

Proceeding No. 21M-0005E
Black Hills Colorado Electric, LLC d/b/a Black Hills Energy (BHCE)
2021 Rule 3206 Report – Appendix A – Project Sheets

Desert Cove-Midway 115 kV Line Rebuild

Project Sponsor:	Black Hills Colorado Electric
Additional Project Participants:	
Project Description:	Rebuild the 115 kV line from Desert Cove to Midway north of Pueblo, CO.
Voltage Class:	115 kV
Facility Rating:	171 MVA
Point of Origin/Location:	Desert Cove 115 kV
Point of Termination:	Midway 115 kV
Intermediate Points:	Fountain Valley 115 kV
Length of Line (in Miles):	14.8
Type of Project:	Transmission Line Rebuild
Development Status:	In-Service
Routing:	
Subregional Planning Group:	CCPG
Purpose of Project:	Increased thermal capacity
Actual Cost:	\$6.4 Million
Schedule:	
Construction Date:	2020
In-Service Date:	January 22, 2021
Regulatory Info:	Approved – Colorado PUC: Decision No. C18-0843.
Regulatory Date:	September 19, 2018
Permitting Info:	
Permitting Date:	
Contact Information:	Lindsay Briggs, Supervisor Transmission Planning
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Description. The Desert Cove-Midway 115 kV line is commonly identified as an undersized transmission facility in most planning studies. The project will rebuild the 14.8 mile line with single circuit 115 kV construction utilizing 795 kcmil 26/7 Strand ACSR “Drake” conductor utilizing the existing right-of-way.

This project consists of rebuilding the existing 14.8-mile segment of 115 kV line between the Desert Cove and WAPA-owned Midway 115 kV substations, including the intermediate Fountain Valley distribution substation. The project will be located within the existing right-of-way. The project is planned for single circuit 115 kV operation.

The project was identified to mitigate thermal loading issues that arose through various transmission planning assessments. The Desert Cove-Fountain Valley-Midway 115 kV line is one of three parallel paths between the BHCE transmission system and the interconnection point with several other utilities at Midway to the north. Certain conditions involving a prevailing power flow from south to north across the BHCE system, combined with the loss of one or more transmission elements, can result in the thermal loading on the line exceeding the established thermal capacity. Additional capacity is needed to avoid the overload risk, and replacing the existing 336 ACSR conductor with 795 kcmil 26/7 Strand ACSR “Drake” conductor was identified as the proposed solution. In addition to the reliability driver for this rebuild, the line was constructed in 1953 and is late in its expected lifecycle.

The maximum and winter continuous ratings of the planned 115 kV facility will be 171 MVA, assuming 795 ACSR conductor and line design rating of 100° C, and a maximum continuous operating voltage of 120.8 kV (105% of nominal). The new rating will be based on a non-BHCE terminal equipment limitation. The expected new ratings provide an increase over the current summer/winter rating of 119/153 MVA, respectively.

Noise and EMF analysis was performed for various typical transmission project design configurations, including the same line design as the planned Desert Cove-Midway project. This was done to determine the anticipated noise and magnetic field levels of the project for comparison against the standards specified in Rule 3206 (f) and Rule 3206 (e), respectively. That analysis was referenced for this project. See Appendix B, page B-20 for summary details on the noise and field study.

Consideration of project alternatives including energy storage systems (Rule 3206(d)(I)(D)). Not applicable. The project was designed and planned prior to the rule requirement effective date of March 2, 2019.

Decision. In Decision C18-0843, the Commission determined that the project was in the ordinary course of business and that a CPCN was not necessary.

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Date: 4/26/2018 GIS Support
 Line Route shown is for informational purposes only.

