of 2021.

## **NEED DATE:**

June 2022

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and could also create an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations. Delaying this project could also impact approximately 5,700 customers on the PE01, PE03 and SP02 feeders. To serve those customers load would have to be switched from the existing PE05, PE07 and Kingsbery substation KB03 feeders, which loaded to 85, 65, and 122 percent of rating respectively during summer peak 2021.

## **BUSINESS FACTOR:**

## PEDERNALES PE03 RECONDUCTOR---C818

### **DESCRIPTION:**

Upgrade underground cables and reconductor the overhead backbone conductors for the PE03 feeder out of the Pedernales substation.

Verify the existence and condition of approximately 1500 linear feet of existing de-energized run of 500 MCM cables inside existing duct banks from the PE-1234 unit transformer to existing D-1179 along the south side of Canterbury St. If the cables are not there or are unusable, install approximately 1500 linear feet of 2-500 MCM underground cables from the get-a-ways at the PE-1234 unit transformer (PE03 feeder position) to D-1179.

Upgrade approximately 900 linear feet of existing 336 ASCR overhead conductors to 795 AA from pole 239378 eastward to Pedernales Street (pole 239154).

Upgrade approximately 2700 linear feet of existing 336 ASCR overhead conductors to 795 AA from pole 239154 to D-0980 (pole 243251).

Upgrade approximately 3600 linear feet of existing 336 ASCR overhead conductors to 795 AA from Pedernales St to Springdale Road (pole 239879).

Upgrade approximately 400 linear feet of existing 336 ASCR overhead conductors to 795 AA from Pedernales St to air switch A-1234 (pole 240037).

### JUSTIFICATION:

The establishment of these new feeder routes is essential to providing and maintaining electrical service to the existing and future loads of the Pedernales and Kingsbery substation service areas. If installed, the upgrades should increase the load carrying capacity of the PE-3 feeder by approximately 85 percent. This upgrade will allow the PE-3 feeder to operate below its normal rating, and also allow for load relief via switching on the adjacent KB04 feeder, which will allow that feeder to serve the area near the future Springdale Green Office Campus project, which is anticipated to add 9-11 MVA of residential and mid to high rise office load by 2025.

The peak loads supplied by the PE-3 feeder reached 9.3 MW (104% of rating) in the summer of 2021. The adjacent Kingsbery KB03 feeder reached 14.0 MW (122% of rating) in the summer of 2021. The adjacent KB04 feeder reached 8.7 MW (64% of rating) in the summer of 2021.

#### **NEED DATE:**

May 2023

#### **IMPACT OF DELAY:**

The Springdale Green Office Campus (1011 Springdale Rd) is anticipated to add 8-10 MVA of office space by 2025. There is insufficient capacity to serve that load at buildout from the nearest existing Kingsbery feeders. Delaying this project will restrict the ability to support new load developments reliably and efficiently in the East Austin, Holly and Govalle areas, creating unnecessary risk of service interruptions during contingency conditions due to switching limitations. Delaying this project could also impact approximately 8,000 customers on the PE03, KB03 and KB04 feeders. To serve those customers, load would have to be switched from the existing KB06, SP02, FI02, and BE05 feeders, which were loaded to 105, 105, 66 and 71 percent of their normal rating respectively during summer peak 2018. The Fiesta and Bergstrom substations serve high profile customers such as the St. David's Medical Center and Bergstrom International Airport, respectively, which severely limits the feeders' available capacity.

#### **BUSINESS FACTOR:**

## PEDERNALES PE04 & PE06 REROUTE & RECONDUCTOR---C006

#### **DESCRIPTION:**

Install 12-3" conduits across Lady Bird Lake.

PE04: Install approximately 4200 linear feet of 1000 MCM underground cables from the existing D-2041 to the existing D-1334.

PE06: Install approximately 1800 linear feet of 1000 MCM underground cables from the existing D-2039 to the existing D-1335.

The existing submarine cable river crossings will be abandoned.

### JUSTIFICATION:

The establishment of these new feeder routes is essential to providing electrical service to load growth in the Pedernales substation service area. The existing submarine cables serving this area are more than thirty years old and are nearing the end of their useful life and have been identified as a high priority for upgrade. If the development gets ahead of feeder construction, or the existing submarine cables should fail, reliable service for customers in the Pedernales substation service area will not possible.

The peak loads supplied by feeders PE04 and PE06 reached 5.5 MW and 7.2 MW respectively in Summer 2021.

To serve these loads from south of the river, new feeders from either the Burleson substation (approximately 8,000 linear feet) or from the Grove substation (approximately 12,000 linear feet) would have to be constructed through very heavily congested residential and commercial areas.

#### **NEED DATE:**

May 2022

### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 1,933 customers on feeder PE04 and 3,535 customers on feeder PE06.

# **BUSINESS FACTOR:**

# PEDERNALES PE06 RECONDUCTOR---C819

### **DESCRIPTION:**

Upgrade approximately 2500 linear feet of existing 336 ACSR conductors to 795 AA along Tinnin Ford Road between D1335 and A-3099.

### JUSTIFICATION:

This project will increase the normal rating on the PE06 feeder, which was recently de-rated to mirror the SCADA single level alarm rating. Currently the feeder rating is limited by the existing 336 ACSR south of D-1335. This upgrade will also allow the PE06 to serve future growth in the Riverside area between Tinnin Ford Drive and Pleasant Valley Drive.

#### **NEED DATE:**

May 2023

# **IMPACT OF DELAY:**

Delaying this project could restrict the ability to serve large customers including Oracle's Riverside Campus. Delaying this project could lead to overload conditions on the backbone overhead conductors very high upstream on the PE06 feeder, potentially impacting approximately 3,500 customers.

# **BUSINESS FACTOR:**

### **SEAHOLM PLANT NEW FEEDER SP03---CA07**

#### **DESCRIPTION:**

Develop a new distribution feeder (SP03) out of the Seaholm substation. This will involve installing approximately 5,500 linear feet of 3-500 MCM underground cables from the Seaholm substation to the manhole at the intersection of East 4th Street and Neches Street. Break the existing SP02 Y-splice, and re-splice the existing SP02 to the cables that connect to existing D1055 (north). Splice the new SP03 to the cables that connect to D1957 (east).

### JUSTIFICATION:

The existing SP02 feeder runs from the Seaholm substation to the manhole near the Downtown Train Station at East 4th street and Neches Street. Inside that manhole, the existing cables are "Y-spliced" and then continues in two directions: north to serve 12kV distribution load in the Downtown and Eastside Austin areas, and south to serve distribution 12kV load in the areas from 3rd street southward to the Rainey Street area. Operations has indicated that the y-splice is not standard practice and recommends that it be removed.

While the SP02 loaded at 93% of load during summer peak of 2021, there are two high-rise residential towers under construction and nearing completion in the Rainey Street area that will be served by this feeder - 44 East (49 stories) and 48 East (33 stories) – that will add potentially as much as 5 MVA of additional load to the SP02 as soon as summer peak 2022. Installation the new SP03 is also anticipated to relieve approximately 5 MVA of load from the SP02.

This will not only relieve the annual overloads to the SP02 feeder, but will also allow distribution system loads in the high-profile Rainey Street area to be reliably served by feeders from three different unit transformers out of two different distribution substations, as the new SP03 will tie to both the existing Pedernales substation PE01 and PE05 feeders.

# **NEED DATE:**

June 2023

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently in high profile downtown Austin areas, and could also create an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations.

#### **BUSINESS FACTOR:**

## SEAHOLM PLANT SP01 RECONDUCTOR PHASE 2---C166 & C646

#### **DESCRIPTION:**

C166 – Distribution South - Reconductor approximately 1,300 linear feet of existing 4/0 ACSR conductor on distribution feeder SP01 feeder with 795 AL along Shoal Creek Blvd. from W 11<sup>th</sup> St. to Lamar Blvd. (pole # 252671 to pole # 254792). Reconductor approximately 2,000 linear feet of existing 4/0 ACSR conductor with 795 AL along Lamar Boulevard from Shoal Creek Blvd. to W Martin Luther King Blvd. (pole #254792 to pole #392147).

C646 – Distribution North - Reconductor approximately 7,000 linear feet of existing 4/0 ACSR conductor with 795 AL along Lamar Boulevard from W Martin Luther King Blvd. to San Gabriel St. (pole #392147 to pole #353279).

#### JUSTIFICATION:

This project will upgrade overloaded overhead conductors on feeder SP01 out of the Seaholm substation from 4/0 ACSR to 795 AL. It will also provide improved switching flexibility between this feeder and feeder WA01 out of the Warren substation. This will improve service reliability to growing loads and multiple current and near future Dual Feeder projects in the Central Austin substation area, including high profile projects like the Texas Facilities North Austin Campus (TFC NAC), Heart Hospital and Austin State Hospital. The existing 4/0 ACSR conductor in this area does not provide the necessary capacity to pick up loads under contingency switching conditions.

### **NEED DATE:**

June 2023

#### **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently, and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations.

# **BUSINESS FACTOR:**

Distribution Load Growth (C166) Distribution System Reliability (C646)

## SEAHOLM PLANT SP12 RECONDUCTOR---C468

### **DESCRIPTION:**

Reconductor approximately 3,400 circuit feet from pole #247976 to pole #246258 to 795AL on the SP12 feeder.

### JUSTIFICATION:

Project will improve switching flexibility in the area and strengthen feeder tie between SP12 and the surrounding feeders.

#### **NEED DATE:**

May 2023

### **IMPACT OF DELAY:**

During a recent outage to the PE04 and PE06 river crossings, there were significant issues switching the load off those feeders due to wire size constraints. Delaying this project could create an unnecessary risk of service interruptions to 2104 customers on the SP12, 3551 customers on the PE06, 2740 customers on the SP08, and 906 on the BC05 feeders during contingency conditions because of switching limitations due to future events. Delay will also restrict the ability to support new load developments reliably and efficiently.

# **BUSINESS FACTOR:**

# STONEY RIDGE - ELROY SR02 & ER03 FEEDER TIE---C646 & 2500

#### **DESCRIPTION:**

Create a feeder tie between the Stoney Ridge substation feeder SR02 and the Elroy substation feeder ER03 by constructing approximately 600 circuit feet of three-phase 795 AL from pole #392543 to pole #392303. A normally-open air switch should be installed between the two feeders. Upgrade to three-phase 795 construction from pole #302543 to pole #392380 approximately 1500 feet.

#### JUSTIFICATION:

This project will improve the switching flexibility between the Stoney Ridge and Elroy feeders and give the System Operators additional support in the area during contingency events.

# **NEED DATE:**

May 2024

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts approximately 1055 customers on feeder SR02 and the service to the Circuit of America and its surrounding customers.

### **BUSINESS FACTOR:**

### STONEY RIDGE NEW FEEDER SR03---C094

#### **DESCRIPTION:**

Develop a new distribution feeder SR03 out of the Stoney Ridge substation.

This will involve building approximately 6,500 linear feet of 795 AL (double circuit construction) out of the substation along Heine Farm Road heading north along Ross Road to Pearce Lane. The new feeder will pick up existing load at Pearce Lane to the east of Ross Road.

### JUSTIFICATION:

New feeder SR03 out of the Stoney Ridge substation is being added as necessary to serve developing loads in this area in addition to the large Longview subdivision (430 acres) planned for 1500 homes.

#### **NEED DATE:**

May 2025

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations.

### **BUSINESS FACTOR:**

## SUMMIT SU06 & SU13 FEEDER TIE---C812

#### **DESCRIPTION:**

Reroute distribution feeder getaway SU06 by building approximately 1,500 linear feet of 2-500 CU underground cable from the manhole off Alterra Parkway just south of Esperanza crossing to the manhole at Kramer Lane along Alterra parkway, and tie with the existing de-energized cable at the corner of Alterra Parkway and Kramer Lane.

Reroute distribution feeder getaway SU13 by splicing it to the existing SU06 getaway cable in the manhole off Alterra Parkway just south of Esperanza boulevard. The existing SU06 riser will become SU13.

#### JUSTIFICATION:

The Summit substation area near the domain is experiencing rapid growth that is anticipated to load feeders beyond their rated limits in a very short period of time. There are large dual feed customers that tie up capacity on the Summit feeders adding to the congestion on feeders and units. Not only will these large developments overload the existing feeders in the area, but they will also make switching impossible once completed.

### **NEED DATE:**

March 2022

### IMPACT OF DELAY:

Delaying this project will result in new customers not getting service due to circuits and units reaching their thermal capacity.

# **BUSINESS FACTOR:**

#### **SUMMIT SU06 RECONDUCTOR & FEEDER TIE---2500**

#### **DESCRIPTION:**

Reconductor approximately 2,430 linear feet of existing 1/0 ACSR conductor on distribution feeder SU06 out of the Summit substation with 795 AL starting at the corner of Braker Lane and Burnet Rd, along Braker Lane and behind Brockton Drive (Pole# 317284 east to Pole# 316909 and north to Pole# 317651) and approximately 1,390 linear feet of existing 1/0 ACSR conductor with 795 AL starting at the end of Reichold Drive extending east (Pole# 414802 to Pole# 399535).

Extend approximately 1,150 linear feet of overhead conductor and underground conductor on Feeder SU06 from Pole# 399535 to Pole# 315793.

#### JUSTIFICATION:

This project will increase reliability to large loads in the area and improve switching flexibility between adjacent feeders.

### **NEED DATE:**

May 2022

# **IMPACT OF DELAY:**

Delaying this project will restrict the ability to support new load developments reliably and efficiently and will create an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. Delaying this project also impacts the Austin FC Stadium and large towers on Feeder SU06.

#### **BUSINESS FACTOR:**

# SUMMIT SU12 & SU13 FEEDER TIE---C814

#### **DESCRIPTION:**

Build approximately 1,000 linear feet of new underground cable along Palm Way using 1000 MCM from Alterra Pkwy to the east side of Burnet Road.

### JUSTIFICATION:

The Summit substation area near the domain is experiencing rapid growth that is anticipated to load feeders beyond their rated limits in a very short period of time. There are large dual feed customers that tie up capacity on the Summit feeders adding to the congestion on feeders and units.

Not only will these large developments overload the existing feeders in the area, but they will also make switching impossible once completed.

### **NEED DATE:**

March 2022

### **IMPACT OF DELAY:**

Delaying this project will result in new customers not getting service due to circuits and units reaching their thermal capacity.

# **BUSINESS FACTOR:**

## TRADING POST TP01 FEEDER TIE---C062

#### **DESCRIPTION:**

Extend distribution feeder TP01 out of the Trading Post substation by building approximately 3,540 linear feet of 795 AL on the western boundary of the Bella Colinas subdivision from Highway 71 and tie into the existing overhead distribution line on Hamilton Pool Road. Reconductor approximately 1,030 linear feet of existing 1/0 ACSR conductor and approximately 510 linear feet of existing # 6 CU conductor with 795 AL on the southern boundary of the Bella Colinas subdivision and tie into the existing overhead distribution line on Hamilton

### JUSTIFICATION:

As the areas along Highway 71 and Hamilton Pool Road continue to develop, additional feeder tie lines will be needed to support the area and improve switching flexibility. Because this area is on the outer edge of the Austin Energy service territory, available routes for feeders is extremely limited. Ongoing development in the Bella Colinas subdivision between Highway 71 and Hamilton Pool Road offers the opportunity to develop the distribution infrastructure necessary for this area in while extending service into the subdivision.

Extending feeder TP01 into this area in conjunction with upgrading existing distribution facilities along Hamilton Pool Road will improve the reliability in this area and will enhance switching flexibility.

#### **NEED DATE:**

May 2023

#### IMPACT OF DELAY:

Delaying this project will restrict the ability to reliably and efficiently support new load developments and creates an unnecessary risk of service interruptions to customers during contingency conditions due to switching limitations. New loads in this area include the Bella Colinas subdivision (413 single-family lots).

#### **BUSINESS FACTOR:**

## WALNUT CREEK WC08 RECONDUCTOR---C815

#### **DESCRIPTION:**

Upgrade approximately 2,356 linear feet of existing 1/0 ACSR overhead conductor to 795 ACSR along Gilbert Rd. starting from N SH 130 crossing and going East and then going South to where Gilbert Rd. turns into Decker Lake Rd.

Upgrade approximately 5,250 linear feet of existing 1/0 ACSR overhead conductor to 795 ACSR along Texas 130 Service Rd. (South-bound side) starting from five (5) spans South of Decker Lake Rd. and going North to N SH 130 crossing.

Install approximately 2,085 linear feet of new 795 ACSR mainline from North East corner of intersection of N FM 973 and Decker Lake Rd. and going east along the North side of Decker Lake Rd. to where Decker Lake Rd ends at Texas 130 Service Rd. (South-bound side). Install a normally-open air-switch and tie to existing 1/0 line (Upgrade to 795 ACSR this project) North side of Decker Lake Rd.

### **JUSTIFICATION:**

New service for 1,240,000 sq. ft. of new retail, office, and warehouse buildings requires an increase in load carrying capacity on existing end-of-line segment WC08 which is currently fed from Walnut Creek substation. Existing 1/0 overhead line cannot accommodate the full build-out of the new development and therefore this upgrade is necessary to accommodate this development and future developments in this area while also ensuring voltage does not drop below ANSI C84.1 standard.

The peak loads supplied by WC08 feeder reached 11.6 MVA (75% loading) in the summer of 2018.

Adding a tie between existing 795 ACSR mainline along Decker Lake Rd. will add switching flexibility to the area, which will increase reliability.

#### **NEED DATE:**

September 2022

#### IMPACT OF DELAY:

Delaying this project will restrict the ability to support new customer developments reliably and efficiently in this area and creates an unnecessary risk of service interruptions to customers during contingency conditions because of switching limitations.

### **BUSINESS FACTOR:**