

RULE 3206 REPORT PROPOSED CONSTRUCTION OR EXTENSION OF TRANSMISSION FACILITIES

2021 THROUGH 2023

Proceeding No. 20M-0005E

April 30, 2020

TABLE OF CONTENTS

ITE	EM S	<u>S</u>	PAGE	
Α.	IN	TRO		4
В.	NE	EW	PROJECTS THAT MAY REQUIRE A CPCN	6
	1.	W	eld – Ennis 230/115 kV Transmission Project	6
C.	NE CC	EW DMI	PROJECTS FOR WHICH PUBLIC SERVICE REQUESTS MISSION DETERMINE A CPCN IS NOT REQUIRED	THE 10
	1.	Nc	one	10
D.	PF OF CC CC	roj = b DMF DUF	IECTS PUBLIC SERVICE CONSIDERS TO BE IN THE ORDINARY COU BUSINESS PURSUANT TO RULE 3206(B)(I) OR (II) AND WHICH PANY REQUESTS THE COMMISSION FIND TO BE IN THE ORDIN RSE OF BUSINESS	RSE THE ARY 11
	1.	Nc	one	11
Ε.	ST	TAT	US OF PROJECTS LISTED IN PRIOR REPORTS	12
F.	DE Pl	ETA JRP	NILED PROJECT STATUS UPDATES FOR COMMISSION INFORMATIO	NAL 18
	1.	Mi	Iton – Rosedale 230 kV Transmission and Weld – Rosedale 230 kV Line	18
	2.	Blu	uestone Valley Substation Phase 1 & 2	18
	3.	CE	EPP, Greenwood – Denver Terminal 230 kV Transmission	19
	4.	CE	EPP, Voltage Control	19
G.	PF	roj	IECTS FOR COMMISSION INFORMATIONAL PURPOSES	20
	1.	Lo	ng Range Distribution Planning Substation Projects	20
	2.	W	eld County Load Serving Request	20
Н.	PF DE	ROJ ECI:	IECT FOR WHICH PUBLIC SERVICE WILL FILE A CPCN PURSUANT SION NO. C18-0761	Г ТО 22
	1.	CE	EPP, Interconnection Facilities	22
		a.	Mirasol (Formerly Badger Hills) 230 kV Switching Station, (Bid ID X647)	22
		b.	Tundra 345 kV Switching Station, (Bid ID X645)	23
		C.	New 230 kV Switching Station on the Hartsel - Tarryall 230 kV Line, (Bid I S085)	D 23
		d.	New Interconnection at the Existing 230 kV Keenesburg Substation, (Bid 090)	ID 23
		e.	New Interconnection at the Existing Boone 230 kV Substation, (Bid ID 03	5) 24
		f.	New Interconnection at the Existing Midway Substation, (Bid ID 056)	24

A.INTRODUCTION

In July of 2006, the Colorado Public Utilities Commission ("Commission" or "CPUC") adopted Rule 3206 as a part of 4 Code of Colorado Regulations ("CCR") 723-3, which are rules regulating Electric Utilities. Rule 3206 sets forth requirements for construction and extension of transmission facilities, and Rule 3206(d) requires applicable utilities, including Public Service Company of Colorado ("Public Service" or the "Company"), to file annual reports on its planned transmission facilities. The purpose of the Rule 3206 report is to notify the Commission of pending or planned transmission system work and help the Commission determine if such projects (1) require a Certificate of Public Convenience and Necessity ("CPCN") under Rule 3102 and § 40-5-101, C.R.S., (2) do not require a CPCN, or (3) are in the ordinary course of business.

This report includes Public Service projects which are planned to be implemented within the following three years and conceptual projects that the Company is considering, but does not necessarily have planned in-service dates for at this time. "Planned Projects" are projects for which Public Service generally has a level of commitment such that proposed schedules for completion have been drafted, site control has been established, and/or the project has received budgetary approvals. These include projects that are necessary to meet reliability and load growth needs, planned interconnection of new generation, or to meet enacted public policy requirements etc. "Conceptual Projects," on the other hand, may not have specific in-service dates identified, and their implementation likely depends on numerous factors, some of which include forecasted load growth and generation needs, economic considerations, public policy initiatives, and regional transmission development. The Company also includes alternatives considered for each project, including consideration of energy storage systems, consistent with Rule 3206(d)(I)(D).

This report is divided into several sections. The first section is this introduction to provide some background and a brief explanation of what is included with this filing.

Section B includes new projects that may require a CPCN under Commission rules and for which the Company plans to pursue a CPCN absent a Commission ruling otherwise. Generally, these are projects that include:

1. Facilities not in the ordinary course of business;

2. A new 230 kV or 345 kV transmission facility that is <u>not</u> a radial transmission line servicing a single retail customer; or

3. Transmission facilities between 115 kV and 138 kV that do not meet the appropriate noise and magnetic field thresholds established by Commission Rules and/or are not in the ordinary course of business.

The Company is presenting one project in this section.

Section C includes projects that may require a CPCN under Commission rules, but for which the Company is requesting a Commission determination that a CPCN is not required. In this filing, the Company is not presenting any projects in this category.

Section D in this filing includes projects for which a CPCN is likely not required under Commission rules. For all projects in this section, the Company is requesting affirmative rulings that the projects are in the normal course of business. The Company is not presenting any projects in this category.

Section E of this filing provides an update of projects that have been listed in past Rule 3206 filings, or for which the Company has initiated the CPCN process since its last Rule 3206 filing.

Section F of this filing provides additional information on projects in Section E that have major modifications in cost or scope of the project, and warrants additional information.

Section G of this filing includes projects generally considered conceptual at the time of filing and which are being provided for informational purposes only. This 2020 filing includes one conceptual transmission project, and provides updates to the previously informed conceptual projects.

Section H of this filing includes projects associated with the Colorado Energy Plan Portfolio ("CEPP") for which Public Service will file a CPCN pursuant to Commission Decision No. C18-0761 issued in Phase II of the Company's most recent Electric Resource Plan ("ERP"), Proceeding 16A-0396E.

Transmission Costs

Unless otherwise stated, all costs and budgets in this filing are "Transmission Costs," which Public Service considers to be the procurement costs of each project's physical Transmission Facilities as defined by Rule 3001(kk) plus the associated subsidiary costs necessary to design, install, and operate those facilities. In keeping with Rule 3001(kk), "Transmission Facilities" are "those lines and related substations designed and operating at voltage levels above the utility's voltages for distribution facilities, including but not limited to related substation facilities such as transformers, capacitor banks, or breakers that are integral to the circuitry of the utility's transmission system." More specifically, for purposes of this Report, Transmission Costs include cost estimates associated with high voltage transmission devices and machines, labor and contractor rates, materials, overhead, contingency reserves, transmission land acquisition, transmission right-of-ways, and engineering.

Public Service does not include distribution-level voltage facilities (such as dedicated substations and feeders), generation facilities, which may (or may not) include bulk energy storage as part of their injection capabilities/technology, or distribution siting and land rights activities in Transmission Costs. The Company provides relevant distribution and distribution land costs in applicable CPCN applications. Unless otherwise noted, all costs listed in this filing are Transmission Costs as defined above.

Due to the fact that Transmission Cost estimates are refined during a project's lifecycle, the Transmission Cost estimates presented in this report are subject to change between the time the Company files its Rule 3206 Report and when it files, or presents, other documents related to a project, such as a CPCN application or presentations at stakeholder outreach meetings.

B.NEW PROJECTS THAT MAY REQUIRE A CPCN

1. Weld – Ennis 230/115 kV Transmission Project

Public Service Company of Colorado Transmission Construction Project

Name of the project:

Weld – Ennis 230/115 kV Transmission Project

Project description:

This project consists of constructing approximately thirty-eight (38) miles of new 230/115 kV transmission lines between Weld and Ennis Substations in northeast Colorado, south of the City of Greeley. The Weld – Ennis 230/115 kV Transmission project will interconnect at two new "greenfield" substations – Beebe Draw Substation and "new" Box Elder Substation.

Approximately, seventeen (17) miles of new transmission line between Weld and Rosedale Substation will be constructed and operated as a single 230 kV circuit.

Approximately, twenty-one (21) miles of new transmission line between Rosedale and Ennis Substation will be constructed as double circuit, 230 kV capable, only one circuit strung, and will initially operate at 115 kV.

The Beebe Draw Substation will be constructed at 230 kV, on the new 230 kV line between Weld and Rosedale Substation, located near the town of LaSalle. The existing 44 kV LaSalle Substation will be decommissioned, with its loads transferred to the new substation.

The new Box Elder Substation will be constructed at 230 kV capable, but will initially operate at 115 kV, on the new 115 kV line between Rosedale and Ennis Substation. The existing 44 kV Box Elder Substation will be decommissioned, with its loads transferred to the new Box Elder Substation.

The existing Rosedale 115 kV Substation will be expanded to include new 230/115 kV terminations and a 230/115 kV, 280 MVA transformer to allow for the interconnections of the new Weld – Rosedale 230kV line and voltage transformation.

The existing 44 kV transmission system between Greeley – Lasalle – Box Elder is antiquated and deteriorating rapidly. The Weld – Ennis 230 kV project will replace the aging system and is needed to ensure reliability to the existing loads, alleviate potential overloads, and allow new load interconnection in the region.

Project alternatives considered:

1. Building a new "Greeley South" Substation by tapping the existing 115 kV transmission lines between Weld Substation and Rosedale Substation. This alternative would not alleviate potential overloads or allow service to new loads. The Box Elder load will remain on the existing 44 kV system

and will experience reduced reliability as it is fed radially from Greeley Substation.

 Non-transmission alternatives or Energy storage system(s) ("ESS") would not address the deteriorating physical condition of the existing 44 kV infrastructure. Retirement and replacement of these components is the most feasible, reliable, and economical solution to meet the study objectives.

Estimated Transmission Cost of the project:

\$98 million

Projected date for the start of construction of the project: 2023

Estimated date of completion of the project:

2025

Estimated in-service date of the project:

2025

Proposed general location:

Weld County, CO

Prudent avoidance measures being evaluated for transmission facilities:

The proposed project will be built to meet all prudent avoidance requirements for noise and magnetic fields.



C.NEW PROJECTS FOR WHICH PUBLIC SERVICE REQUESTS THE COMMISSION DETERMINE A CPCN IS NOT REQUIRED

1. None

D. PROJECTS PUBLIC SERVICE CONSIDERS TO BE IN THE ORDINARY COURSE OF BUSINESS PURSUANT TO RULE 3206(B)(I) OR (II) AND WHICH THE COMPANY REQUESTS THE COMMISSION FIND TO BE IN THE ORDINARY COURSE OF BUSINESS

1. None

E. STATUS OF PROJECTS LISTED IN PRIOR REPORTS

The Transmission Costs reported in the following table are for Transmission facilities only and reported in millions of dollars.

TBD = To Be Determined ISD = In-Service Date Report = Rule 3206 Filing

Projects In-Service, Cancelled, or Replaced Since 2019					
ltem #	Project Name	Change in Status/Cost	Reason for Change		
1	Bluestone Valley Substation Phase 1	Yes	Completed		
2	Pawnee- Daniels Park 345 kV Transmission Line Project and Harvest Mile 230/345 kV Substation	Yes	Completed		
3	Sullivan 230/13.8 kV, 50 MVA # 3 Distribution Project	Yes	Completed		
4	Thornton Distribution Substation	Yes	Completed		
5	Milton - Rosedale 230 kV Transmission	Yes	Replaced with Weld-Ennis 230/115 kV project in the 2020 Rule 3206 filing.		
6	Weld – Rosedale 230 kV Line	Yes	Replaced with Weld-Ennis 230/115 kV Transmission project in the 2020 Rule 3206 filing.		
7	CEPP, Shortgrass 345 kV Switching Station	Yes	Completed		
8	Southwest Weld Expansion ("SWEP") Project Participation	Yes	Participation Cancelled.		

Projects by In-Service Date (ISD)						
2020	2020 ISD Projects					
ltem #	Project Name	Change in Status/Cost	Project Status	Transmission Cost (\$ million)		
9	NREL 115 kV Substation	Yes	ISD changed from 04/2020 to 07/2020 due to land acquisition timing. The project is in the ordinary course of business and a CPCN is not required. (Proceeding No. 17M- 005E, Decision No. C17- 0539)	Transmission Cost increased from \$8.4 to \$10.4 due to civil construction, labor, and material costs running higher than estimated.		
10	Avery 230/13.8 kV, 28 MVA Distribution Substation	Yes	ISD changed from 9/2020 to 05/2022 due to permitting delays and construction schedules. A CPCN was granted for this project in Decision No. C15-0461, Proceeding No. 15A-0159E.	Cost increase from \$8.4 to \$10.3 due to change in route and higher land acquisition costs.		
11	CEPP: Voltage Control	Νο	Project ISDs Shortgrass Reactors: 04/2020 Harvest Mile Capacitors: 06/2020 Missile Site Capacitors: 06/2020 Daniels Park Capacitors: 12/2020 Pronghorn Dynamic Voltage Support: 12/2020 Voltage Control AVSO: 12/2020 CF&I Furnace Reactive Support: 12/2023 CPCN for all voltage control projects filed 12/20/2019 (CPCN filed in Proceeding No. 19A- 0728E)	\$93.6		

2021	2021 ISD Projects						
	NONE						
2022	2022 ISD Projects						
12	Ault – Cloverly 230/115 kV Transmission	Yes	ISD changed from 12/2021 to 12/2022 due to local permitting delays. A CPCN was granted for this project in Decision No. R18-0135 in Proceeding No. 17A-0146E.	Transmission Cost increase from \$65 to \$66.7 due to updated forecasts.			
13	Avon – Gilman 115 kV Line and 45 MVAR Capacitor Bank at Vail Substation	Yes	ISD is 12/2022. This project is in the ordinary course of business and a CPCN is not required. (Decision No. C15-0590, Proceeding No. 15M- 0043E)	Transmission Cost reduced from \$22.9 to \$11.4 to reflect Public Service's portion of the Transmission Cost.			
14	Barker Substation (Distribution, 230/13.8 kV, 50 MVA)	Yes	ISD for Bank #1 changed from 12/2021 to 10/2022. ISD for Bank #2 changed from 5/2022 to 6/2023 change is due to delayed load growth. No CPCN is required. (Decision No. C10-0644, Proceeding No. 10M-206E)	Transmission Cost decrease from \$32.5 to \$30.5 due to refined estimates and design updates.			
15	High Point Distribution Substation 230-13.8 kV	No	ISD is 2022. Determined that a CPCN will be (is) required (Decision No. C18-0843, Proceeding No. 18M-0005E); CPCN for associated Transmission and Distribution facilities filed in Proceeding No. 20A-0082E)	Confidential, please see Proceeding No. 20A-0082E for additional detail.			
16	CEPP: Greenwood – Denver Terminal 230 kV Transmission	Yes	ISD is 12/2022. CPCN Required (Decision No. C18-0761, Proceeding No. 16A-0393E) A CPCN was filed 02/21/2020. (CPCN filed in Proceeding No. 20A-0063E)	\$50.1			

2023 ISD Projects					
17	Titan Distribution Substation 230/13.8 kV Project	Yes	ISD is 2023. CPCN granted. (Decision No. C18-0427, Proceeding No. 18A-0199E)	Transmission Cost increase from \$12.5 to \$13 due to updated material, labor, and price estimates.	
18	Bluestone Valley Substation Phase 2	Yes	ISD is 2023. A CPCN is not required. (Decision No. C09-0681, Proceeding No. 09M-392E)	TBD	
19	Dove Valley Distribution Substation 115/13.8 kV	Yes	ISD changed from 11/2022 to 2023 due to delayed load growth. Project determined to be "in the ordinary course of business". (Decision No. C18-0843, Proceeding No. 18M-0005E)	TBD	
20	Climax-Robinson Rack- Gilman 115 kV Transmission	Yes	ISD changed from 2022 to 2023 due to construction and outage scheduling. This project is in the ordinary course of business (Proceeding No. 19M-0005E, Decision No. C19-0638).	\$15	
21	Colorado Springs Load Mitigation	Yes	ISD is 2023. ISD could be revised as long-term alternative is developed. Last filed in Proceeding No. 19M-0005E.	TBD	
2024	ISD Projects				
	NONE				
2025 ISD Projects					
	NONE				
2026 ISD Projects					
22	Stock Show Distribution Substation 115/13.8kV	Yes	ISD changed from 2025 to 2026 due to slower load growth. Project determined to be "in the ordinary course of	TBD	

			business". (Decision No. C18-0843, Proceeding No. 18M-0005E)				
ISD T	ISD To Be Determined						
23	Glenwood Springs – Rifle 69/115 kV Conversion	No	ISD is TBD due to delayed load growth.	TBD			
24	Monfort 15 MVAR, 44 kV Capacitor Banks	No	ISD is set to TBD based on local load growth. No CPCN is required. (Decision No. C13-0879, Proceeding No. 13M- 0019E)	\$1.3			
25	New Castle 115/69-24.9 kV Substation (Distribution, 16 MVA)	No	ISD is set to TBD based on local load growth. Project assumes Glenwood-Rifle project (#22) occurs. No CPCN is required. (Decision No. C08-0676, Case No. 6396)	\$1.4			
26	Parachute - Cameo 230 kV Transmission Line	No	ISD is set to TBD based on local load growth. A CPCN is required for this project. (Decision No. C10-0644, Proceeding No. 10M-206E)	\$48.1			
27	Rifle (Ute)-Story Gulch 230 kV Transmission Line Project	No	ISD is set to TBD based on local load growth. A CPCN is required for this project. (Decision No. C10-0644, Proceeding No. 10M- 206E)	\$24			
28	Vasquez 115/13.8 kV, 28 MVA # 2 Transformer	Yes	ISD was 5/2022 and is now TBD due to updated load forecast. This project is in the ordinary course of business and a CPCN is not required. (Decision No. C15-0590, Proceeding No. 15M-0043E)	\$0.3			
29	Wheeler - Wolf Ranch 230 kV Transmission Project	No	ISD is TBD based on local load growth. No CPCN is required. (Decision No. C14-0732, Proceeding No. 14M-0061E)	\$17			

30	Wilson#1 Sub (Distribution, 115/13.8 kV, 14 MVA)	No	ISD is TBD based on local load growth. No CPCN is required. (Decision No. C10-0644, Proceeding No. 10M-206E)	\$3.5
----	---	----	--	-------

F. DETAILED PROJECT STATUS UPDATES FOR COMMISSION INFORMATIONAL PURPOSES

This section is included in this report to provide the Commission with clarity on the status updates to some of the previously filed projects, or projects for which a CPCN has already been filed. The projects listed are provided for Commission information only and the Company is not asking for any determination regarding these projects.

1. Milton – Rosedale 230 kV Transmission and Weld – Rosedale 230 kV Line

The Milton – Rosedale and Weld – Rosedale 230 kV Transmission Line projects have been replaced by the Weld – Ennis 230/115kV Transmission Line Project filed in the 2020 Rule 3206 report after further studies.

The Milton – Rosedale and Weld Rosedale 230 kV Transmission Line projects were originally reported in the Company's 2016 Rule 3206 filing. The Commission determined that these projects would require a CPCN (Decision No. C16-0627, Proceeding No. 16M-009E).

2. Bluestone Valley Substation Phase 1 & 2

The Bluestone Valley Substation project was originally reported in the Company's 2009 Rule 3206 filing with an estimated cost of \$6.3 million. The Commission determined that no CPCN was required in **Decision No. C09-0681, Proceeding No. 09M-392E**.

In the Company's 2016 Rule 3206 filing (Proceeding No. 16M-0009E, at page 30), Public Service filed a revised scope of the Bluestone Valley Substation Project, which divided the project into two phases. Phase 1 of the project created the Bluestone Valley Substation and added a DeBeque – Bluestone 69kV line. The Bluestone Valley 69kV Phase 1 project was completed in 2019.

As stated in the Company's 2016 Rule 3206 filing, Phase 2 of the Bluestone Valley project consists of adding 230 kV transformation at the 69kV Bluestone Valley Phase 1 substation by tapping the Parachute – Cameo 230 kV line using an in-and-out doublecircuit 230 kV transmission line (approximately 0.25 miles). The Parachute-Cameo 230 kV transmission line will be sectionalized in the Bluestone Valley Substation 230 kV yard with a 230 kV three-breaker ring bus arrangement that will create a Parachute-Bluestone Valley 230kV line, a Bluestone Valley-Cameo 230 kV line, and a 230 kV termination for a Bluestone Valley 100 MVA 230-115/69 kV transformer that will connect the Bluestone Valley Substation 230 kV and 69 kV yards. The project would allow removal of the aging DeBeque-Cameo 69kV transmission line which is hazardous and extremely difficult to maintain or replace due to the rugged mountain region it is located in. Phase 2 of the Project is still under evaluation to incorporate updated standards for Transmission Facilities, materials, labor, and other items which will determine a new estimate of Transmission Costs associated with the project. Fundamentally, the general scope and need of the Bluestone Valley Substation project has not changed from the Companies initial 2009 filing.

3. CEPP, Greenwood – Denver Terminal 230 kV Transmission

The Greenwood – Denver Terminal 230 kV Transmission project was originally reported in the Company's 2018 Rule 3206 report, along with other alternatives. The Commission determined that a CPCN would be required for the transmission investment associated with the CEPP (**Decision No. C18-0761**). The Company has filed a CPCN for the Greenwood – Denver Terminal 230 kV Transmission line project (**Proceeding No. 20A-0063E**), which is still pending before the Commission as of the date of the Company's 2020 Rule 3206 filing (this filing).

4. CEPP, Voltage Control

The CEPP, Voltage Control project was originally reported in the Company's 2019 Rule 3206 report. The Company filed a CPCN for the voltage control facilities (**Proceeding No. 19A-0728E**) on December 20, 2019, which is still pending before the Commission as of the date of the Company's 2020 Rule 3206 filing (this filing).

G.PROJECTS FOR COMMISSION INFORMATIONAL PURPOSES

These conceptual projects are not currently planned, but could become planned projects prior to the Company making its next Rule 3206 filing.

1. Long Range Distribution Planning Substation Projects

Public Service, the Staff of the Commission ("Staff'), and the Office of Consumer Counsel ("OCC") agreed in Proceeding No. 14A-1002E that the Company would identify potential new distribution substation sites in rapidly growing areas as part of this report. Below is a preliminary list of conceptual new substation projects under consideration by the Company. This is provided for informational purposes only, and at this time Public Service is not seeking Commission determination of the need for CPCNs for these projects. Because they are conceptual, in-service dates on these projects are all TBD.

Long Range Distribution Planning Substation Projects					
Item #	Substation Project Name	Туре	Approximate location		
31	Superior	115 kV/13.8 kV	Town of Superior		
32	Sandy Creek	230 kV/13.8 kV	Arapahoe County, near future Sandy Creek development		

2. Weld County Load Serving Request

This project was originally filed in the 2019 Rule 3206 Report filing as "New Load Serving Substation and 230/115kV Transmission Line in Weld County" requesting the Commission determine the need for a CPCN. The Commission determined that a CPCN or formal determination that no CPCN is required (**Proceeding 19M-005E, Decision No. C19-0638**).

The project is currently under formal request for study by the customer. Details concerning cost, scope and precise location of the project are yet to be determined due to these ongoing studies and negotiations. The Company is not asking for a determination at this time; but, Public Service will file an amendment to its Rule 3206 Report or a formal request for determination regarding a CPCN once if more details are known prior to filing its next Rule 3206 Report.

Project description:

At present, this project is scheduled to include construction of a 230kV built, 115kV operated, radial transmission line, terminating at a greenfield distribution substation. The distribution substation is anticipated to include a 50 MVA load-

serving distribution transformer, associated substation facilities, and service approximately 25-50 MW of new oil and gas, retail customer, load in the area.

The transmission portion of the project will include approximately five (5) miles of new transmission line extending radially from the existing Ennis Substation. The transmission structures will be constructed to be capable of supporting double-circuit 230 kV operation; however, the transmission line will initially operate using a single circuit operated at 115 kV. This design accommodates the long-range plans for the area (Weld – Ennis 115/230 Transmission Project), including the ability to service future requests.

The current estimated Transmission Costs for this project are \$15 million with an in-service date of early 2021.

H.PROJECTS FOR WHICH PUBLIC SERVICE WILL FILE A CPCN PURSUANT TO DECISION NO. C18-0761

This section describes the interconnection facilities associated with the implementation of the Colorado Energy Plan Portfolio ("CEPP"). In its approval of the CEPP by Decision No. C18-0761, the Commission explicitly directed Public Service to file a CPCN application for the proposed Badger Hills Station (now Mirasol Switching Station) and for the additional transmission investment identified in the 120-Day Report. The total transmission investment associated with the CEPP includes: (1) network upgrades, (2) voltage control, and (3) interconnection facilities. The network upgrades (Greenwood-Denver Terminal Project, Proceeding No. 20A-0063E) and voltage control projects (Proceeding No. 19A-0728E) are described in Section E and F above, and the interconnection facilities are described in this section.

The Company anticipates filing a CPCN application for the CEPP interconnection facilities identified below, along with several other CEPP-related interconnection projects, in 2020. Note that the Shortgrass 345kV Switching Station has been granted a CPCN and is currently in-service. Because the Commission has directed, and the Company has committed to filing CPCNs for these projects, the projects listed below are only being provided for Commission informational purposes and the Company is not asking for any determination regarding these projects in its 2020 Rule 3206 filing (this filing).

1. CEPP, Interconnection Facilities

This section includes the new switching stations determined to be necessary for various interconnections associated with the CEPP. These interconnection facilities also reflect the changes resulting from the Company's proposed ERP Amendment in Proceeding No. 19A-0530E, in which the Company proposed to acquire two Preferred Replacement Bids (i.e. Bid 035 and 056 to replace failed Bid S430 and X427 originally approved as part of the CEPP). A Unanimous Comprehensive Settlement Agreement is currently pending before the Commission.

a. Mirasol (Formerly Badger Hills) 230 kV Switching Station, (Bid ID X647)

Public Service initially proposed the Badger Hills Switching Station in its ERP proceeding (Proceeding No. 16A-0396E). The Badger Hills Switching Station, now known as the Mirasol Switching Station¹, will be located in Pueblo County to accommodate a new 200 MW solar with 100 MW storage generating facility approved as part of the CEPP. The initial design of the Mirasol Substation will include tapping one Comanche – Midway 230 kV. The ultimate design of the

¹ The proposed Badger Hills switching station was renamed "Mirasol" at Pueblo's request.

station will allow future expansion that could tap the other 230 kV and 345 kV lines in the corridor and accommodate 345/230 kV transformation. The Mirasol Switching Station will be located 12 miles east of the existing Comanche Substation.

The anticipated in-service date of this project is June of 2022 with an estimated Transmission Cost of \$12 million.

b. Tundra 345 kV Switching Station, (Bid ID X645)

The project consists of building a new 345 kV switching station tapping the Comanche – Daniels Park 345 kV Line (L 7015). The Tundra 345 kV Switching Station will be located approximately 10 miles from Comanche Substation in Pueblo County. The project is required to interconnect a new 250 MW solar with 125 MW storage generating facility approved as part of the CEPP. The Tundra 345 kV Switching Station will consist of a 3-breaker ring configuration.

The anticipated in-service date of this project is June of 2022 with an estimated Transmission Cost of \$20 million.

c. New 230 kV Switching Station on the Hartsel - Tarryall 230 kV Line, (Bid ID S085)

The project consists of building a new 230 kV switching station tapping the Hartsel – Tarryall 230 kV Line (L 5995). The project is required to reliably interconnect a new 72 MW solar generating facility approved as part of the CEPP. The new 230 kV Switching Station will be constructed in 3-breaker ring configuration.

The anticipated in-service date of this project is December of 2022 with an estimated Transmission Cost of \$12 million.

d. New Interconnection at the Existing 230 kV Keenesburg Substation, (Bid ID 090)

The project consists of a new interconnection at the existing 230 kV Keenesburg Substation. The project is required to interconnect a 169 MW wind generating facility approved as part of the CEPP.

The anticipated in-service date of this project is July of 2020 with an estimated Transmission Cost of \$0.2 million.

e. New Interconnection at the Existing Boone 230 kV Substation, (Bid ID 035)

The project consists of a new interconnection at the existing Boone 230 kV Substation. The project is required to interconnect a new 113 MW solar generating facility in Pueblo County pursuant to the Settlement Agreement filed in Proceeding No. 19A-0530E, and which was approved by Recommended Decision No. R20-0285 issued on April 23, 2020.

The anticipated in-service date of this project is to be determined with an estimated Transmission Cost of \$1.5 million.

f. New Interconnection at the Existing Midway Substation, (Bid ID 056)

The project consists of a new interconnection at the existing Midway Substation. The project is required to interconnect a new 100 MW solar with 50 MW storage generating facility located in El Paso County pursuant to the Settlement Agreement filed in Proceeding No. 19A-0530E, and which was approved by Recommended Decision No. R20-0285 issued on April 23, 2020.

The anticipated in-service date of this project is to be determined with an estimated Transmission Cost of \$0.6 million.

g. Shortgrass 345kV Switching Station, (Bid ID W192 and Bid ID W602, CPCN Issued and Project In Service)

A CPCN for the Shortgrass 345 kV Switching Station (referenced in Section E. above) was issued by Decision No. C19-0175 in Proceeding No. 18A-0860E. The Shortgrass Switching Station was constructed to interconnect two wind generating facilities approved as part of the CEPP, including Bid ID W192 (Cheyenne Ridge Wind Project) and Bid ID W602 (Bronco Plains Wind Project).

This project was placed in-service in March 2020 with actual Transmission Costs of \$21.8 million. The Commission issued a CPCN for this project by Decision No. C19-0175 in Proceeding No. 18A-0860E on February 19, 2019. The original Transmission Cost estimate for this project was \$13.1 million plus or minus a 20 percent contingency, as approved by Decision No. C19-0175. The difference between the actual and original estimated Transmission Costs is due to the inclusion of transmission assets, lines, and other transmission operational equipment (such as communication components, integration with other transmission substations).