Exhibit No. __ (BLR-1T)
Docket No. UG-20_____
Witness: Brian L. Robertson

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. CASCADE NATURAL GAS CORPORATION, Respondent.	DOCKET UG-20______

CASCADE NATURAL GAS CORPORATION

DIRECT TESTIMONY OF BRIAN L. ROBERTSON

June 19, 2020

TABLE OF CONTENTS

I.INTRODUCTION

Q. Please state your name and business address for the record.

A. My name is Brian L. Robertson. My business address is 8113 W Grandridge Blvd., Kennewick, WA 99336.

Q. By whom are you employed and what is your title and job duties?

A. I am employed by Cascade Natural Gas Corporation ("Cascade" or the "Company") as Supervisor of Resource Planning. My job duties include supervising two analysts as well as performing long-term forecasting, market research, upstream modeling, and other duties regarding the Integrated Resource Plan.

Q. Please describe your educational background and professional experience.

A. I graduated from Central Washington University with a degree in Actuarial Science. After graduating, I joined Cascade in February 2014 as a Regulatory Analyst. I joined the Gas Supply department in March 2015 as a Resource Planning Analyst II. In July 2016, I was promoted to Senior Resource Planning Analyst. In June 2019, I was promoted to Supervisor of Resource Planning.

Q. Have you previously submitted written testimony to or testified before the Washington Utilities and Transportation Commission ("Commission") or another regulatory commission?

A. Yes. I previously testified before this Commission in Cascade's most recent Washington rate cases, Dockets UG-152286, UG-170929, and UG-190210. I have also testified before the Public Utility Commission of Oregon in Cascade's recent Oregon rate cases, Dockets UG 347 and UG 305.

II. SCOPE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. My testimony presents the results of Cascade's weather normalization study that I performed for this case. Based on this analysis, I show the adjustments necessary to establish the "normalized" level of therm sales that would have been made during calendar year 2019 ("Test Year"), if Cascade had experienced "normal" weather during this period. The adjustments that I recommend here only apply to the Company's Residential and Commercial Schedules, 503 and 504.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes, I sponsor the following exhibit:

Exhibit No. __BLR-2 Weather Normalization Inputs

Exhibit No. __BLR-3 Weather Normalization Results

Exhibit No. __BLR-4 Weather Normalization Results Comparison

Exhibit No. __BLR-5 Results Comparison to Customer Growth

Exhibit No. __BLR-6 Revenue Impact

III.WEATHER NORMALIZATION

Q. As background, please explain the recent history leading to adoption of the Weather Normalization methodology performed by Cascade for this case.

A. In Docket UG-152286, Cascade and Commission Staff worked together to formulate the Company's Weather Normalization methodology in use today.[1] This same methodology

[1] *Wash. Utils. & Transp. Comm'n v. Cascade Natural Gas Corporation*, Docket UG-152286, Order 04 at ¶¶ 13 and 32 (July 7, 2016); *See also*, Exhibit No. JT_1T at 24:14-25:5.

was used to set rates in Dockets UG-170929 and UG-190210.[2] The agreed-upon methodology is a linear regression model that examines ten years of National Oceanic and Atmospheric Administration ("NOAA") weather data and ten years of historical therm usage per customer per month for residential and commercial customers and the monthly heating degree days ("HDDs") for Cascade's four weather locations: Bellingham, Bremerton, Walla Walla, and Yakima.[3] The model produces an intercept that indicates the "base load" therms per customer. The model also provides a best fit coefficient of use per customer for each month and weather location for both the residential and commercial customer classes. The best fit coefficient represents the heat sensitivity use per customer per HDD. The "normal" HDDs less the "actual" HDDs and actual customers from the Test Year are applied to the heat sensitive coefficient to produce an adjustment for the Test Year. The weather normalization adjustment is then added to the actual recorded therms to calculate weather normalized therms.

Q. What is the purpose of weather normalizing gas usage when setting rates?

A. The purpose of weather normalization is to stabilize delivery service gas revenues and to reduce the impact of extreme weather on gas bills. The Company's billing determinants used to set rates in this case are based on weather-normalized volumes from the Test Year. Without adjusting the Test Year volumes to account for weather, the Test Year volumes used to calculate revenues may be distorted, potentially resulting in the over- or under-collection of revenues. Please see Company witness Isaac Myhrum's testimony for

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[2] *Wash. Utils. & Transp. Comm'n v. Cascade Natural Gas Corporation*, Docket UG-170929, Order 06 at ¶ 81 (July 20, 2018); *Wash. Utils. & Transp. Comm'n v. Cascade Natural Gas Corporation*, Docket UG-190210, Exhibit No.__(BLR-1T) at 2 (Mar. 29, 2019).

[3] *Wash. Utils. & Transp. Comm'n v. Cascade Natural Gas Corporation*, Docket UG-152286, Joint Settlement Agreement at ¶ 44 (May 13, 2016).

discussion regarding the Company's use of weather-normalized volumes for the Test Year in this case.

Q. Has Cascade made any changes to the agreed-upon methodology for this case?

A. Yes, it has. The Company is proposing a minor change to the methodology to calculate the weather normalization adjustment.

Q. What change is Cascade proposing?

A. Cascade is proposing to use the weather normalization regression results to calculate weather normalized therms, rather than calculating an adjustment to add or subtract to the actual recorded therms.

Q. Please explain further the approach of calculating an adjustment to actuals in the current methodology.

A. In the current methodology, once the regressions are calculated, the next step is to subtract the normal HDDs from the actual HDDs and then multiply by the respective monthly coefficient. That value is then multiplied by customers and number of days in the month. The value calculated represents the adjustment. If the normal HDD for a month is greater than the actual HDD for that same month, this will provide an upward adjustment; conversely when actual HDDs are greater than normal HDDs, this approach will produce a downward adjustment. The final step is to add the adjustment to the actual HDDs, which calculates weather normalized therms.

Q. Please explain your proposed change to this approach.

A. Cascade proposes to eliminate the final step. Instead, once the regressions are calculated, the proposed next step is to take the normal HDDs for a month and apply it to the respective regression coefficient to calculate the impact normal weather has on usage. The resulting value would then be added to the intercept (representing "base load" therms per customer) multiplied by the number of days in the month as well as the trend variable if the variable is statistically significant. Statistical significance is the likelihood that a result or relationship is caused by something other than chance, and to be statistically significant, a variable had to have a probability value (or "p-value") of less than .05. In Cascade's case, a low p-value means the variable is useful in predicting usage. Then the total value is multiplied by customers and number of days to get weather normalized volumes for the month.

Q. Please provide an example to illustrate how this calculation will be performed.

A. I will calculate the weather-normalized usage for Bellingham residential customers in January 2019 as an example (as seen in cell O124 on tab '503 results' in BLR-3):

1. Multiply Bellingham normal HDDs (cell B3 on tab 'Normal HDDs' in BLR-3) by the respective January coefficient if found statistically significant (cell B4 on tab '2019' in BLR-3).

2. Multiply the intercept coefficient if found statistically significant (cell B3 on tab '2019' in BLR-3).

3. Multiply the trend coefficient if statistically significant (not statistically significant for Bellingham residential customers in 2019) by the respective value (109 for January).

4. Add steps 1 through 3 together and then multiply by the number of customers (cell B231 on tab 'Customers' in BLR-3). There is no adjustment calculated for computing weather normalized therms but, if needed, the difference can be calculated by subtracting actual therms from weather normalized therms.

Q. Why is Cascade proposing this change?

A. The approach in the current methodology has inadvertently created errors when calculating the weather normalized adjustment, and the errors have caused extra volatility in the weather normalization adjustment. This volatility may result in over- or under-adjusting weather normalized therms, which would flow through to the Company's revenue calculations. For example, in the current model, a situation could happen where weather is warmer than normal but actual usage is still higher than expected, and the current methodology would result in an adjustment to increase the already higher-than-expected usage even further. In other words, instead of correcting volumes to "normal" levels, under this scenario, the weather normalization adjustment would go in the wrong direction. In contrast, the proposed methodology bypasses calculating an adjustment and only calculates weather normalized therms, thereby eliminating these errors created by the current methodology.

Q. Could you please provide an example of the situation you mentioned above, in which the current methodology would make the adjustment in the wrong direction?

A. Yes. As shown in cell D181 on 'Historical Therms' tab in Exhibit BLR-3, Bremerton residential customers had actual usage of 3,994,641 therms in November 2014. The average weather normalized value for Bremerton residential customers from 2009-2019, excluding 2014, is 3,482,137 therms, which indicates the 3,994,641 value from November 2014 should have a downward adjustment. However, since weather was warmer than normal in November 2014, there was actually an upward adjustment, moving the weather normalized therms to 4,131,192, which can be found in cell G74 on the '503 Results' tab in Exhibit BLR-3. Also, November had a higher weather normalized therm value than

December 2014 (3,779,988 therms seen in cell G75) even though November's normal HDDs are only 464 and December's normal HDDs are 628. Also, December had 96 more customers than November. Given that residential natural gas usage is heavily dependent on weather, when HDDs and customers increase, usage should increase as well. Therefore, a month with 164 more HDDs and 96 more customers should not have 351,204 fewer therms.

Q. Are there other examples like the one described in the previous question?

A. Yes, but not as extreme. For example, February and March of 2016 for Bellingham residential customers essentially have the same weather normalized usage even though the average difference between the months is typically about 700,000 therms, with February having higher usage than March. Strangely, in 2013 for Bellingham residential customers, the difference in usage between February and March was 1.5 million therms—over twice as much as usual. We have seen a number of similar occurrences, with varying degrees of volatility caused by the current methodology.

Q. Does the volatility always result in an adjustment in the "wrong" direction?

A. No. However, based on our review of historical data and our experience working with the methodology, we believe that there are examples in which the adjustment either went too far or did not go far enough, even though the adjustment went in the "right" direction.

Q. Have you analyzed the month-to-month and year-to-year variance any further?

A. Yes. I analyzed the variance and provide a comparison of the current and proposed methodologies in Exhibit BLR-4. In the 'Current Methodology' tab I have calculated the standard deviation of the month-to-month change for Bellingham residential. I have done the same in the 'Proposed Methodology' tab. The results show that the proposed methodology provides less variance on a month-to-month basis than the current methodology. In the 'Annual Comparison' tab, a year-over-year variance comparison was run, and again, the proposed methodology provided less variance than the current methodology. I observed the same results for Bremerton, Walla Walla, and Yakima for both residential and commercial.

Q. Has Cascade tested both the current and proposed methodologies?

A. Yes, it has. Cascade has weather normalized each year from 2009-2019. For each year, the historical data includes the previous nine years and the year itself to calculate the regressions. For example, 2014 used 2005-2014 for the ten years of historical data. The historical input data can be found in Exhibit BLR-2. The inputs and the regression analysis are consistent between the two methodologies. The calculation for weather normalization adjustments and weather normalized therms results are located in Exhibit BLR-3.

Q. What do the results show?

A. The results show that, in comparison with the current methodology, the proposed methodology has less volatility from year-to-year changes and the year-to-year changes better reflect actual growth. Exhibit BLR-5 provides the actual customer growth rate and the growth rate in therms from the two weather normalization methodologies. For both residential and commercial, the proposed methodology is closer to the actual growth rate than the current methodology. This can be seen on the 'Comparison' tab of Exhibit BLR-5. Also, as seen in columns L-O on the 'Comparison' tab in Exhibit BLR-5, the proposed methodology has less year to year change, proving again that the proposed methodology has less volatility than the current methodology. As I explained above, the goal of the weather normalization methodology is to stabilize delivery service gas revenues and to reduce the impact of extreme weather on gas bills. The Company's analysis demonstrates that the proposed methodology calculates weather normalized therms that will stabilize revenues and bills better than the current methodology.

Q. Please provide the results of Cascade's weather normalization study for the Test Year.

A. The proposed methodology described above produced the following conclusions and Test Year weather normalized therms: residential therm usage is calculated to be 130,528,548 therms; and commercial therm usage is calculated to be 92,679,715 therms. These are provided in cells D15 and G15 of the "Test Year Results" tab in Exhibit BLR-3.

Q. What is the revenue impact of Cascade's proposed weather normalization methodology on the Test Year?

A. Cascade compared the revenue requirement calculation from the current methodology with the proposed methodology. In comparison with the current methodology, the proposed methodology results in about $338,701 less in residential revenue and $731,632 less in commercial revenue, which results in $1,070,333 in total revenue decrease for the Test Year, as shown in Exhibit BLR-6.

Q. Does this conclude your testimony?

A. Yes.