BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 20A-___E

IN THE MATTER OF THE VERIFIED APPLICATION OF BLACK HILLS COLORADO ELECTRIC, LLC FOR APPROVAL OF ITS TRANSPORTATION ELECTRIFICATION PLAN, READY EV, FOR PROGRAM YEARS 2021–2023 AND FOR RELATED TARIFF APPROVALS.

DIRECT TESTIMONY AND ATTACHMENTS OF

PATRICK GRANT GERVAIS

ON BEHALF OF

BLACK HILLS COLORADO ELECTRIC, LLC

May 8, 2020

SUMMARY OF THE DIRECT TESTIMONY OF PATRICK GRANT GERVAIS

Mr. Patrick Grant Gervais is employed by Black Hills Service Company, LLC as a Regulatory Analyst II. Mr. Gervais is responsible for the preparation of various electric rate and regulatory filings, proceedings, and other related matters in Colorado.

Mr. Gervais addresses the criteria and reasonableness of the Ready EV proposal to offer rebates for EVSE, including Level 2 and DCFC. The Company anticipates the rebates will cover the purchase and installation cost to residential customers of 50 percent, 100 percent for low-income customers, 30 percent to commercial customers, and 45 percent to governmental and non-profit customers. The Company will cap rebates provided for DCFC to four per year, given the high cost of these rebates.

Mr. Gervais explains that for low-income customers, the Company is providing greater rebate levels, as well as specific rebates for multi-unit dwellings, and governmental and non-profit entities that can support low-income EVSE needs. The Company is also earmarking 15 percent of the Ready EV annual budget specifically for low-income rebates.

Mr. Gervais explains the Company's proposal to designate EVSE as a permanent service for purposes of application of the distribution line extension tariff. This designation will qualify EVSE for Company provided construction allowances, lowering the cost to customers of connecting EVSE to the electric grid.

Mr. Gervais discusses the Company's plan to assess EV load impacts on a case-by-case basis through application of the distribution line extension tariff. Moreover, going forward, the Company will integrate forecasted EV demand into distribution system planning, and it will analyze EVSE usage profiles, locations, and customer responses to EV rates.

Mr. Gervais explains the Ready EV budget includes rebates, line extension costs, performance incentive, and program administration costs. The estimated budget is \$396,687 in year one, \$441,014 in year two, and \$506,008 in year three. The Company will cap the estimated budget in each plan year by 150 percent of estimated expenses. The Company will also amortize the actual costs of rebates and legal/consulting expenses over a three-year period.

Mr. Gervais calculated an estimated customer bill impact of Ready EV. In 2022, a typical residential customer's monthly bill will potentially increase 0.19%, from \$100.88 to \$101.08. A typical small general service customer's monthly bill will increase 0.19%, from \$363.22 to \$363.93.

The Company will recover Ready EV costs annually through the existing DSMCA, as a percent of a customer's total bill. The Company will file an annual report on Ready EV costs, effectiveness, and results in April, coordinated with the filing of the April DSM report.

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Attachments

Hearing Exhibit 105, Attachment PGG-1	Ready EV Plan Budget
Hearing Exhibit 105, Attachment PGG-2	Customer Bill Impact
Hearing Exhibit 105, Attachment PGG-3	Red-Line Tariffs
Hearing Exhibit 105, Attachment PGG-4	Clean Tariffs

1000	Air Quality Control Commission
AQUE	Advanced Metering Infrastructure
AFG	Applied Economics Group
BHC	Black Hills Corporation
BHSC	Black Hills Service Company LLC
BHEAD	Black Hills Energy Assistance Program
Black Hills or Company	Black Hills Colorado Electric, LLC
CIS :	Customer Information System Dlus
	Class Cost of Sorvice Study
CCOSS Communication Strategy	Customer Communication and Education Strategy
DCEC	Direct Current Fact Chargers
DEFC	Demend Side Management Cost Adjustment
EV	Electric Vehicle
EV EV rotos	Electric Venicle
EVIALES	Electric Vehicle Supply Equipment
	Electric Venicle Supply Equipment
FERC	Federal Energy Regulatory Commission
	Greenhouse gas
	Internal Revenue Service
KW	Kilowatt
LEAP	Low-Income Energy Assistance Program
LGS-S	Large General Service – Secondary
LGS-SEV	Large General Service Secondary EV rate schedule
LPS	Large Power Service
MDMS or MDM	Meter Data Management System
mTRC	Modified Total Resource Cost Test
NEBs	Non-Energy Benefits
NOPR	Notice of Proposed Rulemaking
РСТ	Participant Cost Test
PIM	Performance Incentive Mechanism
PUC or Commission	Colorado Public Utilities Commission
PSCo	Public Service Company of Colorado
Ready EV or Ready EV Plan	Company's first Transportation Electrification Plan
Ready EV programs	design elements of the Ready EV Plan
RIM	Rate Payer Impact Measure
RS-EV	Residential EV rate schedule
RS-1	Residential service rate schedule
SCADA	Supervisory Control and Data Acquisition
SGS-N or SGS-D	Small General Service
SGS-EV	Small General Service EV rate schedule
TEP	Transportation Electric Plan
TOD rates	time-of-day rates
WACC	weighted average cost of capital
ZEV	zero emission vehicle

GLOSSARY OF ACRONYMS AND DEFINED TERMS

1		DIRECT TESTIMONY OF PATRICK GRANT GERVAIS				
2						
3		I. <u>INTRODUCTION AND BACKGROUND</u>				
4	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.				
5	A.	My name is Patrick Grant Gervais; however, I commonly go by Grant Gervais. My				
6		business address is 1515 Arapahoe Street, Tower 1 - Suite 1200, Denver, Colorado 80202.				
7	Q.	BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?				
8	A.	I am employed by Black Hills Service Company, LLC, a wholly-owned subsidiary of Black				
9		Hills Corporation ("BHC"), which provides services to BHC subsidiaries including Black				
10		Hills Colorado Electric, LLC ("Black Hills" or the "Company"). I am a Regulatory				
11		Analyst II.				
12	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING?				
13	A.	I am testifying on behalf of Black Hills.				
14						
15		II. STATEMENT OF QUALIFICATIONS				
16	Q.	WHAT ARE YOUR DUTIES AND RESPONSIBILITIES IN YOUR CURRENT				
17		POSITION?				
18	A.	I am responsible for the preparation of various electric rate and regulatory filings,				
19		proceedings, and other related matters in Colorado.				
20	Q.	PLEASE OUTLINE YOUR EDUCATIONAL AND PROFESSIONAL				
21		BACKGROUND.				
22	A.	A summary of my education, employment history and experience is provided in Appendix				
23		А.				

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE A PUBLIC UTILITIES COMMISSION?

3 A. Yes, but not before the Colorado Public Utilities Commission ("PUC" or "Commission").

- 4 I provide a list of my prior testimonies in Appendix A.
- 5
- 6

III. <u>PURPOSE OF TESTIMONY</u>

7 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I support the Company's proposed Transportation Electrification Plan ("TEP"), known as
"Ready EV" or the "Ready EV Plan." My testimony will address the reasonableness of
the Company's proposed rebates, distribution extension policy, potential impacts to the
Company's distribution system, overall project costs and revenues, how the Company
proposes to recover costs of the Ready EV Plan, proposed annual reporting requirements,
and proposed tariff sheets.

14 Q. WHAT IS THE SCOPE OF THE READY EV PLAN?

A. Overall, the Ready EV Plan contains the following programs: (1) EV charging rates; (2) an Electric Vehicle Supply Equipment ("EVSE") approach, (3) EVSE rebates, (4) fleet electrification programs, (5) low-income customer programs, (6) a revision to the Company's distribution line extension tariff, (7) a Customer Communication and Education Strategy, (8) an EV dealership engagement program, (9) an employee electric vehicle ("EV") engagement program, (10) a safety and reliability assessment, (11) plan metrics, (12) a Plan budget, and (13) stakeholder engagement.

22 Q. WHAT ASPECTS OF THE READY EV PLAN WILL YOU ADDRESS?

23 A. I will address the following:

1		• (3) EVSE rebates;
2		• (5) Low-income customer programs;
3		• (6) Distribution line extension tariff revision;
4		• (12) components of the Plan budget; and
5		• (10) Safety and reliability
6	Q.	HOW IS YOUR TESTIMONY ORGANIZED?
7	A.	In Section IV, I address the justification for the rebate structure that the Company proposes
8		in order to support widespread transportation electrification in Black Hills' service
9		territory.
10		In Section V, I address the Company's proposed EV distribution extension policy.
11		In Section VI, I address potential impacts to the safety and reliability of Company's
12		distribution system as a result of implementing the Ready EV Plan.
13		In Section VII, I address projected costs and revenues of implementing the Ready EV Plan.
14		In Section VIII, I address how the Company proposes to recover costs associated with
15		implementing the Ready EV Plan.
16		In Section IX, I address the Company's planned reporting requirements.
17	Q.	ARE YOU SPONSORING ANY ATTACHMENTS?
18	A.	Yes. I am sponsoring the following attachments:
19		• Hearing Exhibit 105, Attachment PGG-1 – Ready EV Plan Budget
20		• Hearing Exhibit 105, Attachment PGG-2 – Customer Bill Impact
21		• Hearing Exhibit 105, Attachment PGG-3 –Red-Line Tariffs
22		• Hearing Exhibit 105, Attachment PGG-4 – Clean Tariffs

1		IV. <u>EV REBATES</u>
2		A. EV REBATES OVERVIEW
3	Q.	PLEASE SUMMARIZE HOW BLACK HILLS PRIMARILY PROPOSES TO
4		SUPPORT WIDESPREAD TRANSPORTATION ELECTRIFICATION IN ITS
5		SERVICE TERRITORY IN COLORADO.
6	А.	As described by Company witness Mr. Harrington, the Company will primarily employ
7		four approaches under the Ready EV Plan to encourage the widespread adoption of EVs in
8		Colorado:
9		1. New rebates for EVSE;
10		2. New rates for EV charging;
11		3. Distribution Line Extension policy for EVSE; and
12		4. A Customer Communication and Education Strategy
13	Q.	WHY IS A REBATE PROGRAM APPROPRIATE TO ENCOURAGE
14		WIDESPREAD TRANSPORTATION ELECTRIFICATION IN THE COMPANY'S
15		SERVICE TERRITORY?
16	A.	Company witness Aaron Carr's testimony explains why the Company decided on a rebate
17		approach to encourage EV adoption as part of the Ready EV Plan rather than other
18		methods. My testimony discusses the types of rebates to be offered to the Company's
19		customers and the values of those rebates. I also explain that the Company's distribution
20		extension policy will assist potential EVSE owners.

Q. WHICH TYPE OF CHARGERS DOES THE COMPANY PROPOSE TO OFFER REBATES?

A. The Company proposes to offer rebates for Residential Level 2, Public Level 2, and Direct
Current Fast chargers ("DCFC"). Black Hills' customers, regardless of class, installing
one of these chargers will be eligible to receive a rebate. The Company is partnering with
ChargePoint and Enel X for EVSE and advisory services for potential EVSE owners.
Company witness Mr. Carr details why the Company has decided to partner with these
charging manufacturers. Mr. Carr also describes the chargers from these providers that
will be eligible for rebates under the Ready EV Plan.

10 Q. WHAT ARE THE SPECIFIC REQUIREMENTS FOR A CUSTOMER TO 11 RECEIVE A REBATE?

12 A. In order to receive a rebate, a customer must meet the following requirements: 1) be a current customer of the Company, 2) purchase an eligible EVSE, 3) allow the EVSE 13 14 vendors to share EV charging data with the Company, 4) for residential customers, enroll 15 in the Company's EV specific rates, 5) attest to the use of a licensed electrician to install 16 the EVSE if applicable, 6) provide the Company all receipts for proof of purchase and 17 installation, and 7) complete and submit the applicable rebate form to the Company. 18 Additionally, for public Level 2 and DCFCs, the applicant will also need to agree to: 19 1) own, operate, and maintain a station for at least 5 years and 2) incorporate Black Hills 20 Energy branding on the EVSE.

1 Q. WHAT IS THE REBATE AMOUNT FOR EACH CHARGER TYPE?

A. Based on a detailed assessment process, which is described in the next section of my Direct
 Testimony, the Company has determined that the below rebate amounts are reasonable to
 encourage EV adoption while limiting rate impacts to non-EV owners.

5

Table PGG – 1: EVSE Rebates

Rebate Type	Rebate Maximum Amounts
Residential Level 2	\$500 per port
Residential/ Low-Income Level 2	\$1,000 per port
Business/ Multi-unit dwelling Level 2	\$2,000 per port
Governmental/Non-Profit Level 2	\$3,000 per port
DCFC Level 3	\$35,000 per port

6

7

B. REASONABLENESS OF THE REBATES

8 Q. HOW DID THE COMPANY ESTABLISH THESE REBATE AMOUNTS AND 9 DETERMINE THEIR REASONABLENESS?

A. To establish these rebate amounts, the Company first examined the best practices of other utilities and compiled the rebate amounts that are commonly provided by utilities nationwide. Second, the Company evaluated how much of the equipment and installation cost the rebates will typically cover for customers. The objective of Ready EV is to encourage the widespread adoption of EVs; thus, the rebates need to provide enough incentives for customers.

16 The Company has studied the rebates offered by other utilities to determine industry 17 best practices. Through this process, the Company has determined that the proposed rebate 18 amounts provided above are reasonably comparable to the rebates offered by other public 19 utilities around the country, as shown in Table PGG-2 below. The Company believes that

- 1 offering rebates that are comparable to rebates offered by other utilities is a reasonable way
- 2 to measure the appropriateness of the rebates.

3

Program Details Utility CMS^1 Residential: \$500 Level II: up to \$5,000; limit 200 DCFC: Up to \$100,000 Baltimore Gas and Electric² Residential: \$300 towards charger Multi-Family: 50% up to \$5,000 per port DCFC: \$15,000 Maximum of \$25,000 per site Austin Energy³ Residential: Up to \$1200 rebate Workplace: up to \$4,000 Rocky Mountain Power⁴ Residential: \$200 Level II: up to \$1,500 DCFC: up to \$42,000 AEP Ohio⁵ Level II: between \$5,000 and \$10,000 per port DCFC: between \$50,000 and \$100,000 per station.

Table PGG – 2: Other Utility EVSE Rebates

The Company also believes that the rebates should cover a meaningful portion of a customer's EV charger and installation costs to encourage EV adoption. In order to determine how much of the equipment and installation cost the rebates will cover, the Company first estimated total equipment and installation cost for the average customer by charger type around the country. The Company anticipates the residential Level 2 charger and installation to cost approximately \$1,000. The standard residential rebate will

¹ <u>https://www.consumersenergy.com/residential/programs-and-services/electric-vehicles/level-2-charging-station-rebates; https://www.consumersenergy.com/residential/programs-and-services/electric-vehicles/home-charger-rebates; https://www.consumersenergy.com/residential/programs-and-services/electric-vehicles/dc-fast-charger-rebates</u>

²<u>https://www.bge.com/SmartEnergy/InnovationTechnology/Pages/ElectricVehicles.aspx</u>

³ <u>https://ev.austinenergy.com/incentives</u>

⁴ <u>https://www.rockymountainpower.net/savings-energy-choices/electric-vehicles/utah-incentives.html</u>

⁵ <u>https://www.aepohio.com/save/business/ElectricVehicles/default.aspx</u>

therefore cover approximately 50% of the cost. For a low-income residential customer, the
rebate will cover approximately 100% of the cost. The Company anticipates a total of
\$16,000 for the installation and equipment for a dual port Level 2 charger. The Business
Level 2 rebate will cover approximately 25% of this cost, while the Governmental and
Non-Profit rebate will cover approximately 37.5% of the cost.

6 The cost of a DCFC can vary significantly depending on the site location and the 7 existing infrastructure. DCFCs require significant amounts of capacity which may or may 8 not be available. Thus, the existing infrastructure may require significant upgrades to 9 support DCFCs. It is difficult to estimate how much the cost the DCFC rebate will provide 10 at this time.

11 Q. HOW WILL THE COMPANY ASSESS WHETHER THESE REBATES LEVELS 12 ARE ACHIEVING THE DESIRED OBJECTIVES?

13 While the Company based these rebates on industry best practices by looking at the rebates A. 14 offered by other public utilities, the Company will need to assess how customers in 15 Southern Colorado respond to the proposed rebate structure after the Ready EV Plan is 16 rolled out. Therefore, the Company will monitor how customers respond to the rebates 17 and will propose adjustments to the rebate structure, if needed, to better support widespread 18 transportation electrification. If it is determined that customer participation is significantly 19 lower than expected, the Company may propose adjustments to the rebate amounts in a 20 future proceeding. As discussed in the testimony of Company witness Mr. Harrington, the 21 Company is also proposing a stakeholder engagement process to evaluate the Company's 22 Ready EV Plan. The Company may also work within the stakeholder engagement process 23 to change the rebate amounts during the first three-year term of the Ready EV Plan.

1		C. LOW-INCOME CUSTOMER ACCESS
2	Q.	HOW WILL THE REBATES REASONABLY BE EXPECTED TO PROVIDE
3		ACCESS FOR LOW-INCOME CUSTOMERS?
4	A.	C.R.S. § 40-5-107(2)(g) requires that the Commission consider whether Ready EV Plan
5		investments are:
6 7 8 9 10 11		Reasonably expected to provide access for low-income customers, in the totality of the utility's transportation electrification programs, which may include community-based and multi-family charging infrastructure, car share programs, and electrification of public transit, while giving due consideration to the effect on low-income customers.
12		In addition to all of the Ready EV programs, the Company has two proposals that
13		are specific to low-income customers. The first proposal is to provide greater rebates for
14		low-income residential customers, as compared other residential customers, as well as to
15		provide rebates for groups that provide access to EVs for low-income customers. The
16		second proposal is to earmark 15% from the Ready EV annual budget specifically for low-
17		income rebates in order to assure a reasonable level of funding.
18		First, the Company proposes to provide rebates for residential low-income
19		customers that will be twice the amount as those rebates provide to other residential
20		customers. As explained above, the proposed rebate for residential low-income customers
21		is at a level to cover approximately 100 percent of the costs of purchasing and installing an
22		EV charger for a residential low-income customer.
23		The Company also proposes rebates for governmental and non-profit entities,
24		including those that assist low-income customers. Many of these groups, such as schools
25		and low-income housing authorities, provide vital services to low-income customers.

Further, by providing rebates to multi-unit dwellings, low-income customers residing in
 these properties can benefit.

3 Second, the Company proposes to earmark 15% of the annual Ready EV Plan 4 budget specifically for low-income programs. The Company is proposing yearly budgets, 5 which reflect program costs that can vary as long as the overall annual budget is not 6 exceeded. The Company does not know how many applications for EV rebates it will 7 receive at this point. The Company's proposal to earmark funds for low-income customers 8 means that in any given year there will be dedicated funding available for low-income 9 customers. The Company will evaluate the reasonableness of Plan costs for each type of 10 customer and program during the Plan period in order to determine whether adjustments to 11 budgets are necessary in future TEPs.

12 Q. HOW WILL THE COMPANY DETERMINE WHICH ENTITIES ARE 13 GOVERNMENTAL OR NON-PROFIT?

A. Government entities and non-profit entities, typically designated as 501(c)(3) organizations
by the Internal Revenue Service ("IRS"), will need to confirm that they qualify during the
application process. Further, during the rebate application process, applicants claiming to
be 501(c)(3) or governmental entities may be asked by the Company to provide
documentation as proof of status. The Company may also independently verify an entity's
legal status with the IRS through public records.

20 Q. HOW WILL THE COMPANY DETERMINE IF AN APPLICANT QUALIFIES 21 FOR A LOW-INCOME REBATE?

A. Black Hills currently provides bill assistance to low-income customers through its Black
Hills Energy Assistance Program ("BHEAP"). To qualify for this program, a customer

1		must provide proof of eligibility for the state's Low-Income Energy Assistance Program
2		("LEAP"). Black Hills will utilize the same process it currently uses to enroll customers
3		in BHEAP to determine if a customer is eligible for the low-income rebate.
4		
5		D. DCFC REBATES
6	Q.	WHAT IS A DCFC AND WHERE ARE THEY GENERALLY LOCATED?
7	А.	DCFCs are direct-current fast chargers that are capable of charging EVs significantly faster
8		than Level 2 chargers. DCFCs typically have an energy demand of at least 50 kW. To
9		know where DCFCs are likely to be located, it is important to understand situations in
10		which an EV owner would want to charge their EV quickly. There are two situations in
11		which this is likely.
12		The first situation pertains to EV owners who do not have time for a long stop, and
13		need to get on the road quickly, such as when traveling along major highways through the
14		Company's service territory. Specifically, the Colorado Electric Vehicle Plan released by
15		Governor John Hickenlooper in 2018 identified fifteen transportation corridors throughout
16		Colorado that are necessary to support EV deployment. ⁶ Two of these corridors, I-25 and
17		US 50, go through the middle of the Company's service territory. As a result, the Company
18		has an important role to play in electrifying these transportation corridors in Colorado.
19		The second situation in which an EV owner would want to charge their EV quickly
20		is when they have a large number of EVs to charge, or their EV has a large battery to

⁶ <u>https://drive.google.com/file/d/1tY5p3xrjLLlvYO8JOc3nskL7zQ3ejGva/view</u> at page 3.

charge. This is a typical situation for fleet vehicles. DCFCs for fleets are typically located
 at the fleet's service center, wherever that may be.

Q. HOW WILL OFFERING REBATES FOR FAST CHARGERS SUPPORT WIDESPREAD TRANSPORTATION ELECTRIFICATION WITHIN THE COMPANY'S SERVICE TERRITORY?

6 A. Range anxiety is an area of concern for many potential EV owners. Increased EV charger 7 deployment is likely to allay range anxiety concerns of potential customers, which may 8 induce more people to "take the plunge." In addition, Pueblo's location along 9 transportation corridors, as defined by the Governor's Colorado Electric Vehicle Plan 10 means that deployment of EVSE will not just support those living in the Company's service 11 territory, but will also support EVs travelling through the Company's service territory and 12 the State's policy goals.

13 Q. TO WHAT EXTENT IS IT NECESSARY TO LIMIT THE NUMBER OF REBATES

14 BLACK HILLS WILL PROVIDE TO DCFCS DURING EACH PLAN YEAR?

A. Given the relatively high value of the DCFC rebate, it is possible for a small number of
DCFC projects to use the majority of the TEP budget. In order to limit this possibility, the
Company needs to establish a reasonable limitation on funds allocated for DCFC rebates.
The Company estimates there will need to be a total of six DCFCs by 2023. To meet this
forecast, the Company can limit the annual number of DCFC rebates given to four. If four
rebates per year are given, the Company will exceed its forecasted number of DCFCs of
six by 2023.

1Q.PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING EV2REBATES.

A. The Company's rebates cover the types of charging stations that EV owners may require
to charge their EVs. The Company's proposed rebate levels will pay for a meaningful
amount of the upfront cost involved in EVSE, and are comparable to rebates offered by
other utilities. The rebates for low-income, governmental entities, multi-unit dwellings,
and 501(c)(3) non-profit customers further reduce the barrier to entry for low-income
customers. I therefore recommend that the Commission approve the rebate levels
discussed above.

- 10
- 11

V. <u>EV CHARGER LINE EXTENSION POLICY</u>

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

A. In this section of my testimony I will discuss a change to the Company's distribution line
 extension policy, which is enshrined in tariff. Specifically, I propose to change the
 Company's current distribution line extension tariff to encourage EV adoption by
 specifically designating EVSE as permanent service.

17 Q. WHICH GROUP OF CUSTOMERS WILL THE CHANGE TO THE 18 DISTRIBUTION LINE EXTENSION TARIFF ASSIST?

A. The change to the distribution line extension tariff will assist Commercial Level 2 and
 DCFC customers. Changes are not necessary for residential customers, because the
 distribution line extension tariff is for the extension of distribution assets to a new premise,
 not currently interconnected to the Company's system. Residential chargers are either
 installed at homes that already take electric service from the Company or in new homes

under construction, which are already covered by the distribution line extension tariff. In
 either case, residential chargers are already covered by the current distribution line
 extension tariff.

WHAT IS THE CURRENT PROCESS FOR A COMMERCIAL CUSTOMER TO

4

Q.

5 **OBTAIN SERVICE FOR A NEW PREMISE FROM THE COMPANY?**

6 A. Commercial customers requesting interconnection to the Company's system for a new 7 premise provide the location, anticipated load, anticipated energy usage, and other 8 considerations for interconnection to the Company. The Company and customer then have 9 a site walk to verify the customer's service requirements. Once the site walk is complete, 10 the Company models the service requirements to determine the equipment necessary to interconnect the customer to the Company's system. The costs of the materials and labor 11 12 are then calculated to determine the interconnection costs. Concurrent with this process, 13 the Company evaluates the character of the commercial customer's business as either 14 permanent, indeterminate, or temporary service.

- Permanent customers are those that the Company is reasonably assured will be
 permanently in place and will generate continuous revenue to the Company to
 support the necessary investment. As an example, grocery stores fall into this
 designation.⁷
- Indeterminate customers are those where the permanency of service or revenue
 cannot be reasonably assured by the Company, such as an oil well.⁸

⁸ Id.

⁷ R40 of Company's tariff.

Temporary customers are those where the service is of a known temporary
 character.⁹ This could include customers that operate seasonally, such as county
 fairs.

4 Under the Company's current distribution line extension tariff, customers 5 designated as permanent service are eligible for a construction allowance. The construction 6 allowance represents the Company's payment of a portion of the distribution extension 7 cost on behalf of the customer. Customers designated as indeterminate or temporary 8 service are ineligible for a construction allowance, and must pay all of the distribution 9 extension cost necessary to interconnect to the Company's system.

10 Q. WHAT TYPES OF COSTS WILL THE CONSTRUCTION ALLOWANCE 11 COVER?

A. The construction allowance is applicable to costs related to upgrading the distribution system to interconnect the customer. Any upgrades to the transmission system for the interconnection of an EVSE will be subject to the Company's Electric Transmission Line Extension Policy, which begins on Sheet No. R47 of the Company's tariff manual.

16 Q. ARE EVSE CURRENTLY CLASSIFIED AS PERMANENT, INDETERMINATE,

17

OR TEMPORARY SERVICE?

A. The current distribution extension tariff does not specifically address EVSE or any type of
 EV load. Given the small number of EVSE and EVs in the service territory, there is some
 ambiguity as to whether a separately-metered EVSE should be classified as permanent or
 indeterminate service.

Q. DOES THE COMPANY PROPOSE ANY CLASSIFICATION CHANGES TO ADDRESS EVSE CLASSIFICATION?

3 A. Yes. In order to clear up the ambiguity around the permanency of EVSE, I propose 4 modifying the existing Extension of Electric Distribution Facilities tariff, which begins on Sheet No. R37 of the Company's currently effective tariff manual, to specifically classify 5 6 EVSE as permanent service. This change will automatically classify standalone EVSE as 7 permanent service, making them eligible for construction allowances. As discussed in the 8 testimony of Company witness Mr. Harrington, the State of Colorado has made the 9 widespread adoption of EVs a priority in both policy and statute. The Company interprets 10 these priorities as a commitment to ensuring the permanency of EVs and EVSE in 11 Colorado. Therefore, the Company believes that its proposal to also consider EVSE as 12 permanent service in the distribution extension policy is reasonable and will support 13 widespread transportation electrification. This change is also consistent with recent 14 changes Public Service Company of Colorado made to its distribution line extension 15 tariff.¹⁰

16

17

Q. HOW MUCH OF A CONSTRUCTION ALLOWANCE WILL EVSE CUSTOMERS RECEIVE AS A RESULT OF THIS PROPOSED CHANGE?

A. Under the Company's current construction allowances for permanent service, the value of
 the construction allowance that a standalone EVSE project will be eligible to receive
 depends upon the specifics of that project. In general, the Company has different
 construction allowances for different rate schedules.

¹⁰ PSCO, Distribution Extension Policy, for non-grandfathered EVSE, is provided on Tariff Sheet R216.

1	As an example, as defined in the tariff, the construction allowance for commercial
2	customers with energy demand between 10 kW and 50 kW is \$610 for the service lateral,
3	and \$518/kW of expected demand. In this example, a multi-port Level 2 charger with
4	roughly 43 kWs of demand on a single meter will be eligible for the construction allowance.
5	The total value of the construction allowance for this charger will be \$22,884. ¹¹
6	The construction allowance for commercial customers with expected energy
7	demand above 50 kW is \$3,861 for the service lateral, and \$531/kW of expected energy
8	demand. DCFCs will be covered under this construction allowance, and will likely receive
9	between \$30,000 and \$190,000 for such allowance. ¹²
10	Examples of construction allowances for EV chargers can be found in the below
11	Table PGG-3 and Attachment PGG-1. The construction allowance amounts were
12	determined in the Company's last rate review, in Proceeding No. 16AL-0326E.

1	3
T	5

Scenarios	Demand	Total Construction Allowance
SGS - Demand Scenario 1	14.4	\$8,069
SGS - Demand Scenario 2	28.8	\$15,528
SGS - Demand Scenario 3	43.2	\$22,988
LGS Scenario 1	50	\$30,411
LGS Scenario 2	100	\$56,961
LGS Scenario 3	150	\$83,511
LGS Scenario 4	200	\$110,061
LGS Scenario 5	250	\$136,611
LGS Scenario 6	300	\$163,161
LGS Scenario 7	350	\$189,711
Typical Level II project	23.76	\$12,918
Typical DCFC project	50	\$30,411

Table PGG-3: Construction Allowance Examples

¹¹ Approximately 6 Level 2 ports: 43 kW*\$518=\$22,274+610=\$22,884.
¹² One 50 kW DCFC: (50 kW*\$531)+\$3,861=\$30,411.

Q. HOW MUCH OF THE EV DISTRIBUTION EXTENSION COSTS WILL CURRENT CONSTRUCTION ALLOWANCES COVER IF THE COMMISSION APPROVES THE PROPOSED TARIFF CHANGE?

A. Distribution line extension costs can be a barrier to entry for potential EVSE owners.
Providing the construction allowance under the distribution line extension policy will be a
significant boost to EVSE. The Company estimates that distribution extension costs could
range from \$6,000 to \$10,000 for a single Level 2 charger. Compare this amount to the
construction allowance, paying between 80% and 100% of the estimated distribution
extension cost for Level 2 EVSE.

Q. WILL THE COMPANY EXAMINE WHETHER THE CLASSIFICATION OF EVSE AS PERMANENT IS A SUFFICIENT PROPOSAL TO LOWER BARRIERS TO EV ADOPTION GOING FORWARD?

A. Yes. During the Ready EV Plan, the Company will evaluate whether EV charger adoption
has been incented sufficiently through the change to the distribution line extension tariff,
and may propose additional changes in future TEP filings.

Q. HAS THE COMPANY PROPOSED SPECIFIC CHANGES TO ITS TARIFF TO
 IMPLEMENT THE REVISION TO THE DISTRIBUTION LINE EXTENSION
 POLICY?

A. Yes. The proposed amended Extension of Electric Distribution Facilities tariff can be
found in Hearing Exhibit 105, Attachments PGG-3 and PGG-4.

1Q.WHAT OVERALL LEVEL OF INCENTIVE WILL THE COMPANY'S LINE2EXTENSION POLICY AND THE EVSE REBATES PROVIDE TO CUSTOMERS?

A. It is difficult to estimate with precision the exact amount of incentive the Company's
construction allowance and rebates will provide because the line extension cost can vary
significantly depending on the location of interconnection. However, I have provided an
example of the overall incentives that would be available based on recent cost information
from the interconnection of three new chargers in Pueblo.

8 In this example, I assume the EVSE cost and the installation cost for a single public 9 Level 2 dual port charger to be \$16,000. The line extension cost is estimated at \$8,000. 10 Combined, the total cost of the project is thus \$24,000. The Construction Allowance 11 awarded to this project would be \$8,000, and the rebate for the EVSE cost would be \$4,000 12 (\$2,000 per port). Therefore, the total incentive provided to the customer would be \$12,000 13 or 50 percent of total costs. The customer would be required to contribute the other half 14 of costs. Table PGG-4 below summarizes the results.

15

Table PGG-4: Overall Incentive Example

Description	Total	BHE Incentive		Customer	
Level 2 Charger Cost and Installation	\$ 16,000	\$	4,000	\$	12,000
Interconnection	\$ 8,000	\$	8,000	\$	-
Total	\$ 24,000	\$	12,000	\$	12,000
			50%		50%

16

17

VI. <u>SAFETY AND RELIABILITY</u>

- 18 Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?
- A. In this section of my testimony, I discuss the Company's plan to integrate forecasted EV
 demand into distribution system planning. I include in this discussion an assessment of the

ability to forecast the impacts of EVSE installation and EV adoption on the distribution
 system.

Q. AS THE COMPANY IMPLEMENTS ITS TEP, HOW WILL THE INSTALLATION OF EVSE ON CUSTOMERS' PREMISES OR IN OTHER LOCATIONS IMPACT BLACK HILLS' DISTRIBUTION SYSTEM?

A. Potential impacts of EV charging on the Company's system are likely to occur mostly at
the distribution and transformer level, but are difficult to forecast for two reasons. The first
reason is that line extensions necessary to connect EVSE are handled on a case-by-case
basis, so distribution system impacts are also evaluated on a case-by-case basis. The
second reason is that, given the Company's limited experience with EVSE siting, it is
difficult to forecast where and how quickly EVSE will be installed.

12 Q. DOES THE COMPANY HAVE ANY DATA ABOUT THE CURRENT OR 13 ANTICIPATED ADOPTION OF EVS AND EVSE?

A. Yes. The number of EVs in the Company's service territory has more than doubled since
2016.¹³ As Company witness Mr. Aaron Carr explains, Black Hills forecasts this number
to grow to a total of 1,574 EVs by 2023.¹⁴ To accommodate the growing number of EVs,
Mr. Carr estimates that there will need to be a minimum of 75 public and workplace EVSEs
in the Company's service territory by the end of 2023 in addition to residential charging
stations.

¹³ Witness Carr Attachment TAC-2.

Q. DUE TO FORECASTED EV ADOPTION GROWTH, PLEASE EXPLAIN HOW THE COMPANY PLANS OVER THE SHORT TERM TO ACCOMMODATE INCREASED EV LOAD GROWTH ON ITS DISTRIBUTION SYSTEM.

- A. First, the Company has designed rates to minimize the system impact of EV charging. As
 discussed by Company witness Mr. Grubert, 75% of monthly system peaks over the last
 four-year period occurred between 3 p.m. and 7 p.m.¹⁵ The Company's proposed EV rates
 are higher during these peak time periods, and are therefore designed to encourage
 customers to shift usage from peak times to off-peak times. Thus, the Company's proposed
 EV rates are designed to mitigate distribution system impacts.
- 10 Second, the Company will examine EV charger impacts on the distribution system 11 on a case-by-case basis as part of the distribution line extension policy. This process will 12 assist the Company in gaining a knowledge base on the site-specific issues presented by 13 EV charging.

14 Q. PLEASE EXPLAIN HOW THE COMPANY PLANS OVER THE LONG TERM TO 15 ACCOMMODATE INCREASED LOAD GROWTH ON ITS DISTRIBUTION 16 SYSTEM.

A. Section 40-2-132, C.R.S., directs the Commission to develop rules for the filing of utility
distribution system plans. The Commission has not yet begun a Notice of Proposed
Rulemaking ("NOPR") to implement distribution system plan rules, but the Company
expects such a NOPR proceeding to begin in the near future. That NOPR process will craft
the specific distribution system plan requirements, and the Company believes that any such

¹⁵ Hearing Exhibit 103, Direct Testimony of Mike Grubert at pg. 39, Figure MRG-7.

1		plan should reflect the growth of EVs at the distribution system level. By incorporating
2		new EV load forecasts into distribution planning, along with a more comprehensive plan
3		for issues impacting the distribution system, Black Hills and interested parties will have
4		the opportunity to proactively address distribution system needs. This process will assist
5		in ensuring that over the long term the distribution system is managed and upgraded in a
6		manner consistent with the public interest to promote transportation electrification.
7	Q.	WILL THE COMPANY USE ACTUAL EV CHARGING LOAD IN THE FUTURE
8		DURING ITS PLANNING PROCESSES, INCLUDING DISTRIBUTION SYSTEM
9		PLANNING?
10	A.	Yes. With the forecasted increase in the number of EVs on the road in the coming years,
11		the load research for EVSE will also improve. The Company will analyze EVSE usage
12		profiles, locations, and customer responses to the EV rates to determine how to best model
13		EV charging growth to incorporate this information into the Company's planning
14		processes, including distribution system planning.
15		
16		VII. <u>EV PROGRAM COSTS</u>
17		A. PLAN BUDGET OVERVIEW
18	Q.	WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?
19	A.	In this section, I summarize the various budget components of the Company's Ready EV
20		Plan, including rebate and line extension costs, incentives, and program administration
21		costs.
22	Q.	DO YOU TESTIFY TO THE REASONABLENESS OF THE COMPANY'S
23		PROPOSED OVERALL BUDGET FOR THE READY EV PLAN?

1	A.	No. Company witness Mr. Harrington testifies as to why the Company's proposed budget
2		will support widespread transportation electrification in the Company's service territory.
3		That is, he describes why the Company's Ready EV Plan and the proposed total budget
4		will reasonably support the legislature's transportation electrification objectives for the
5		Company's customers. In my testimony, in addition to supporting the proposed rebate
6		levels and line extension allowances, I describe the components of the Ready EV Plan
7		budget in more detail below.
8	Q.	WHAT IS THE ESTIMATED TOTAL BUDGET OF THE COMPANY'S READY
9		EV PLAN?
10	A.	The Ready EV budget has been structured to begin with a total budget of \$396,687 in the
11		first year, growing to \$441,014 in year two, and \$506,008 in year three.
12	Q.	IS THE COMPANY'S PROPOSED BUDGET WITHIN THE ALLOWABLE

13 **RETAIL RATE IMPACT SET OUT IN COLORADO LAW?**

- 14 A. Yes, it is well under the permissible retail rate impact. C.R.S. § 40-1-103.3(6) provides
- 15 the following:

16 An electric public utility may recover the costs of distribution system 17 investments to accommodate alternative fuel vehicle charging, subject to 18 evaluation and cost recovery provisions that are comparable to other 19 regulated investments in the distribution grid; except that distribution 20 system investments that are a component of a transportation electrification 21 plan submitted in accordance with section 40-5-107 are subject to sections 22 40-3-116 and 40-5-107. The commission shall consider revenues from 23 electric vehicles in the utility's service territory in evaluating the retail rate 24 impact. The retail rate impact from the development of electric vehicle 25 infrastructure must not exceed one-half of one percent of the total annual 26 revenue requirements of the utility. 27

- 28 Thus, the retail rate impact of the Company's proposed Ready EV Plan budget can be up
- 29 to 0.5% of the Company's total annual revenue requirement, after accounting for additional

revenues generated from the Plan. The retail rate impact of the Company's proposed Ready
 EV Plan budget of between \$396,000 and \$506,000 annually is well within 0.5%. In 2019,
 the Company total annual revenue was \$239,535,200, thus 0.5% would result in a total
 TEP cost of \$1,197,676, without considering additional revenues from electric vehicles.

5 Q. WHY IS THE PROPOSED BUDGET LEVEL FOR EACH YEAR WELL WITHIN 6 THE STATUTORY AMOUNT ALLOWED FOR A YEARLY RETAIL RATE 7 IMPACT?

8 As discussed by Company witness Mr. Harrington, Black Hills' customers frequently A. 9 express concern regarding maintaining reasonable rates for Black Hills. The Company 10 wishes to be cognizant of its customers' sensitivities to retail rate impacts while supporting 11 widespread transportation electrification in its service territory. Additionally, as discussed 12 in the testimony of Company witness Mr. Carr, there are relatively few EVs in the 13 Company's service territory. As a result, the Company designed its Ready EV Plan to 14 encourage the widespread adoption of EVs by encouraging investment in EVs and EVSE 15 with a particular sensitivity to what is reasonable for the Company's service territory from 16 a rates perspective. This is most reasonably accomplished by making total Ready EV Plan 17 spending dependent upon customer participation. The Ready EV Plan is thus adaptable, 18 market driven, and is designed to be reasonable for its customers from a retail rate impact 19 perspective.

1		B. COMPONENTS OF THE EV BUDGET
2	Q.	WHAT ARE THE OVERALL BUDGET COMPONENTS FOR IMPLEMENTING
3		THE COMPANY'S PROPOSED TEP?
4	A.	The Company's Ready EV budget includes costs associated with the 1) EV line extension
5		infrastructure, 2) cost of rebates, 3) a performance incentive, and 4) program administration
6		expenses. Program administration expenses consist of 1) education and outreach expense
7		2) consulting expense, 3) cost of an administrative employee to oversee the plan, 4) EV
8		Vendor expense, and 5) legal expense.
9	Q.	HOW MUCH HAS BEEN BUDGETED DURING THE PLAN YEARS?
10	A.	I have modeled the Ready EV Plan budget for three years, the length of the initial TEP.
11		Table PGG-5 below provides an overview of estimated costs. I provide a detailed
12		breakdown of the budget cost estimates for each of the first three years
13		in Attachment PGG-1.

14 15

Table PGG-5: Ready EV Budget

Budget Category	2021 Costs	2022 Costs	2023 Costs
Line Extension Construction Allowance	\$8,818	\$25,399	\$45,591
EVSE Rebates	\$72,419	\$145,592	\$234,781
Performance Incentive	\$27,117	\$31,690	\$37,303
Administrative & General			
Legal (3 yr. amortization)	\$40,000	\$40,000	\$40,000
Consulting (3 yr. amortization)	\$10,000	\$10,000	\$10,000
Education and Outreach	\$175,000	\$125,000	\$75,000
EV Vendor Expense	\$3,333	\$3,333	\$3,333
New Employee	\$60,000	\$60,000	\$60,000
Total	\$396,687	\$441,014	\$506,008

16

1Q.ARE THESE THE BUDGETED AMOUNTS THAT WILL ACTUALLY BE2REFLECTED IN RETAIL RATES?

3 A. No, while the Company believes these budget levels to be reasonable, as discussed in more 4 detail by Company witness Mr. Harrington, these amounts are estimates of the Company's 5 anticipated costs, and the actual retail rate impact is likely to vary from these budgets. Two 6 of the largest likely sources of variance stem from sources outside the Company's control, 7 and are based on customer participation in the Ready EV Plan: 1) program participation 8 and 2) line extension costs. Until the programs are in place and evaluated, it is difficult to 9 predict how extensively Black Hills' customers will take advantage of the rebates offered. 10 Additionally, since line extension costs vary on a case-by-case basis, actual costs for line 11 extensions may differ from the budgeted amount. As a result of these factors, actual TEP 12 costs are likely to vary from the budgeted amount.

13 Q. HOW IS THE COMPANY PROPOSING TO MANAGE THESE 14 UNCERTAINTIES?

A. There are two methods to manage the uncertainties. First, Mr. Harrington discusses a
budget cap that the Company will apply to allow for flexibility in managing actual costs.
Second, in order to prevent potential variances in costs, the Company is proposing to
amortize the actual costs of rebates, legal, and consulting over a three-year period, which I
discuss further below. By amortizing costs, the Company is able to smooth out the
variability in actual costs that may arise from year-to-year during the Plan period.

Q. PLEASE DISCUSS THE COMPANY'S PLAN TO LIMIT RATE IMPACTS THROUGH A CAP ON ACTUAL COSTS STEMMING FROM THE READY EV PLAN.

4 A. As discussed in Company witness Mr. Harrington's testimony, the Company proposes that 5 the total cost of the Ready EV Plan be capped at 150% of the proposed budget level for 6 each Plan year. This will allow flexibility from a cost perspective for the Company to meet 7 its obligations to support widespread transportation electrification while limiting rate 8 impacts to customers. The Company's proposed cap is still well within the legislative cap 9 for retail rate impacts based on the annual budget levels. For year one, this corresponds 10 with a total cost cap of \$595,030, \$661,521 for year two, and \$759,012 for year three. 11 Details of these calculations can be found in Attachment PGG-1.

12 Q. HOW WILL THE ACTUAL COSTS STEMMING FROM THE READY EV PLAN

13

BE REFLECTED ON CUSTOMER BILLS?

A. The retail rate impact would be reflected on customer bills as a charge through the Demand
Side Management Cost Adjustment ("DSMCA"). I describe in more detail below how
actual costs will be reflected as a rate to be charged to customers. In this section, however,
I present the Company's overall budget for the Ready EV Plan that the Company believes
will be a reasonable estimate of the Plan's overall costs.

19

Q. CAN YOU PLEASE DISCUSS IN DETAIL THE AMOUNTS BUDGETED FOR

20 EACH CATEGORY FOR EACH YEAR OF THE PLAN PERIOD?

- 21 A. Yes. In the remainder of this section of my testimony, I will discuss the budget
- 22 components identified above in turn, providing additional support for each.

1 1. **EV Distribution Line Extension Costs** 2 Q. WHAT ARE THE ESTIMATED AMOUNTS FOR THE LINE EXTENSION 3 **COSTS?** 4 The Company anticipates total construction allowances of \$132,187 in 2021, \$140,016 in A. 5 2022, and \$193,913 in 2023. This results in a budgeted annual revenue requirement 6 amount of \$8,818 in 2021, \$25,399 in 2022, and \$45,591 in 2023 attributable to 7 construction allowances. 8 HOW WILL DISTRIBUTION LINE EXTENSION COSTS BE REFLECTED IN Q. 9 THE TOTAL PROGRAM BUDGET? 10 A. As I discuss above, under the Company's current distribution line extension tariff, 11 customers designated as permanent service are eligible for a construction allowance. As 12 part of the Ready EV Plan, the Company proposes to amend the existing Extension of 13 Electric Distribution Facilities tariff to classify EVSEs as permanent service, which will 14 allow them to receive a construction allowance. The EV charging distribution line 15 extension budget will be calculated similar to other distribution line extension costs, except 16 that they will be tracked and recovered separately from the costs in base rates. 17 The calculation of the annual revenue requirement for distribution extensions will

be the following process. First, the total construction allowance, or gross plant in service, for distribution line extensions will be calculated by summing up all construction allowances paid for EVSE during the Ready EV Plan. Second, annual depreciation expense is calculated based on the gross plant in service using a composite annual depreciation rate for distribution assets. Third, accumulated depreciation is calculated using depreciation expense and the amount of time the plant has been in service. Fourth, accumulated depreciation is then subtracted from the gross plant to derive net plant in
service, which is multiplied by the Company's Commission approved WACC of 7.43% in
order to obtain the return on investment. Finally, the return will be grossed up for income
taxes. Similar to rebates, distribution extension contributes to the overall revenue
requirement through a return on construction allowance costs and taxes. These costs will
be tracked separately in order to assess the distribution extension costs driven by EVs.

7Q.CAN YOU PLEASE DESCRIBE IN MORE DETAIL HOW YOU CALCULATED8CONSTRUCTION ALLOWANCE COSTS THAT ARE REFLECTED IN THE

9

TOTAL PROGRAM BUDGET?

10 A. Yes. The annual budgeted cost of distribution line extensions represents the annual 11 revenue requirement of the total construction allowances that the Company provides to 12 customers in order to provide service to new EVSE. The actual cost of distribution line 13 extensions can vary greatly depending on a variety of factors.

As I discussed above, a customer that wants to install a new EVSE that requires a 14 15 distribution line extension will be eligible to receive a construction allowance from the 16 Company. The construction allowance is the amount of the line extension cost that the Company credits to a customer for the total construction of an EVSE interconnection. To 17 18 estimate the cost of the construction allowances for budgeting purposes, I used the typical 19 peak energy demand of a Level 2 charger. I then calculated the construction allowance for 20 a typical Level 2 project of \$12,918 under the Company's existing Extension of 21 Distribution Facilities tariff. I then use this value to calculate the total budget for Level 2 22 construction allowances of \$101,776 during year one, \$109,605 during year 2, and 23 \$133,091 during year 3 of the Ready EV Plan, as I show in more detail in Attachment

1 PGG-1. As explained earlier, actual costs are likely to vary from these amounts as 2 construction costs, program participation, and EVSE demand vary. Using a typical DCFC peak demand of 50 kW,¹⁶ I estimate that average DCFC 3 projects will be eligible for a construction allowance of \$30,411 under the Company's 4 Extension of Distribution Facilities tariff. Given that the Company anticipates four DCFC 5 6 installations in its service territory during the three-year TEP period, I assume that the 7 Company will incur \$30,411 in construction allowance costs for each of the first two years, 8 and \$60,822 in construction allowance costs in the third year of the Ready EV Plan. Details 9 of these calculations can be found in Attachment PGG-1. 10 2. **Cost of Rebates** 11 12 Q. CAN YOU PROVIDE MORE DETAIL ON THE BUDGET FOR THE REBATE 13 **COMPONENT OF THE READY EV PLAN?** Yes. As previously noted, the number and total cost of rebates will depend largely on the 14 A. 15 number of EVSE acquired by customers in the three-year cycle. As discussed by Mr. Carr 16 in his Direct Testimony, the Company anticipates increased EVs in its service territory of 1,574 by 2023.¹⁷ To accomplish this growth, Mr. Carr states there will need to be a 17 18 minimum of 75 public EVSE in addition to privately owned EVSE in the Company's 19 service territory by the end of 2023, as shown in Table PGG-6 below. Using these 20 numbers, Mr. Carr estimates the following number of rebates offered during the Plan 21 period.

¹⁶ <u>https://www.nrel.gov/docs/fy17osti/69031.pdf</u>, at section 4.2.1.

¹⁷ Hearing Exhibit 102, Attachment TAC-2 EV Forecast Detail.

Charger Type	1/1/2020	2020	2021	2022	2023	Total
Incremental EVs	282	254	310	346	382	1,574
75%	75%	75%	75%	75%	75%	
Residential Rebates	0	0	233	260	287	780
Public Level 2	9	16	13	14	17	69
DCFCs	2	0	1	1	2	6
Total Public EVSE	11	16	14	15	19	75
This will result i ebates given in 2	in the total v 2022, and \$25	alue of \$1 56,000 for :	.84,000 for rebates give	rebates giv n in 2023.	en in 2021,	\$200,000

Table PGG-6: Expected Rebates

1

2

3

4 Q. HOW WILL THE REBATE COSTS BE REFLECTED IN THE TOTAL 5 PROGRAM BUDGET?

A. The Company requests that the rebates be treated as a regulatory asset to which the
Company is allowed to earn a rate of return. While Company witness Mr. Harrington
discusses this request in more detail, my testimony focuses on the mechanics of how this
treatment is incorporated into the Ready EV budget.

10 Each year the Company will provide rebates to eligible customers as an incentive 11 for EV adoption. The cost of these rebates each year will be recorded as a regulatory asset 12 that is amortized over a three-year period. The Company will calculate the annual revenue 13 requirements associated with this regulatory asset using the Company's approved weighted 14 average cost of capital. As a simple illustration of how one year of rebates would be 15 reflected in the revenue requirement without accounting for rebates in successive years, if 16 the Company provided \$1,000 of rebates in year one of the program, the regulatory asset 17 would be \$1,000 and would be amortized over three years. Table PGG-7 below depicts

this hypothetical annual revenue requirement for one year of issued rebates, which is
 grossed up to account for income taxes.

3

	2022	2023	2024
Total Rebates	\$1,000	\$1,000	\$1,000
Accumulated Amortization of Rebates	(\$333)	(\$667)	(\$1,000)
Net Rebates	\$667	\$333	\$0
WACC	7.43%	7.43%	7.43%
Return on Rebates	\$50	\$25	\$0
Equity Earnings Income Tax	\$33 \$218	\$16 \$109	\$0 \$0
Rebate Amortization	\$333	\$333	\$333
Rebate Revenue Requirement	\$601	\$467	\$333

Table PGG-7: Hypothetical Rebate Recovery

As previously noted, in order to minimize the rate impact to customers, the Company proposes to amortize the rebates over a three-year period. This will result in approximately a third of 2021 rebate costs being recovered in 2022, 2023, and 2024.

7 Q. WHY DOES THE COMPANY BELIEVE THAT IT IS REASONABLE TO 8 AMORTIZE THE COST OF ANNUAL REBATES OVER A 3-YEAR PERIOD?

9 A. First, C.R.S. § 40-5-107(1)(a) requires electric public utilities to file TEPs every three years
10 beginning May 2020. The Company believes that amortizing rebates over a three-year
11 period is also reasonable because it matches the length of the Ready EV Plan period.
12 Second, a three-year amortization period allows the Company to smooth out bill impacts
13 for customers. For example, if program participation in a given year is significantly higher

1		than any other year of the Plan, customers would see a single year of higher bills due to the
2		increased participation. By spreading the costs over a three-year period, the impacts to
3		customer bills is smoothed out, resulting in more stable bills for customers.
4		
5		3. Performance Incentive Level
6	Q.	HOW WILL PERFORMANCE INCENTIVE COSTS BE REFLECTED IN THE
7		BUDGET?
8	A.	Company witness Mr. Harrington's testimony discusses the calculation of the proposed
9		performance incentive and supports the reasonableness of including a performance
10		incentive in the Ready EV budget. My testimony reflects this cost in the Ready EV budget.
11		Attachment PGG-1 shows the calculation of the performance incentive in the Company's
12		proposed budget.
13		
14		4. Program Administrative Costs
15	Q.	WHAT ARE THE OTHER BUDGET ITEMS ASSOCIATED WITH
16		IMPLEMENTING THE COMPANY'S PROPOSED TEP?
17	А.	As I noted earlier in my testimony, I have budgeted for several program components that
18		relate to the administration of the Plan. Specifically, to create and administer the Ready
19		EV Plan, the Company will incur consulting, education and outreach, administrative salary,
20		vendor system, and legal expenses.
21	Q.	CAN YOU PROVIDE MORE DETAIL ABOUT THE CONSULTING BUDGET?
22	А.	Yes. Mr. Harrington explains the Company has contracted with Applied Economics Group
23		to evaluate the benefits of the program. I have included a total of \$30,000 for consulting

1 in the budget, all of which will be incurred during the first year. However, to minimize the 2 upfront impact to customers, I propose to amortize this amount over a three-year period.

3 Q. CAN YOU PROVIDE MORE DETAIL ABOUT THE CUSTOMER 4 **COMMUNICATION AND EDUCATION STRATEGY?**

5 A. Yes. The Ready EV budget includes a Customer Communication and Education Strategy 6 to increase awareness of Ready EV programs and encourage the widespread adoption of EVs in the Company's service territory. Company witness Ms. Donnelly discusses the 7 8 Company's Communication and Education Strategy in greater detail in her Direct 9 Testimony. Ms. Donnelly explains the budget cost for this strategy of \$175,000 in year 10 one, \$125,000 in year two, and \$75,000 in year three.

11 Q. CAN YOU PROVIDE MORE DETAIL ABOUT EMPLOYEE ADMINISTRATION 12 **COSTS**?

13 A. Yes. As discussed in witness Mr. Carr's testimony, the estimated total fully loaded 14 compensation for this new employee is approximately \$80,000. However, it is estimated 15 that this new employee will spend three quarters of his of her time working on the Colorado 16 Ready EV Plan and the other quarter of his or her time will be spent on working on the 17 Wyoming and South Dakota Ready EV programs. Thus, \$60,000 has been included in the 18 budget.

19 PLEASE DISCUSS THE VENDOR RELATED COSTS. Q.

20 A. Company witness Mr. Carr discusses the costs associated with the Company's qualified 21 vendors that provide EVSE. These costs relate to the charging data provided by the 22 vendors. Mr. Carr explains the cost is estimated at \$10,000, \$3,333 of which is attributable 23 to Colorado. I have included this amount in the Ready EV budget.

1	Q.	CAN YOU PROVIDE MORE DETAIL ABOUT THE LEGAL BUDGET?
2	A.	Yes. In order to prepare such a comprehensive filing as this, the Company has hired outside
3		counsel. We have budgeted a total of \$120,000 for this legal support. In order to minimize
4		the upfront impact to customers, I propose to amortize this amount over three years,
5		resulting in an annual recovery of \$40,000.
6		
7		C. READY EV PROGRAM REVENUES
8	Q.	WILL THE COMPANY RECEIVE ADDITIONAL REVENUE IF ITS READY EV
9		PLAN IS SUCCESSFUL IN PROMOTING EV ADOPTION?
10	А.	Yes. As customers adopt EVs and install EVSE, the Company anticipates that electricity
11		usage will increase on its system, as discussed in the distribution system impacts section
12		of my testimony.
13	Q.	WHAT ARE THE COMPANY'S PROJECTED REVENUES STEMMING FROM
14		PROJECTED EV ADOPTION DURING PLAN YEARS 2021 -2023?
15	А.	Similar to program costs, the Company will not know the actual amount of revenue that
16		the Plan will generate until it has actual revenues. However, the Company has developed
17		forecasts based on the information currently available.
18		Using the EV rates addressed by Company witness Mr. Grubert's Hearing Exhibit
19		103, Attachment MRG-1, and the estimated program participation in witness Mr. Carr's
20		Hearing Exhibit 102, Attachment TAC-2, I have estimated that the Ready EV Plan will
21		result in additional revenue of \$118,654 in the first year, \$240,590 in the second year, and
22		\$271,343 in the third year stemming from increased load and energy due to EV charging.

- 1 Q. HOW ARE PROJECTED REVENUES CALCULATED? 2 A. I provide the calculations for projected revenues due to EV charging in Hearing Exhibit 3 105, Attachment PGG-1. To estimate the projected revenues, I 1) estimated the additional billing determinants in terms of kW and kWh associated with the increased number of EVs, 4 2) estimated the EV owner's charging behavior by charger type and time, and 3) applied 5 6 the EV rates in witness Grubert's Hearing Exhibit 103, Attachment MRG-1 to the 7 estimated usage to estimate the annual revenue for each type of charging. 8 Q. HOW WILL INCREASED SALES FROM THE TEP IMPACT OTHER 9 **CUSTOMERS?** 10 The DSMCA rate is determined by dividing the DSMCA costs by the annual revenue for A. 11 the Company. Increases to the Company's annual revenue results in decreased rates for 12 customers, all else equal. Customers will benefit from a lower DSMCA rate because the 13 rate will reflect EV charging load growth. In other words, as EV charging increases and 14 the Company's annual revenue increases, the DSMCA rate will be lower. 15 **Q**. CONSIDERING THE COMPANY'S ESTIMATED INCREASE IN REVENUES 16 STEMMING FROM EV ADOPTION, DOES THE COMPANY PROJECT THAT 17 THE RETAIL RATE IMPACT OF THE READY EV PLAN WILL BE WITHIN 18 THE AMOUNT ALLOWABLE UNDER COLORADO LAW? 19 Yes. Hearing Exhibit 105, Attachment PGG-1 provides the anticipated legislative cap A. 20 allowable under Colorado law. By way of summary, the legislative cap is 0.5 percent of
- the Company's revenue requirement, reflecting EV revenues. I present our proposed
 budget as a percent of the legislative cap in the following Table PGG-8.

Year	2019 Total Revenue	Estimated EV Plan Revenue	2019 Total Revenue with EVs	Statutory Cap \$	Proposed Budget
2022	\$239,535,200	\$118,654	\$239,653,854	\$1,198,269	\$396,687
2023	\$239,535,200	\$240,590	\$239,775,790	\$1,198,878	\$441,014
2024	\$239,535,200	\$271.343	239.806.543	\$1,199,033	\$506.008

Table PGG-8: Legislative Budget Cap

2

3

VIII. <u>READY EV COST RECOVERY</u>

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

A. In this section of my testimony, I will describe how the Company will recover Ready EV
Plan costs actually incurred through the existing DSMCA. While Company witness Mr.
Harrington's testimony explains why the DSMCA is an appropriate mechanism for
recovering TEP costs, I discuss how the Company will incorporate actual costs stemming
from the Ready EV Plan into the DSMCA calculation.

10 **Q.**

WHAT IS THE DSMCA?

11 A. The DSMCA is the rate mechanism by which the Company recovers DSM costs from 12 customers. It is updated biannually with the Company's filing on April 1 and October 1 of 13 each year, for an effective date on the subsequent July 1 and January 1, respectively 14 thereafter.

Q. CAN YOU PROVIDE AN OVERVIEW OF DSM FILINGS THE COMPANY SUBMITS?

- A. Yes. The Company submits three filings related to DSM: 1) the DSM Plan, 2) the DSM
 Annual Report, and 3) the DSMCA.
- First, every three years, the Company files a DSM Plan. The purpose of this filing
 is to solidify the DSM programs that the Company will offer for the upcoming three years.

1 Program goals and evaluation methodologies are also determined during the DSM Plan 2 filing. The DSM filing is informed by frequent stakeholder meetings during the previous 3 plan period. These stakeholder meetings cover topics such as best practices and potential 4 programs for the DSM Plan. The Company's current DSM Plan runs through 2021, so the next DSM Plan will be filed in approximately April of 2021, and be effective for 2022-5 6 2025.18

7 Second, over the course of the DSM Plan period, the Company files the DSM 8 Annual Report. In the Annual Report, the Company breaks down the DSM Plan by each 9 approved program, and provides the results of each program using the approved evaluation 10 metrics. The DSM Annual Report is purely informational, and no changes to the DSM 11 Plan result from the annual reports. The DSM Annual Report is filed in April each year.

12 Finally, the Company makes a filing to update the DSMCA in April and October 13 of each year. The purpose of these filing is to update the DSMCA tariff, through which 14 the Company recovers the most recent DSM program costs. The DSMCA is reflected on 15 all customer bills as a percentage of certain rates on the customer's bill. The Company 16 proposes to recover costs related to the Ready EV Plan in a future DSMCA filing.

17 **Q**. HOW WILL THE COMPANY INCORPORATE THE TEP FILING INTO THE 18 **ABOVE DSM FILINGS?**

19 The Company proposes to line up filings for the Ready EV Plan with filings for the DSM, A. 20 which will ease the administrative burden for the Company, the Commission, and 21 stakeholders. C.R.S. § 40-5-107(1)(a) requires the Company to file a new TEP by May 15

¹⁸ 18A-0279E, Decision No. R18-1017-I

1		every third year beginning with this filing in 2020. The Company's next TEP will therefore
2		be filed by May 15, 2023, which is approximately one year before the 2024 DSM Plan is
3		filed. While the Company cannot use the existing DSM Plan filing to update the TEP,
4		having three-year plans filed approximately a year prior to the next DSM Plan filing helps
5		to relieve the administrative burden of these large and complex filings.
6		Because the Company intends for the Ready EV Plan to go into effect in January
7		2021, I propose that the Company file the first TEP annual report in April 2022
8		concurrently with the DSM annual report.
9		The Company also proposes to incorporate the actual TEP cost in the April
10		DSMCA filing in April 2022. The April DSMCA filing will be updated with the annual
11		actual TEP costs for the previous year. The Company will not adjust the TEP cost in the
12		October DSMCA filing.
13	Q.	HOW WILL TEP COSTS BE REFLECTED IN THE DSMCA?
14	A.	The Company will track the costs for the DSM Plan and TEP separately to enable future
15		assessments. To do this, the Company will calculate TEP costs separately from the DSM
16		costs. The Company will then add together the costs for each program. These calculations
17		will be provided on page 1 of the DSMCA Appendix C, which calculates the DSMCA
18		revenue requirement, just before the rate is calculated.
19	Q.	DOES THE COMPANY PROPOSE TO MODIFY ITS CURRENT DSM TARIFF
20		TO ACCOMMODATE COST RECOVERY FOR ITS TRANSPORTATION
21		ELECTRIFICATION PROGRAM?
22	A.	Yes. The current DSMCA tariff lays out the definitions, revenue requirement formula,

23 revenue requirement calculation, and other considerations for the DSMCA. Since the TEP

legislation is new, the DSMCA tariff has no language pertaining to the TEP. In order to
accommodate the inclusion of TEP costs in the DSMCA, it is necessary to modify the
DSMCA tariff to explain which TEP costs will be included in the DSMCA, how those
costs will be included, and when the costs will be updated. This will include amendments
to several sections of the DSMCA tariff, including definitions, DSMCA Rider Filings,
Additional Filing Requirements, and the calculation of the DSMCA rate. The Company's
proposed DSMCA tariff can be found in Attachment PGG-3.

8

Q. HOW ARE COSTS ALLOCATED AMONG THE CLASSES IN THE DSMCA?

9 A. As I previously mentioned, the DSMCA is reflected as a percent of a customer's total bill. 10 This percent is calculated based on the total Company revenue requirement, and is the same 11 for all customer classes. There is therefore no class cost allocation in the DSMCA, which 12 will likewise apply to the TEP. This means that each customer's bill will be proportionally 13 impacted the same. As an example, suppose a residential customer has a bill of \$100 before 14 the TEP is applied, and a Large Power Service ("LPS") customer has a bill of \$100,000 15 before the TEP. If the TEP increases the DSMCA from 1.5% to 1.75%, both the residential 16 and LPS customers would receive a .25% bill increase. In this example, the residential 17 customer's new bill will be \$100.25, while the LPS customer's bill will be \$100,250.

18 Q. PLEASE DISCUSS HOW COST RECOVERY THROUGH THE DSMCA WILL 19 IMPACT CUSTOMER BILLS.

A. I have calculated a customer bill impact using the most recently approved rates. In 2022,
a typical residential customer's monthly bill will potentially increase 0.19%, from \$100.88
to \$101.08. A typical small general service customer's monthly bill will increase 0.19%,

1 from \$363.22 to \$363.93. Details of these calculations can be found in Attachment PGG-

- 2 2 and Table PGG-9 below

Table PGG-9: Customer Bill Impact

	Year	Residential Bill	Residential Bill	Small General	Small General
		Impact (\$)	Impact (%)	Bill Impact (\$)	Bill Impact
					(%)
	2022	\$0.19	0.19%	\$0.71	0.19%
	2023	\$0.21	0.21%	\$0.77	0.21%
	2024	\$0.24	0.24%	\$0.87	0.24%
Q.	WHEN WILL 7	THE COMPANY	FILE TO UPDA	ATE TEP COST	S?
А.	The Company pr	oposes to update	TEP costs once a	year in April cons	istent with the Apri
	filing of the DSN	/ICA.			
	8				
	IX	<u>ANNUAL R</u>	EPORTING REC	<u>QUIREMENTS</u>	
Q.	HOW WILL T	HE EFFECTIVE	NESS OF THE I	PROPOSED TE	P PROGRAMS BI
	DETERMINED)?			
А.	SB19-077 direct	s the Commission	to consider wheth	er a TEP incorpor	ates public reporting
	requirements to	inform design and	d Commission po	licy. Toward thi	s end, the Company
	will submit annu	al TEP reports to t	he Commission ev	very April, as note	d above. The Read
	EV Annual Rep	ort will be in a sin	milar format to th	e DSM annual re	port, and will detai
	how each of the	Ready EV progra	ms performed ove	er the previous ye	ar using information
	the Company ha	s deemed helpful	in informing desig	n and Commissio	on policy.
Q.	WHAT INFOR	MATION WILL	BE INCLUDED	IN THE ANNU	AL REPORTS
٨	In the annual ray	port the Company	will provide the	following inform	nation: 1) number of
A.	in the annual rep	jort, the Company	y will provide the	Tonowing inform	auon. 1) number o
	rebates given, 2)	total value of reb	ates given by type	e, 3) number of cu	stomers enrolling in

1		each EV rate, 4) total distribution extension costs per project, 5) construction allowance
2		paid per project, 6) locations of public Level 2 EVSE and public DCFC projects, 7) Plan
3		administration costs, 8) charging data, 9) a social cost of carbon result; 10) annual net
4		energy and demand impacts; and 11) cost effectiveness of the Plan presented in the
5		Modified Total Resource Cost Test and the Participant Cost Test.
6	Q.	WHY IS THE COMPANY PROPOSING THESE METRICS FOR INCLUSION IN
7		THE ANNUAL REPORT?
8	А.	The listed metrics will help to inform the Commission, stakeholders, and the Company
9		about how effectively the TEP is performing. If any TEP programs are determined to be
10		underperforming expectations, the data gathered in the annual reports can be used to make

11 changes during the current or next TEP filing.

12 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

13 A. Yes.

Appendix A

Statement of Qualifications

Grant Gervais

REGULATORY EXPERIENCE:

- Regulatory & Financial Analyst Black Hills Energy, LLC Employed: January 2019 to present
- Rate Analyst, Tariff and Rate Analysis Section Public Utility Commission of Texas, Rate Regulation Division Employed: August 2013 to January 2019.

DUTIES: Perform analysis of tariff filings, cost allocation, and rate design. Review tariffs of regulated utilities to determine compliance with Commission requirements. Analyze cost allocation studies and rate design issues for regulated electric utilities. Analyze policy issues associated with the regulation of the electric industry. Work on or lead teams in contested cases, reports, the development of market rules, and research concerning pricing and related issues. Prepare and present testimony as an expert witness on rate and related issues in docketed proceedings before the Commission and the State Office of Administrative Hearings.

EDUCATION:

2014	NARUC The Basics of Practical Regulatory Training
2013	Sam Houston State University, Huntsville, TX Bachelor of Business Administration in Economics

List of Testimony Filed at the Public Utility Commission of Texas:

• Docket No. 48400—Joint Application of Rayburn Electric Cooperative, INC. and Lone Star Transmission, LLC to Transfer Load to ERCOT, and for Sale of Transmission Facilities and Transfer of Certificate Rights in Henderson and Van Zandt Counties, Texas—September 11, 2018.

- Docket No. 48371—Entergy Texas, INC's Statement of Intent and Application for Authority to Change Rates—August 8, 2018.
- Docket No. 48226—Application of CenterPoint Energy Houston Electric, LLC to Amend its Distribution Cost Recovery Factor—May 24, 2018.
- Docket No. 47576—Application of the City of Lubbock Through Lubbock Power and Light for Authority to Connect a Portion of its System with the Electric Reliability Council of Texas—December 12, 2017.
- Docket No. 47125—Application of El Paso Electric Company to Revise its Energy Efficiency Cost Recovery Factor and Request to Establish Revised Cost Cap—July 27, 2017.
- Docket No. 46831—*Application of El Paso Electric Company to Change Rates*—June 30, 2017.
- Docket No. 47032—Application of CenterPoint Energy Houston Electric, LLC for Approval of a Distribution Cost Recovery Factor Pursuant to P.UC. Subst. R. 25.243—June 07, 2017.
- Docket No. 46308—*Application of El Paso-Electric Company to Reconcile Fuel Costs* March 7, 2017.
- Docket No. 45524—*Application of Southwestern Public Service Company for Authority to Change Rates* August 25, 2016.
- Docket No. 45928—Application of AEP Texas North Company to Adjust its Energy Efficiency Cost Recovery Factor and Related Relief—July 25, 2016.
- Docket No. 45929—Application of AEP Texas Central Company to Adjust its Energy Efficiency Cost Recovery Factor and Related Relief—July 25, 2016.
- Docket No. 45747—Application of CenterPoint Energy Houston Electric, LLC for Approval of a Distribution Cost Recovery Factor Pursuant to P.UC. Subst. R. 25.243—June 03, 2016.
- Docket No. 44941—Application of El Paso Electric Company to Change Rates— December 18, 2015.
- Docket No. 45083—Application of Entergy Texas, Inc. for Approval of a Distribution Cost Recovery Factor—October 23, 2015.
- Docket No. 44612—Application of Southwestern Electric Power Company to Adjust Energy Efficiency Cost Recovery Factor and Related Relief—June 11, 2015.
- Docket No. 44572—Application of CenterPoint Energy Houston Electric, LLC for Approval of Distribution Cost Recovery Factor Pursuant to P.UC. Subst. R. 25.243—June 03, 2015.
- Docket No. 44361—Sharyland Utilities, LP's Request for Approval of an Advanced Metering System (AMS) Deployment, AMS Surcharge, and Non-Standard Metering Service Fees—May 1, 2015. Docket No. 41890—Compliance Tari if of Oncor Electric Delivery Company, LLC Related to Non-Standard Metering Service Pursuant to PUC SUBST. R. §25.133—March 11, 2014.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 20A – E

IN THE MATTER OF THE VERIFIED APPLICATION OF BLACK HILLS COLORADO ELECTRIC, LLC FOR APPROVAL OF ITS TRANSPORTATION ELECTRIFICATION PLAN, READY EV, FOR PROGRAM YEARS 2021 - 2023 AND FOR RELATED TARIFF APPROVALS.

State of Colorado City and County of Denver

) SS.

Affidavit Adopting **Direct Testimony and Attachments**

P. Grant Gervais being duly sworn, states that he is the P. Grant Gervais whose Direct Testimony and Attachments in the above-captioned proceeding accompany this Affidavit.

P. Grant Gervais further states that such Direct Testimony is a true and accurate statement of his answers to the questions contained therein, and that he does adopt those answers as his sworn Testimony in this proceeding. P. Grant Gervais further states that such Attachments that accompany his Direct Testimony are true and accurate.

On April 24, 2020, appeared P. Grant Gervais, not in my physical presence but rather appearing remotely by means of communication technology from 7830 S. Hill Circle, Littleton, Colorado, 80120, known to me to be the person who executed the foregoing instrument, and acknowledged that he executed the same as his free act, and deed.

My Commission Expires: August 24, 2020

