

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 17A-0146E

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE NORTHERN GREELEY AREA TRANSMISSION PLAN PROJECT.

**RECOMMENDED DECISION OF
ADMINISTRATIVE LAW JUDGE
CONOR F. FARLEY
GRANTING APPLICATION AND CLOSING PROCEEDING**

Mailed Date: March 1, 2018

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I. STATEMENT

A. Summary

1. This Recommended Decision addresses the Application for a Certificate of Public Convenience and Necessity for the Northern Greeley Area Transmission Plan Project (Application) filed by Public Service Company of Colorado (Public Service or PSCo). For the reasons stated below, the Application is granted. This Recommended Decision also finds that PSCo’s estimates of the transmission noise and magnetic field levels that will result from the operation of the transmission lines proposed in the Application are reasonable.

B. Background

2. On March 9, 2017, PSCo filed the Application. The Application seeks a Certificate of Public Convenience and Necessity (CPCN) to construct what PSCo has termed the “Northern Greeley Area Transmission Plan Project” (Northern Greeley Project or Project). As described in the Application, the Northern Greeley Project proposes to build: (a) approximately 25 miles of new 115/230 kV-capable transmission facilities originating at the Western Area Power Administration (WAPA) Ault Substation northwest of Greeley, Colorado and terminating northeast of Greeley at Public Service’s Cloverly Substation; and (b) two new substations (Husky and Graham Creek) and modify one (Cloverly) that will enable PSCo to retire and decommission three existing substations (Public Service Ault, Eaton, and Pleasant Valley).

According to Public Service:

The Project will satisfy a current need to increase the reliability and load serving capacity of the existing 44 kV transmission system in and around Greeley. It will also address the need for additional future capacity for expected growth in a region where there is a substantial possibility that the load will increase beyond the current 44 kV system’s capacity as early as 2018.¹

PSCo also requests a finding that PSCo’s estimates of the transmission noise and magnetic field levels that will result from the operation of the Northern Greeley Project’s proposed transmission lines are reasonable.

3. On March 14, 2017, the Commission issued a notice of the Application pursuant to § 40-6-108(2), C.R.S.

4. On April 13, 2017, the Office of Consumer Counsel (OCC) filed a Notice of Intervention of Right, Entry of Appearance, and Request for Hearing (OCC’s Notice). In its Notice, the OCC stated that the purpose of its intervention is “to ensure that the approval of the

¹ Application at 2.

Company's Application is in the public interest and whether the provision of these services will result in just and reasonable rates, terms and conditions that are not unduly discriminatory for the OCC's constituency; namely, residential, agricultural and small business consumers."² The OCC stated further that it intended to investigate through discovery the cost of the proposed Northern Greeley Project, and the reasonableness of the specifications of the proposed project versus alternatives. The OCC requested a hearing.

5. On April 20, 2017, Trial Staff of the Public Utilities Commission (Staff) filed a Notice of Intervention as of Right, Entry of Appearance, and Notice Pursuant to Rules 1007(a) and 1401 (Staff's Notice).³ In its Notice, Staff did not oppose the Application at that time, but stated that "its intervention will allow it to further investigate the matter through discovery, review and respond to Answer Testimony filed by others, and ultimately provide the Commission recommendations for the final disposition."⁴ Staff did not request a hearing.

6. On April 26, 2017, the Commission deemed the Application complete and referred it to an Administrative Law Judge (ALJ) for disposition. The matter was subsequently assigned to the undersigned ALJ.

7. On May 11, 2017, the undersigned ALJ issued Decision No. R17-0382-I scheduling a prehearing conference in this proceeding for May 23, 2017.

8. On May 19, 2017, the parties filed a Joint Motion to Vacate Prehearing Conference, for Approval of Proposed Procedural Schedule and Discovery Procedures, and for Waiver of Response Time. In a follow-up email exchange with the undersigned ALJ and all

² OCC's Notice at 2 (¶ 5).

³ 4 *Code of Colorado Regulations* (CCR) 723-1 of the Rules of Practice and Procedure.

⁴ Staff's Notice at 2 (¶ 4).

other parties, PSCo stated that, pursuant to § 40-6-109.5(3), C.R.S., it would waive the statutory deadlines under §§ 40-6-109.5(1) and (2), C.R.S., for a Commission decision to be issued in this proceeding. The waiver was necessary to adopt the procedural schedule proposed by the parties.

9. On May 23, 2017, the undersigned ALJ issued Decision No. R17-0420-I acknowledging the waiver of the statutory deadline, vacating the prehearing conference, and establishing a schedule for this proceeding. Among other things, Decision No. R17-0420-I scheduled a prehearing conference for August 15, 2017 and the evidentiary hearing in this proceeding for August 30, 2017.

10. On June 16 and 19, 2017, the OCC and Staff each filed a Notice of Withdrawal of Intervention, respectively. In its Notice of Withdrawal, the OCC stated that, based on PSCo's responses to discovery, the OCC no longer opposes the Application and requested that the procedural schedule be vacated. In its Notice of Withdrawal, Staff noted its non-opposition to the Application stated in its Notice of Intervention, and then stated that it "intervened only because the matter was requested to be set for hearing by the" OCC.⁵ Staff further stated that, because the OCC withdrew its intervention in this proceeding, Staff likewise withdrew its intervention.

11. On June 20, 2017, PSCo filed a Motion to Treat Application as Unopposed, Vacate Procedural Schedule, and Grant Application (Motion). In the Motion, PSCo notes that the OCC and Staff have withdrawn their interventions, thus leaving the Application unopposed. PSCo concludes with requests to vacate the procedural schedule and to issue a decision granting the Application.

⁵ Staff's Notice of Withdrawal of Intervention at 1 (¶ 2).

12. On August 14, 2017, the undersigned ALJ issued Decision No. R17-0661-I granting-in-part the Motion. Decision No. R17-0661-I vacated the procedural schedule, including the prehearing conference on August 15, 2017 and the evidentiary hearing on August 30, 2017 in light of the withdrawal of the interventions by the OCC and Staff, which left the Application unopposed. Decision No. R17-0661-I also stated that a separate decision would issue addressing the merits of the Application.

C. Application

13. In the Application, PSCo proposes two new substations (Husky and Graham Creek), the modification of an existing substation (Cloverly), the decommissioning of three substations (Public Service Ault, Eaton, and Pleasant Valley), and three new transmission lines (Ault-Husky 230 kV line, Husky-Graham Creek 115 kV line, and Graham Creek-Cloverly 115 kV line). Each is described in more detail below.

1. Substations

a. New Husky Substation/Decommissioning of Public Service Ault Substation

14. PSCo proposes to build a Husky substation to replace the Public Service Ault 44 kV Substation. It will include both 230 kV and 115 kV transmission equipment, including a 230/115 kV, 280 MVA autotransformer, and line termination equipment. The Husky substation will also be constructed to accommodate a 115/12.47 kV, 50 MVA distribution transformer to allow for the existing distribution lines in the area to be interconnected at Husky and served by the 115 kV system. Adequate space will be maintained for the future installation

of two additional distribution transformers.⁶ A new 230 kV termination will be installed at WAPA's Ault substation.⁷

b. New Graham Creek Substation/Decommissioning of Eaton Substation

15. PSCo also proposes to build a new Graham Creek substation to replace the existing Eaton 44 kV substation, which will be decommissioned. The proposed substation will include 115 kV transmission equipment, including a 115/12.27 kV, 50 MVA distribution transformer and line termination equipment, and it will be constructed with sufficient space for future installation of two additional transformers. The Graham Creek substation will be constructed to accommodate distribution transformers to allow for the existing distribution lines in the area to be interconnected at Graham Creek and served by the 115 kV system.⁸

c. Modification of Cloverly Substation and Decommissioning of Pleasant Valley Substation

16. In the Application, PSCo also proposes modifications to the existing Cloverly substation. Public Service built the Cloverly substation in 2016 adjacent to the existing Pleasant Valley substation to interconnect a new customer retail load that was too large to be served by the 44 kV system from Pleasant Valley. The Cloverly substation will now be expanded in order to terminate a new line from Graham Creek and to allow for future load interconnection requests. The Cloverly expansion will also accommodate new distribution transformers to allow for the existing distribution lines that are presently connected at Pleasant Valley to be interconnected at Cloverly and served by the 115 kV system. This will include a 115/12.47 kV, 50 MVA

⁶ Direct Testimony of Thomas W. Green at 13:16-24.

⁷ Direct Testimony of Thomas W. Green, Attach. TWG-4 at 29.

⁸ Direct Testimony of Thomas W. Green at 13:30-14:3.

transformer. PSCo will also modify Cloverly to leave room for the future installation of two additional transformers. Once the Northern Greeley Project is completed, the Cloverly substation will replace the Pleasant Valley substation, which will be decommissioned.⁹

2. Transmission Lines

a. Ault – Husky 230 kV line

17. The Ault-Husky 230 kV line will be built from the WAPA Ault substation to a new Public Service Husky substation, which is expected to be located near the existing Public Service 44 kV Ault substation. This transmission line will be approximately seven miles long and double-circuit 230 kV-capable. Only one circuit will initially be installed and operated at 230 kV.¹⁰

b. Husky – Graham Creek 115 kV line

18. The Husky-Graham Creek 115 kV line will be approximately seven miles and be built double-circuit 230 kV-capable. PSCo proposes to install only one circuit in this project to be operated at 115 kV.¹¹

c. Graham Creek – Cloverly 115 kV line

19. The Graham Creek-Cloverly 115 kV line will be approximately 11 miles. According to PSCo, only one circuit will initially be installed and operated at 115 kV. Eight miles of that new transmission will be built double-circuit 230 kV-capable. The remaining three miles are already constructed to be 115 kV-capable.¹²

⁹ Direct Testimony of Thomas W. Green at 14:9-21; Application at 1-2.

¹⁰ Direct Testimony of Thomas W. Green at 13:10-15.

¹¹ *Id.* at 13:26-28.

¹² *Id.* at 14:4-8.

D. Burden of Proof and Legal Standard

1. Burden of Proof

20. Except as otherwise provided by statute, the Administrative Procedure Act imposes the burden of proof in administrative adjudicatory proceedings upon “the proponent of an order.”¹³ PSCo, as the party seeking an order by the Commission, bears the burden of proof by a preponderance of the evidence.¹⁴ The evidence must be “substantial evidence,” which is defined as “such relevant evidence as a reasonable [person’s] mind might accept as adequate to support a conclusion ... it must be enough to justify, if the trial were to a jury, a refusal to direct a verdict when the conclusion sought to be drawn from it is one of fact for the jury.”¹⁵ This standard requires the finder of fact to determine whether the existence of a contested fact is more probable than its non-existence.¹⁶

2. Legal Standard

21. Under § 40-5-101(a), C.R.S., “[a] public utility shall not begin the construction of a new facility, plant, or system or the extension of its facility, plant, or system without first obtaining from the commission a certificate that the present or future public convenience and necessity require, or will require, the construction or extension.” To meet its burden of proof for approval of a CPCN to construct and operate a facility, a utility must establish the following by a preponderance of the evidence:

(a) a present or future need for the facility; (b) existing facilities are not reasonably adequate and available to meet that need; and (c) the utility has evaluated alternatives to the proposed facility. The impact on utility rates, and

¹³ § 24-4-105(7), C.R.S.

¹⁴ Section 24-4-105(7), C.R.S.; § 13-25-127(1), C.R.S.; Rule 1500 of the Rules of Practice and Procedure, 4 CCR 723-1.

¹⁵ See, e.g., *City of Boulder v. Pub. Utils. Comm’n*, 996 P.2d 1270, 1278 (Colo. 2000) (quoting *CF&I Steel, L.P. v. Pub. Utils. Comm’n*, 949 P.2d 577, 585 (Colo. 1997)).

¹⁶ *Swain v. Colorado Department of Revenue*, 717 P.2d 507 (Colo. App. 1985).

the magnitude of underlying operating, maintenance, and capital costs, also is relevant to the public interest analysis.¹⁷

22. To establish a present or future need, Public Service need not show that the additional service is essential or absolutely indispensable. Instead, Public Service must establish that the proposed project “would be an improvement justifying its costs.”¹⁸ In analyzing future need, “the Commission bases its decisions on substantial possibilities in many different contexts and that some level of prediction is inherent in making a decision that will affect future conditions.”¹⁹

23. Public Service filed the Application in accordance with Rule 3102.²⁰ Under Rule 3102, Public Service must address cost-effective noise mitigation²¹ and prudent avoidance with respect to planning, siting, construction, and operation of the proposed construction or extension. Prudent avoidance is defined as “the striking of a reasonable balance between the potential health effects of exposure to magnetic fields and the cost and impacts of mitigation of such exposure, by taking steps to reduce the exposure at reasonable or modest cost.”²²

24. Additionally, a proponent must establish the estimated costs for the facility and “the estimated costs shall be itemized as land costs, substation costs, and transmission line costs.”²³

¹⁷ Decision No. C13-1549 issued in Proceeding No. 12A-1264ST on December 18, 2013 at 5 (¶ 13) (footnotes omitted). *See also* Decision No. R14-1405 issued in Proceeding No. 14A-0287E on November 25, 2014 at 24 (¶ 100).

¹⁸ Decision No. C13-1549 issued in Proceeding No. 12A-1264ST on December 18, 2013 at 5 (¶ 13) (citing 64 Am. Jur. 2nd Public Utilities § 164).

¹⁹ Decision No. C11-0288 issued in Proceeding No. 09A-324E on March 23, 2011 at 32 (¶ 66).

²⁰ 4 CCR 723-3 of the Rules Regulating Electric Utilities.

²¹ Rule 3102(c), 4 CCR 723-3.

²² Rule 3102(d), 4 CCR 723-3.

²³ Rule 3102(b)(IV), 4 CCR 723-3.

25. Finally, the Commission is obliged to independently consider and determine matters affecting the public interest.²⁴

E. Discussion

1. Hearing

26. Because the Joint Application is unopposed, it may be considered without a hearing pursuant to § 40-6-109(5), C.R.S., and Rule 1403.²⁵ As noted above, the hearing was vacated because the Application is unopposed. Accordingly, the Application shall be decided without a hearing.

2. Present and Future Need

a. Reliability

27. Thomas W. Green testified that the primary objective of the Northern Greeley Project is to improve reliability of the existing system by replacing the existing 44 kV system with higher voltage transmission facilities.²⁶ The 44 kV system “is one of the oldest transmission assets owned by Public Service, with some of the infrastructure dating back to the early 1900s.”²⁷ According to Mr. Green, the existing 44 kV system “is experiencing reliability issues due to aging transmission infrastructure and increasing customer demand for electricity.”²⁸

²⁴ Decision No. C12-1107 issued in Proceeding No. 11A-833E on September 24, 2012 at 9 (¶ 31) (citing *Caldwell v. PUC*, 692 P.2d 1085, 1089 (Colo. 1984)).

²⁵ 4 CCR 723-1.

²⁶ Direct Testimony of Thomas W. Green at 15:4-11.

²⁷ *Id.* at 16:6-8.

²⁸ *Id.* at 15:7-8.

28. Mr. Green further testified that the existing 44 kV system is fed radially from the 115 kV system in and around Greeley in only three places and operated as three radial transmission branches, rather than as a network.²⁹ A substation that is served radially has a single transmission source, whereas a networked substation is served by at least two points of transmission service.³⁰ According to Mr. Green, “[n]etwork transmission service increases reliability to the distribution substations by allowing a single transmission element to be taken out of service, either scheduled for forced, without interrupting transmission service to the substations.”³¹ In PSCo’s existing 44 kV system:

[s]ince the loads are served radially, a disturbance on any of the lines directly results in loss of the entire customer load served by that line. If one of the radial lines is out of service, either for maintenance or due to an outage, the Company has some alternative configuration options to connect the remaining 44 kV lines temporarily to serve all the loads. However, operating the system in those configurations during high load conditions places more stress on the remaining 115/44 kV autotransformers and remaining 44 kV system elements. Our analysis indicates that as load continues to grow, not only will a connection contingency result in a loss of customer load, but we will also lose the ability to connect them back in.³²

29. According to Mr. Green, these issues have contributed to PSCo’s customers in Greeley experiencing “more system interruptions for longer durations than the rest of the Public Service system.”³³ Upgrading the system as proposed in the Application will reduce these outages.³⁴ It will also reduce the requirement for PSCo to purchase specialized replacement equipment, as the 44 kV voltage is no longer an industry standard.

²⁹ *Id.* at 16:10-11, 15-16.

³⁰ *Id.* at 21:12-15.

³¹ *Id.* at 21:15-18.

³² *Id.* at 17:2-11.

³³ *Id.* at 17:12-13.

³⁴ *Id.* at 17:14-16.

b. Additional Load

30. Mr. Green testified that the Northern Greeley Project will also “increase [PSCo’s] ability to serve additional electrical load in the future.”³⁵ The retail load in the Greeley area has grown “approximately two percent per year for the last five years.”³⁶ The technical studies performed for the Application revealed that the 2 percent retail growth rate coupled with an additional 6.5 MW load from an industrial customer could cause the 44kV system to reach capacity.³⁷ The technical studies revealed that the 95 MW capacity of the existing system could be reached before 2026.³⁸

31. Oil and gas exploration has increased in northeast Colorado over approximately the last five years. Mr. Green states that during that period, PSCo has received “multiple inquiries and requests for electric load interconnections from oil and gas entities.”³⁹ According to Mr. Green, these operations typically require between 6 MW to 60 MW per facility.⁴⁰

32. Mr. Green concludes that the Northern Greeley Project is necessary to increase the load-serving capacity of PSCo’s system in and around the Greeley area. The Northern Greeley Project would increase the load-serving capacity of PSCo’s system in the region by 120 MW.⁴¹ According to Mr. Green, it would serve “not only the load growth associated with retail forecasts, but also loads associated with the oil and gas industry.”⁴²

³⁵ *Id.* at 15:14.

³⁶ *Id.* at 19:12-13.

³⁷ *Id.* at 19:14-22.

³⁸ *Id.* at 30:21-31:3. *See also* Direct Testimony of Thomas W. Green, Attachment TWG-4 at 22.

³⁹ *Id.* at 20:13-14.

⁴⁰ *Id.* at 20: 8-10.

⁴¹ *Id.* at 21:1-4.

⁴² *Id.* at 15:15-16.

c. Coordination with Other Transmission Plans

33. Finally, Mr. Green testified that the Northern Greeley Project will coordinate with other transmission plans that will establish another high voltage path to the Denver metro load center as part of the backbone system.⁴³ Mr. Green cites two other projects in particular: (a) Tri-State Generation and Transmission Association Inc.'s Southwest Weld Expansion Project (SWEP) that will build a 115/230 kV transmission system roughly between Ft. Lupton and Kersey, Colorado; and (b) PSCo's preliminary Southern Greeley Area Plan (Southern Greeley Project) that proposes to build 230 kV transmission lines between the Weld and Rosedale substations and the Rosedale and Milton substations.⁴⁴ According to Mr. Green, "SWEP will allow Public Service to evaluate opportunities for transferring some of the loads served by the 44 kV transmission system in the vicinity of that project,"⁴⁵ and the Northern Greeley Project proposed in the Application could interconnect with the Rosedale substation in the Southern Greeley Project and thereby create a 230 kV "loop" around the City of Greeley.⁴⁶

3. Transmission Noise and Magnetic Field Mitigation

34. PSCo also states that the transmission lines will be built to satisfy Commission requirements for transmission noise and magnetic fields specified in Rules 3206(e) and (f).⁴⁷ Specifically, Cherokee M. Gonzales testified that PSCo's recommended audible noise design for the Northern Greeley Project transmission lines results in a maximum audible noise level of 48.5 A-weighted decibels (dBA) at 25 feet outside the edge of the right of way (ROW), which is

⁴³ *Id.* at 12:15-20; 15:19-22.

⁴⁴ *Id.* at 22:14-23:9.

⁴⁵ *Id.* at 22:21-22 and 23:1.

⁴⁶ *Id.* at 23:10-15.

⁴⁷ 4 CCR 723-3.

below the 50 dBA threshold established under Rule 3206(f)(II).⁴⁸ Ms. Gonzales also testified that PSCo's field modeling shows a maximum magnetic field level that could be experienced under design conditions at the edge of the transmission ROW of 135.5 milligauss (mG), which is below the threshold of 150 mG established under Commission Rule 3206(e)(III).

35. In its Application, PSCo states that the requested findings of reasonableness of magnetic fields and audible noise are limited to the proposed transmission lines. According to PSCo, the locations of the substations proposed in the Application have not been finalized and "models of [substation noise and magnetic fields] cannot be performed until final substation siting is complete."⁴⁹

a. Audible Noise

36. Ms. Gonzales testified that PSCo will use seven of the eight techniques proposed in Rule 3102(c) for mitigating noise in a cost-effective manner. PSCo will employ larger, high-quality conductors, corona-free attachment hardware, a wide phase spacing and longer insulators, careful packaging and handling of the conductor, industry-standard construction techniques, and a line tension that will cost-effectively mitigate noise. The only technique that PSCo will not use is bundling of conductors, which it deems unnecessary given its computer modeling indicates that the Northern Greeley Project will comply with noise requirements established by Rule 3206(f)(II).

37. The model used by PSCo to estimate the audible noise is the Corona and Field Effects Program, Version 3.1 (CFEP). Ms. Gonzales testified that PSCo has used that model to

⁴⁸ Direct Testimony of Cherokee M. Gonzales at 21:1-17. *See also* Attachment CMG-3 (reporting results of audible noise-modeling program for the section of the project); Attachment CMG-4 (same); Attachment CMG-5 (same); Attachment CMG-6 (same); and Attachment CMG-7 (same).

⁴⁹ Application at 10.

estimate audible noise in previous applications that have been approved by the Commission.⁵⁰ Ms. Gonzales further testified that the program “is considered industry standard and is the best noise modeling resource I am aware of that is widely available to utilities.”⁵¹

38. As noted above, for the three new transmission lines proposed in the project, the CFEP predicts that the noise levels at the edge of the ROW plus 25 feet will be a maximum of 48.5 dB(A).⁵² This predicted maximum noise level is in wet weather, which produces the highest noise levels.⁵³ This noise level is below the maximum identified in Rule 3206(f)(II) as reasonable.⁵⁴

b. Magnetic Field

39. Ms. Gonzales also testified that PSCo will use some of the five prudent avoidance measures to reduce exposure to magnetic fields created by the project at a reasonable cost identified in Rule 3102(d). For example, PSCo is proposing an ROW width that “is more than sufficient to support the lines and to keep magnetic fields . . . within reasonable levels based on Commission Rules and industry standards.”⁵⁵ PSCo will also use reverse phasing of conductors and a three to five foot “buffer” for structures “above standard clearances.”⁵⁶

40. PSCo used the CFEP to model the magnetic field level that will be experienced under the design conditions at the edge of the transmission ROW at a height of one meter above

⁵⁰ Direct Testimony of Cherokee M. Gonzales at 17:4-9 (citing Proceeding Nos. 14A-0287E and 16A-0117E).

⁵¹ *Id.* at 17:12-13.

⁵² *Id.* at 21:1-17. *See also* Attachment CMG-3 (reporting results of audible noise-modeling program for different sections of the project); Attachment CMG-4 (same); and Attachment CMG-5 (same).

⁵³ *Id.* at 21:13-17. *See also* Attachment CMG-3.

⁵⁴ 4 CCR 723-3.

⁵⁵ Direct Testimony of Cherokee M. Gonzales at 24:18-20.

⁵⁶ *Id.* at 24:21-25:2; 25:9-12.

the ground, as required by Rule 3206(e).⁵⁷ The “design conditions” modeled by PSCo were: (a) average normal loading (25 percent of phase conductor(s) capacity); (b) maximum normal loading (50 percent of phase conductor(s) capacity); (c) maximum rating of the conductor (100 percent of phase conductor(s) capacity).⁵⁸ As noted above, the CFEP predicts that the magnetic field levels at the edge of the ROW at a height of one meter will be a maximum of 135.5 mG,⁵⁹ which is below the maximum identified in Rule 3206(e)(III) as reasonable.⁶⁰ This was under the design condition of loading at the maximum rating of the conductor (modeled design condition “c” above).

4. Property

41. PSCo does not yet own the property rights necessary to build the Northern Greeley Project. Instead, PSCo states that it “will identify the specific property rights to be purchased in fee or easement pending Commission CPCN approval and final design specifications.”⁶¹ PSCo also states that it will comply with the National Environmental Policy Act “by applying for a categorical exclusion or Environmental Assessment from WAPA for an interconnection at their Ault Substation.”⁶² PSCo further promises to file an application for an “Areas & Activities of State Interest” permit with Weld County pursuant to § 24-65.1-501, C.R.S.⁶³ Finally, PSCo states that it: (a) has “notified all affected local governments of its plans

⁵⁷ *Id.*, Attachment CMG-3 (reporting results of magnetic field-modeling program for the section of the project); Attachment CMG-4 (same); Attachment CMG-5 (same); Attachment CMG-6 (same); and Attachment CMG-7 (same).

⁵⁸ Direct Testimony of Cherokee M. Gonzales at 26:17-21.

⁵⁹ *Id.* at 26:21-27:3. *See also* Attachment CMG-3; Attachment CMG-4; Attachment CMG-5; Attachment CMG-6; and Attachment CMG-7.

⁶⁰ 4 CCR 723-3.

⁶¹ Application at 11.

⁶² *Id.* at 10.

⁶³ *Id.* at 10-11.

for the Northern Greeley project prior to filing through its most recent Rule 3627 Plans and Rule 3206 Reports;” and (b) will hold at least one open house prior to submitting its applications for permits, and will mail notifications to landowners in the Northern Greeley Project area.⁶⁴

5. Cost

42. The total estimated cost of the Northern Greeley Project is \$65 million, which is comprised of the following costs:

<u>Category of Cost</u>	<u>Estimated Cost (in millions)</u>
Siting and Land Rights Permitting / Acquisition	\$5
Substation Costs: (Total = \$24 million)	
Ault Substation Modification / Decommissioning	\$4
New Husky Substation	\$13
New Graham Creek Substation	\$4
Cloverly Substation Modifications	\$3
Transmission Line Costs: (Total = \$36 million)	
Ault-Husky	\$9
Husky-Graham Creek	\$7.5
Graham Creek-Cloverly	\$17.2
Transmission Line Decommissioning Costs	\$2.3
Northern Greeley Project Total	\$65

43. According to Mr. Green, this estimate is based on “cost-per-mile indicators of past projects, average unit costs, and recent 2016 material, overhead, and labor rates.”⁶⁵ Mr. Green also testifies that the individual estimates that make up the overall estimate are “high-level scoping estimates, which are the best estimates that the Company is able to provide prior to

⁶⁴ *Id.* at 11.

⁶⁵ Direct Testimony of Thomas W. Green at 48:5-6.

completing detailed engineering and final route selection.”⁶⁶ As a result, Mr. Green states that the final cost of the Northern Greeley Project could vary from the \$65 million estimate by plus or minus 30 percent.

6. Alternatives

44. The Northeast Colorado Subcommittee (NECO) of the Colorado Coordinated Planning Group (CCPG) performed a study to identify and assess the alternatives for rectifying the reliability issues experienced in recent years by the transmission system in and around the City of Greeley. NECO’s members included all interested stakeholders including representatives from transmission providers that own “bulk electric systems” in the Colorado Counties of Weld, Morgan, Adams, Washington, Logan, Sedgwick, Phillips, and Yuma, as well as representatives from Staff and the OCC.⁶⁷ PSCo’s proposal in the Application is based on NECO’s “Northern Greeley Area Transmission Plan System Impact Study Report” dated February 3, 2017 (NECO’s Report), which was the end-product of NECO’s study.

a. Alternatives Considered but Eliminated Before an In-Depth Study

45. The alternative projects initially considered but eliminated from the study scope by NECO fall into three categories: (a) changing the operational configuration of the existing 44 kV system from a radial to a networked or looped system; (b) rebuilding the existing 44 kV system to a higher voltage, but maintaining the radial configuration; and (c) upgrading the existing 115 kV system that sources the 44 kV system.⁶⁸

⁶⁶ *Id.* at 48:7-9.

⁶⁷ See Direct Testimony of Thomas W. Green, Attachment TWG-4 at 6: <https://doc.westconnect.com/Documents.aspx?NID=16314> (NECO Study Group Scope).

⁶⁸ Direct Testimony of Thomas W. Green at 31:18-22. See also *id.*, Attachment TWG-4 at 22.

46. NECO eliminated the first alternative for two reasons. First, its preliminary assessment indicated that it would increase the load-serving capability of the system by about 12 MV (from 95 MV to 107 MV), which was deemed relatively insignificant. Second, if the existing kV system was transformed into a network,

the capability of the remaining autotransformers and some transmission lines is not adequate to serve the area loads if there were to be an outage of one of the 115/44 kV autotransformers. . . . Therefore, under those conditions, the loads would be at an even greater risk than if the system was operated radially.⁶⁹

47. NECO ruled out the second alternative because “it would not resolve the radial nature of the transmission and therefore would be difficult to implement without customer outages.”⁷⁰ NECO also deemed it a more expensive option.⁷¹

48. NECO eliminated the third category of alternatives because they did not replace the 44 kV transmission lines, which is a primary objective of the Northern Greeley Project.⁷²

b. Alternatives Studied by NECO

49. NECO performed an in-depth study of five alternatives to accomplish the goals of the Northern Greeley Project. They were:

- a) Alternative 1: The project as proposed by PSCo in the Application;
- b) Alternative 2: The project as proposed by PSCo in the Application with the addition of a single-circuit, 115 kV line from Graham Creek to Public Service’s Weld Substation;
- c) Alternative 3: The project as proposed by PSCo in the Application with the addition of a single-circuit, 115 kV line from Graham Creek to Public Service’s Greeley Substation;
- d) Alternative 4: Construct a new Greeley South Substation; and

⁶⁹ Direct Testimony of Thomas W. Green at 32:5-9. *See also id.*, Attachment TWG-4 at 27.

⁷⁰ Direct Testimony of Thomas W. Green at 32:16-18. *See also id.*, Attachment TWG-4 at 27.

⁷¹ Direct Testimony of Thomas W. Green, Attachment TWG-4 at 27.

⁷² Direct Testimony of Thomas W. Green at 33:3-8. *See also id.*, Attachment TWG-4 at 27-28.

- e) Alternative 5: Interconnect and energize local gas-fired generation from either the University of Northern Colorado 69 MW facility or the Thermo Monfort 32 MW facility.⁷³

50. Alternative 1 was deemed by NECO to meet all of the Project's objectives of improving system reliability by eliminating portions of the 44 kV system, providing the ability to accommodate future load growth and generation resources, and aligning with other ongoing transmission projects and studies in the northern Colorado area.⁷⁴

51. NECO eliminated Alternatives 2 and 3 because they are expansions of Alternative 1 and thus, while they meet all of the Project's objectives, they are not the lowest cost options. Instead, NECO determined that Alternative 2 and/or 3 can be added in the future as the need arises.⁷⁵

52. NECO rejected Alternative 4 because while it "potentially provide[s] future reliability improvements to the Greeley 115 kV system, it fails to satisfy the reliability and load serving capabilities of the 44 kV system, and does not allow for load growth north of Greeley." NECO concluded, therefore, that Alternative 4 does not satisfy all of the Project's alternatives.⁷⁶

53. Finally, NECO eliminated Alternative 5 because it does not meet the Project's objectives of improving the reliability and load-serving capabilities of the 44 kV system.⁷⁷

54. Based on the foregoing, NECO determined that Alternative 1 is the best option and CCPG accepted the report and its conclusions.⁷⁸

⁷³ Direct Testimony of Thomas W. Green, Attachment TWG-4 at 29.

⁷⁴ *Id.* at 32.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ Direct Testimony of Thomas W. Green at 35:20-36:4.

F. Findings and Conclusions

1. The Northern Greeley Project

55. The undersigned ALJ concludes that PSCo has provided substantial evidence of the present and future need for the proposed Northern Greeley Project and that existing facilities are not reasonably adequate and available to meet that need.⁷⁹ Specifically, PSCo has established that the Northern Greeley Project will address a current need to improve the reliability and load-serving capacity of the existing transmission system in and around Greeley. As noted above, Mr. Green testified that PSCo's customers in Greeley experience "more system interruptions for longer durations than the rest of the Public Service system."⁸⁰

56. PSCo has also established that the Northern Greeley Project will provide the capacity to serve the anticipated load of the Greeley area in the future. As noted above, the technical studies revealed that the 95 MW capacity of the existing system could be reached before 2026.⁸¹ PSCo has established that the Project will provide the capacity to better serve both residential and commercial loads in the future.

57. PSCo has also established that the Northern Greeley Project will allow PSCo to coordinate with other transmission plans and thereby expand PSCo's backbone transmission system from the Greeley area to Denver. The Northern Greeley Project will allow PSCo to coordinate with SWEP and the Southern Greeley Project. PSCo plans to eventually provide a 230 kV path from Ault to the Denver metro area, and the project is a key component of that plan.

⁷⁹ Decision No. C13-1549 issued in Proceeding No. 12A-1264ST on December 18, 2013 at 5 (¶13) (citations omitted). *See also* Decision No. R14-1405 issued in Proceeding No. 14A-0287E on November 25, 2014 at 24 (¶100).

⁸⁰ Direct Testimony of Thomas W. Green at 17:12-13.

⁸¹ *Id.* at 30:21-31:3. *See also* Direct Testimony of Thomas W. Green, Attachment TWG-4 at 22.

58. In addition, the undersigned ALJ concludes that Public Service adequately evaluated alternatives as shown in the NECO Report. The members of NECO represent several different stakeholder interests. After a comprehensive study, those members reasonably concluded that the proposal contained in the Application is the best alternative to address a present and future need that the existing system cannot accommodate.

59. Finally, the fact that the \$65 million projected cost of the Northern Greeley Project is a “high-level scoping estimate[]” that could vary by plus or minus 30 percent is somewhat concerning. However, the OCC has reviewed, and conducted discovery on, these costs, and is satisfied that they are reasonable under the circumstances. For this reason, and because PSCo complied with Rule 3102(b)(IV) by itemizing the costs based on land costs, substation costs, and transmission line costs, the undersigned ALJ finds and concludes that PSCo has carried its burden on this question at this stage.⁸² However, due to the fact that the identified cost is a “high-level scoping estimate,” no amount of expenditures is deemed prudent at this stage.⁸³

60. Based on the record and for the reasons discussed, the undersigned ALJ concludes that Public Service has met its burden of proof. The present or future public convenience and necessity requires or will require construction and operation of the Northern Greeley Project.

2. Transmission Magnetic Fields

61. As noted above, Commission Rule 3102(d) requires a utility seeking a CPCN for transmission facilities to “describe its actions and techniques relating to prudent avoidance with respect to planning, siting, construction, and operation of the proposed construction or

⁸² Rule 3102(b)(IV), 4 CCR 723-3.

⁸³ See Decision No. R14-1405 issued in Proceeding No. 14A-0287E on November 25, 2014 at 50 (¶ 204).

extension.”⁸⁴ Rule 3102(d) defines “prudent avoidance” as “the striking of a reasonable balance between the potential health effects of exposure to magnetic fields and the cost and impacts of mitigation of such exposure.”⁸⁵ Under Commission Rule 3206(e)(III), proposed magnetic field levels of 150 mG and below are deemed reasonable and need not be mitigated to a lower level. Proposed magnetic field levels above 150 mG are subject to further review.⁸⁶

62. The evidence provided by PSCo is that the projected transmission magnetic field levels are below 150 mG during average normal loading, maximum normal loading, and maximum loading of the conductors for the 230 kV transmission corridor. The evidence and testimony establish that PSCo’s plan results in a reasonable level of magnetic fields. The undersigned ALJ concludes that PSCo meets the requirements of Rule 3102(d) with respect to the transmission lines, because its proposed transmission plan strikes a reasonable balance between potential health effects of exposure to magnetic fields and the cost and impacts of mitigating of such exposure.

3. Noise of Transmission Lines

63. Section 25-12-103(12)(a), C.R.S., provides that: “[t]he [Commission] may determine, while reviewing utility applications for [CPCNs] for electric transmission facilities, whether projected noise levels for electric transmission facilities are reasonable.” Towards that end, Commission Rule 3206(f) requires a utility to include in its CPCN application the projected level of noise radiating 25 feet beyond the property line or ROW.⁸⁷ Rule 3206(f)(I) further requires a utility to provide “computer studies which show the potential level of noise expressed

⁸⁴ 4 CCR 723-3.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ 4 CCR 723-3.

in db(A)” and that are “the output of utility standard programs . . . and use the assumption that the proposed facility is operating at its highest continuous design voltage under L₅₀ rain conditions.”⁸⁸ Rule 3206(f)(II) identifies the maximum levels of noise that are deemed reasonable and need not be mitigated to a lower level, which are 50 db(A) for residential, 55 db(A) for commercial, 65 db(A) for light industrial, and 75 db(A) for industrial.⁸⁹ Finally, Commission Rule 3102(c) requires a utility to describe in its application the cost-effective noise mitigation actions and techniques pertaining to planning, siting, construction, and operation of a proposed transmission line.⁹⁰

64. The undersigned ALJ finds that PSCo’s modeled noise levels for the transmission lines are below 50 db(A) at 25 feet beyond the ROWs in wet weather. The undersigned ALJ therefore concludes that PSCo has met its burden of proving that the proposed levels of noise at the edge of the ROWs for the transmission lines are reasonable pursuant to Rule 3206(f).⁹¹ The undersigned ALJ also concludes that PSCo has met its burden of describing the cost-effective noise mitigation that it plans to undertake with respect to the transmission lines and of providing computer studies showing the potential noise levels at the edge of the ROW and 25 feet beyond the ROW. Accordingly, PSCo has complied with Rule 3102(c).⁹²

4. Magnetic Fields and Audible Noise Caused by Substations

65. In the Application, PSCo states that it “is not requesting findings related to substation noise and fields in this filing because models of those scenarios cannot be performed

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

until final substation siting is complete.”⁹³ Mr. Green confirmed in his testimony that “the substations have not been fully designed yet because the siting is not complete.”⁹⁴ While Mr. Green went on to state that PSCo “will also make sure that noise and magnetic fields are reasonable for substations,”⁹⁵ no information required by the Commission’s rules cited above has been provided concerning noise levels or magnetic fields caused by the substations. Accordingly, the undersigned ALJ makes no findings or conclusions regarding the magnetic fields or the noise levels caused by the substations proposed in the Northern Greeley Project.⁹⁶

66. Because no such information has been provided, the grant of the requested CPCN is contingent upon PSCo providing to the Commission the information required by the statutes and rules addressing the reasonableness of the magnetic fields and noise caused by the substations noted above. The pleading shall be filed once the siting and planning of the substations has been finalized and the relevant studies completed.

67. In accordance with § 40-6-109, C.R.S., the undersigned ALJ transmits to the Commission the record of this proceeding, this Recommended Decision, and a Recommended Order.

II. ORDER

A. The Commission Orders That:

1. The Application for a Certificate of Public Convenience and Necessity for the Northern Greeley Area Transmission Plan Project (Application) filed by Public Service

⁹³ Application at 10.

⁹⁴ Direct Testimony of Thomas W. Green at 42:7-8.

⁹⁵ *Id.* at 42:6-7.

⁹⁶ *See* Application at 10.

Company of Colorado (PSCo) on March 9, 2017, is granted, consistent with the discussion above.

2. PSCo is granted a Certificate of Public Convenience and Necessity (CPCN) to construct and operate the Northern Greeley Area Transmission Plan Project, consistent with the discussion above.

3. The expected magnetic field values and audible noise values from the transmission lines proposed in the Application meet the conditions of the Commission Rules Regulating Electric Utilities, 4 *Code of Colorado Regulations* 723-3-3206(e)(III) and 3206(f)(III) and are therefore considered reasonable and need not be mitigated, consistent with the discussion above.

4. The grant of the Application and the CPCN is contingent upon PSCo providing to the Commission the information relevant to determining whether PSCo has complied with the statutes and rules concerning the reasonableness of the magnetic fields and noise caused by the new and modified substations proposed in the Application, consistent with the discussion above.

5. Proceeding No. 17A-0146E is closed.

6. This Recommended Decision shall be effective on the day it becomes the Decision of the Commission, if that is the case, and is entered as of the date above.

7. As provided by § 40-6-109, C.R.S., copies of this Recommended Decision shall be served upon the parties, who may file exceptions to it.

a) If no exceptions are filed within 20 days after service or within any extended period of time authorized, or unless the decision is stayed by the Commission upon its own motion, the recommended decision shall become the decision of the Commission and subject to the provisions of § 40-6-114, C.R.S.

b) If a party seeks to amend, modify, annul, or reverse basic findings of fact in its exceptions, that party must request and pay for a transcript to be filed, or the parties may stipulate to portions of the transcript according to the procedure stated in § 40-6-113, C.R.S. If no transcript or stipulation is filed, the Commission is bound by the facts set out by the administrative law judge and the parties cannot challenge these facts. This will limit what the Commission can review if exceptions are filed.

8. If exceptions to this Decision are filed, they shall not exceed 30 pages in length, unless the Commission for good cause shown permits this limit to be exceeded.

(S E A L)



THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

CONOR F. FARLEY

Administrative Law Judge

ATTEST: A TRUE COPY

A handwritten signature in cursive script that reads "Doug Dean".

Doug Dean,
Director