

Staff Briefing Papers

Volume IV - Sales Forecast & Class Cost of Service Study

Meeting Date	August 4, 2020 (Oral Argument) August 6, 2020 (Deliberations)	Agenda Item **1
Company	Great Plains Natural Gas Co., a Division of Montana-Dakota Utilities Co.	
Docket No.	G-004/GR-19-511	
	In the Matter of the Petition by Great Plains Natural Gas Co., a Division of Montana-Dakota Utilities, Co., for Authority to Increase Natural Gas Rates in Minnesota	
Issues	<ol style="list-style-type: none"> 1. Should the Commission adopt the ALJ's recommendations regarding Great Plains' test-year sales forecast? 2. Should the Commission adopt the ALJ's recommendations regarding Great Plains' class cost of service studies submitted in this proceeding? 	
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Relevant Documents

Date

Relevant documents are listed on the cover page of Vol. I of the briefing papers. References to the case record are provided in the footnotes in the briefing papers

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I. Test Year Sales Forecast

A. Statement of the Issue

Should the Commission adopt the ALJ's recommendations regarding Great Plains' test-year sales forecast?

B. Resolved Issues¹

The Department and Great Plains (GP) have agreed to:

- a. accept GP's sales forecast for test year 2020 as reasonable;
- b. require GP to retain the data for customers even if there is a change in the rate structure;
- c. decide whether it is reasonable for GP to make assumptions about its data in the event Great Plains proposes a change in rate structures in the future, in future cases, and not address it in this docket;
and
- d. continue the compliance requirements set forth in Paragraph 16 of the 2015 Rate Case Order.

C. Great Plains' Test-Year Customer Count and Energy Sales

The Company's test-year sales estimate is 8,488,170 Dk and corresponding revenue of \$23,868,755.

A detailed break-down of Great Plains' test-year customer count, sales, and revenue for the test-year are given further below in a Table 400 below:

¹ The Department Post-Hearing Brief, p. 81.

Table 400			
Test-Year Projected 2020 Customer Count, Energy Sales and Revenue (Normalized)			
Customer Class	Billing Units [#]	Sales (Dk)	Revenue [*]
Residential	18,808.0	1,527,457	\$10,145,514
Firm General	3,078	1,342,053	\$7,896,682
Small Firm General	2,014.0	286,401	\$2,044,777
Large Firm General	1,064.0	1,055,652	\$5,851,905
Small Interruptible	120.4	622,808	\$2,545,207
Sales	92.5	392,421	\$1,790,007
Grain Dryers	21.9	145,269	\$641,161
Transportation	6.0	85,118	\$114,039
Large Interruptible	22.0	4,995,852	\$3,281,352
Sales	7.0	359,600	\$1,307,839
Grain Dryers	2.0	46,370	\$171,673
Transportation	8.0	763,905	\$485,212
Transportation - Flex {82-1}	0	0	
Transportation - Flex {TF-2}	1.0	596,861	\$105,660
Transportation - Flex {TF-3}	1.0	656,155	\$168,339
Transportation - Flex {TF-4}	2.0	1,564,495	\$820,873
Transportation - Flex {TF-5}	1.0	1,008,466	\$221,756
Total Minnesota	22,028	8,488,170	\$23,868,755

Source: Shoemake Direct Testimony, Exhibit ___ MTS-1; Statement E, Schedule E-1; and pre-filed Document [20198-155457-05](#).

[#]There is a slight discrepancy between total billing units (22,028) and total customers (22,038). This is because of some seasonal small interruptible and grain dryer customers who take service for a fraction of the year. When the fraction is converted to full year-equivalent, the virtual customer count becomes higher than actual billed customers. See, pre-filed Summary of Billing Units and Customers, Document ID [20198-155457-03](#).

^{*}Includes CIP revenue.

D. Department's Analysis and Recommendations

1. Department's Position

The Department noted that Great Plains complied with the Commission's filing requirements² and concluded that the Company's proposed sales forecast is reasonable. The Department also concluded that Great Plains' regression models and sales forecasts were reasonable and that no adjustments were needed to Great Plains proposed revenues.³

The Department noted that although it had no major concerns with the Company's sales forecast approach and accompanying results,⁴ it did point to one "minor" concern relating to Great Plains' data retention.⁵

2. Department's Minor Concern with GP's Data Retention

The Department's concern relates to a requirement from the Great Plains 2016 rate case⁶ -- that Great Plains provide the following information, to the extent practicable, or explain why the information is not available:

raw sales, customer count, billing system, and weather data that is as up to date as possible and that goes back at least 20 years. (emphasis supplied)

The Department's concern is that the Company's forecast in this instant case did not use information going back at least 20 years. The Department indicated that Great Plains included only 15 years' of residential billing data and 11 years' of firm general service billing data in its weather normalization process.⁷

The Department acknowledged⁸ that Great Plains discussed a Company history of changes in customer rate classes in 2004 and 2007. Those changes resulted in, among other things, detailed billing data before 2007 not being consistent with the currently effective rate structure, which, therefore, Great Plains did not use in the instant sales forecast.

² Shah Direct / 20.

³ Shah Direct, p. 22; Department Post-Hearing Brief, p. 82.

⁴ Shah Direct, p. 13.

⁵ *ibid.*

⁶ FINDINGS OF FACT, CONCLUSIONS, AND ORDER, G-004/GR-15-879, September 6, 2016, Ordering Point 16, p. 52. Shah Direct (Department), p. 23; Shah Surrebuttal (Department), p. 52.

⁷ Shah Direct, p. 7.

⁸ Department Post-Hearing Brief, p. 85.

Great Plains elaborated⁹ that, prior to February 2004, residential and firm general service customers were served under the same rate classification as there was only one firm service rate available to customers in Minnesota. Then, in the Company's 2002 rate case (Docket No. G004/GR-02-1682), Great Plains bifurcated the firm service class into two rate classes – Residential Rate 60 and Firm General Rate 70 for both the North and South rate areas, effective January 2004. Great Plains could not align the past data with the current residential rate classification, and so the Company chose to use the data after the implementation of these new rate classifications.

Great Plains added¹⁰ that in its 2004 rate case (Docket No. G-004/GR-04-1487), the Commission approved a further rate separation within the Firm General Rate 70 class based on meters rated over or under 500 cubic feet per hour. This separation was implemented on January 22, 2007. Great Plains indicated that the customers were moved in the spring/summer of 2007. To align the data with the current separation within the firm general service rate classification, the Company chose to use the data after the implementation of this meter size designation.

Great Plains maintains that data before the time periods when billing changes were made are not consistent with the currently effective rate structure and were not used in weather normalization.

Great Plains noted that, prior to 2004, all firm service customers were billed under a single rate classification. Great Plains noted that it would have to make assumptions about the historical billing in order to re-classify the data prior to 2004 as residential or firm general service. From 2004 through mid-2007, firm general service customers were all billed under the same rate classification. Again, Great Plains indicated that assumptions would have to be made in order to re-classify the data for 2004 through mid-2007 as either small or large firm general service.

Great Plains chose to not utilize the data prior to these rate classifications to avoid making incorrect assumptions on any historical billing data not reflective of the Company's current rate structure. The Company, therefore, included 15 years' of residential billing data and 11 years' of firm general service billing data in its weather normalization process.

The Department acknowledged¹¹ that Great Plains explained that, for data prior to 2004, Great Plains would need to make assumptions about the historical billing in order to re-classify the data as residential or firm general service; and further, from 2004 through mid-2007, firm general service customers were all billed under the same rate classification, and assumptions would have to be made in order to re-classify the data for 2004 through mid-2007 as either small or large firm general service.

⁹ Shoemake Direct, p. 10.

¹⁰ Shoemake Direct, pp. 10-11.

¹¹ Shah Direct, p. 15.

The Department further acknowledged¹² that Great Plains chose to not utilize the data prior to 2007 to avoid making incorrect assumptions on any historical billing data not reflective of the Company's current rate structure.

As a result, Great Plains did not have a consistent series of data stretching back 20 years.

The Department noted that it attempted to obtain the 2004 through 2007 data for firm general classes. However, the Department could not obtain the data because the Company did not have the data available.¹³

The Company responded¹⁴ that it does not have the data available to appropriately re-classify all Firm General Rate 70 historical billing data based on the customer's meter installed at that historical time. Great Plains further stated that assumptions would have to be made based on the meter installed, customer's consumption, similar type of customer and/or service or some other assumption. For these reasons, Great Plains did not update its firm general regression models with data prior to 2008. By including only the billing data consistent with the Company's current rate structure, Great Plains is still providing 135 data points (all the monthly customer data for 2008 through March 2019) in its firm general regression models.

The Department noted¹⁵ that Great Plains was in compliance with the Commission's 2016 rate case order because it was able to explain why the data was not available.

The Department, however, noted that the lack of data was only "a minor concern at this time."¹⁶

The Department stated that, to ensure the Company's future efforts to meet the Commission's requirements in ordering paragraph 16a through 16g of the 2016 Rate Case Order, the Commission should require the Company to retain customer data such that, in the event it proposes different rate structures in the future that would impact future customer data sets, past data would still be available.¹⁷

The Department's testimony¹⁸ noted the Company has maintained customer data in each of its respective billing systems that is similar – account numbers, service identification numbers, customer rate class, volumes billed (in dekatherms); therefore, on a going-forward basis for all

¹² Shah Direct, p. 16.

¹³ Shah Direct, p. 16.

¹⁴ Shah Direct, Ex. DER-2, SS-3, p. 15 of 32.

¹⁵ Shah Direct, p. 17.

¹⁶ Shah Direct, p. 18.

¹⁷ Department Post-Hearing Brief, p. 86.

¹⁸ Shah Direct, p. 18.

customer classes, from 2008 onwards, the Company should be able to retain its customer data for future rate cases even if there is a change in the rate structure, given the unique identifiers described above that the Company maintains. If so ordered, going-forward, even if the Company decided to change its rate structure, it would not necessarily mean that the customer's historical consumption data changed or becomes unusable. This would help ensure that Great Plains has the historical data needed to develop its forecasts in future rate cases

3. Department's Recommendation to Adopt GP's Test-Year Sales Forecast

The Department made the following recommendations:

1. accept GP's sales forecast for test year 2020 as reasonable;
2. require GP to retain the data for customers even if there is a change in the rate structure;
3. continue the compliance requirements set forth in Paragraph 16 of the 2015 Rate Case Order, that is to require Great Plains to provide the following information,¹⁹ to the extent practicable, or explaining why the information is not available:
 - a. A summary spreadsheet that links together the Company's test-year sales and revenue estimates, its CCOSS, and its rate design schedules;
 - b. a spreadsheet that fully links together all raw data, to the most detailed information available and in a format that enables the full replication of Great Plains' process that the Company uses to calculate the input data it uses in its test-year sales analysis;
 - c. raw sales, customer count, billing system, and weather data that is as up to date as possible and that goes back at least 20 years;
 - d. hourly historical weather (temperature) data, rather than (or in addition to) daily historical data;
 - e. if, in the future, Great Plains updates, modifies, or changes its billing system, a bridging schedule that fully links together the old and new billing systems and validates that there is no difference between the two billing systems;
 - f. any, and all, data used for its sales forecast 30 days in advance of its next general rate case; and
 - g. detailed information sufficient to allow for replication of any and all Company derived forecast variables.

¹⁹ FINDINGS OF FACT, CONCLUSIONS, AND ORDER, G-004/GR-15-879, September 6, 2016, Ordering Point 16, p. 52. Shah Direct (Department), p. 23; Shah Surrebuttal (Department), p. 2.

E. Great Plains' Agreement with the Department's Recommendation

Great Plains agreed with the Department's recommendation and noted that it would comply with paragraphs a through g of the ordering point 16 from the 2016 Rate Case Order (GR-15-879) in its future rate case applications.²⁰

As for the retention of data, Great Plains indicated that it did not have "an issue with the Department's recommendation for the Commission to order the Company to retain its customer data for future rate cases with one exception." (emphasis supplied)

That exception is when the Company establishes a new rate structure on a going-forward basis, assumptions would have to be made on historical customer data billed at the then-applicable rates and how that historical data should now align in the Company's new rate structure for purposes of forecasting sales volumes in future rate cases.²¹ Great Plains stated that it does not believe it is reasonable to make assumptions on historical data and how that data should now fit into a current rate structure for forecasting purposes.²²

F. Pre-Evidentiary Hearing Settlement Conference

The Department noted²³ that during the prehearing settlement conference held on March 4, 2020, Great Plains agreed to the Department's recommendation that the Company be required to retain customer data for future rate cases if there is a change in the rate structure.

The Company further agreed that the question of whether it is reasonable for the Company to make assumptions about its data in future cases in the event Great Plains proposes a change in rate structures in the future, can be decided in those future cases, and need not be addressed in this docket.

G. Other Parties' Position

No other party commented on GP's test-year sales and customer forecast.

H. ALJ's Findings

The ALJ discusses the sales Forecast in Section X, paragraphs 301-325, of the ALJ's Report (pp.66-71).

²⁰ Shoemake Rebuttal, p. 2.

²¹ *ibid.*

²² Shoemake Rebuttal, p. 3.

²³ Department Post-Hearing Brief, p. 87.

The ALJ's findings and recommendations are quoted below (without footnotes):

Introduction to Forecast

301. A "test year" is the 12-month period selected by the utility for the purpose of expressing its need for a change in rates. Test year sales volumes are important factors in calculating a utility's revenue requirement because sales levels affect both revenues and expenses. Because sales levels are an integral input in calculating a utility's rates, the method of determining the sales levels must be reasonable. Therefore, reasonable sales forecasts are an essential part of the rate-making process.

302. In designing rates, test year sales volumes are used to allocate costs in the Class Cost of Service Study (CCOSS), which is then used as a benchmark comparison to establish the revenue apportionment. When establishing final rates, the test year sales volumes are used to determine the overall revenue requirements, as well as the individual tariff rates.

303. The DOC-DER analyzed the Company's sales forecast and concluded that, generally, GP's regression models and sales forecasts were reasonable and recommended no adjustments to GP's proposed revenues.

GP's Sales Forecast

304. In forecasting sales for test year 2020, GP divided its customers into eight classes: residential, small firm general, large firm general, small interruptible, large interruptible, large transportation, small transportation, and grain dryers.

305. Using these classes, GP forecasted sales for test year 2020 as follows:

2020 projected total customers: 22,007.40²⁴ customers

2020 projected total sales: 3,813,170 Dk

2020 projected total transportation: 4,665,000²⁵ Dk

306. In assessing the Company's sales forecast, the DOC-DER reviewed whether the sales forecast was based on "normal" conditions and whether adjustments were made for known and measurable changes. The DOC-DER determined that, at a minimum, to construct a reasonable forecast, the historical sales level should be adjusted to reflect sales that would occur under "normal" weather, because weather is typically the most significant factor affecting gas usage in some rate classes.

307. GP forecasted test year sales in the same manner as it did in its 2015 Rate Case: using the Ordinary Least Squares (OLS) regression analyses and averages to estimate test year sales. The Company also used input changes that were improvements over the data used in its last rate case.

²⁴ Typographical error, the correct customer count is 22,028. See the Department's Exceptions at 14.

²⁵ Typographical error, the correct figure is 4,675,000 Dk. See the Department's Exceptions at 14.

308. The DOC-DER evaluated the source of the weather data GP used to normalize sales in this case; GP's method for collecting and constructing the weighted weather data; and whether GP's forecasting methods were reasonable. The DOC-DER concluded that GP's forecasting method was appropriate because it attempted to match sales to weather data.

309. The DOC-DER also assessed how GP calculated the normal weather data that it used in its forecasted test year. The Department concluded that it had no concerns regarding GP's use of the weather data.

310. GP's test year sales forecast is the aggregate of several models for forecasting sales and the number of customers for its customer classes. Summing the total sales for all rate classes, GP determined the total sales for the Company.

311. The DOC-DER specifically assessed how "heat sensitive" test year sales were estimated by GP and how the normalized volumes were calculated for heat-sensitive customers. The Department noted that the raw data was accumulated in Excel files that were then processed through analytical software referred to as "Stata."

312. The DOC-DER also analyzed the model specifications and methods used to estimate the residential, small firm, large firm, and other heat-sensitive customer class models. With respect to the general model specifications, the Department concluded that the transformations were reasonable.

313. GP estimated 2020 test year sales for each firm rate class and each heat-sensitive interruptible and transportation customer, as well as each non-heat-sensitive interruptible and transportation customer.

314. After reviewing GP's process to calculate input data and forecasting techniques and models, the DOC-DER concluded that the Company's sales forecast approach and accompanying results were reasonable and should be adopted by the Commission.

315. While the Department accepted GP's sales forecast as reasonable, it did offer two recommendations for the Commission to include in its order for this case. The first recommendation was that GP provide, in all future rate cases, the information required in paragraph 16 of GP's 2015 Rate Case. The second recommendation was that GP be required to retain customer data for future rate cases even if there is a change in the rate structure. The bases for these recommendations are explained below.

DOC-DER Recommendations Related to Retention of Data

316. The 2015 Rate Case Order issued by the Commission contains compliance requirements related to sales volume forecasts in GP's future rate cases. The Order requires the Company to improve its forecast methodology in future rate filings by providing certain information or

explaining why such information was not available. Paragraph 16 of the 2015 Rate Case Order requires the Company to include the following data in all future rate cases:

- (a) a summary spreadsheet that links together the Company's test-year sales and revenue estimates, its CCOSS, and its rate design schedules;
- (b) a spreadsheet that fully links together all raw data, to the most detailed information available and in a format that enables the full replication of GP's process that the Company uses to calculate the input data it uses in its test-year sales analysis;
- (c) raw sales, customer count, billing system, and weather data that is as up to date as possible and that goes back at least 20 years;
- (d) hourly historical weather (temperature) data, rather than (or in addition to) daily historical data;
- (e) if, in the future, GP updates, modifies, or changes its billing system, a bridging schedule that fully links together the old and new billing systems and validates that there is no difference between the two billing systems;
- (f) any, and all, data used for its sales forecast 30 days in advance of its next general rate case; and,
- (g) detailed information sufficient to allow for replication of any and all Company derived forecast variables.

317. The DOC-DER confirmed that the Company addressed all of the above requirements in this current proceeding. However, the DOC-DER expressed a "minor" concern about the information supplied in response to the requirement of Paragraph 16(c) of the Order.

318. Paragraph 16(c) requires GP to provide "raw sales, customer count, billing system, and weather data that is as up to date as possible and that goes back at least 20 years" or explain why such data is not available.

319. The Company's sales forecast in this case did not use information going back at least 20 years. GP explained that the Company made changes to customer rate classes in 2004 and 2007. Those changes resulted in, among other things, pre-2007 billing data that was not consistent with the current rate structure. As a result, GP did not use that data in the instant sales forecast. According to GP, if the Company had used data collected prior to 2004, it would have had to make assumptions about the historical billings and re-classify the data as either residential or firm general service.

320. In addition, from 2004 through mid-2007, firm general service customers were all billed under the same rate classification. Therefore, additional assumptions would have to be made to re-classify the data from 2004 through mid-2007 as either small or large firm general service. To avoid making incorrect assumptions on any historical billing data that did not match the Company's current rate structure, GP did not utilize customer use data prior to 2007 in its sales forecast. Consequently, the Company included only 15 years of residential billing data and only 11 years of firm general service billing data in its weather normalization process.

321. To evaluate the effect of GP's exclusion of data, the DOC-DER requested IRs for data from 2004 through 2007 for the firm general classes. Despite the DOC-DER's requests, GP did not provide the data. Instead, the Company provided detailed reasons for its inability to provide data for the years prior to 2008.

322. After considering GP's explanation for the limitation in data, the DOC-DER concluded that the Company complied with the 2015 Rate Case Order because it adequately explained why the information was not available. Thus, even though GP did not provide the requested data, it was able to explain why such data was not available, as allowed in the 2015 Rate Case Order.

323. The DOC-DER recommends that the Commission continue to require GP to comply with Paragraph 16 from the 2015 Rate Case Order in all future rate cases. GP has agreed to this recommendation.

324. Because of the lack of data available before 2004 and between 2004 and 2007, the DOC-DER also recommends that the Commission require GP to retain customer data such that, in the event the Company proposes different rate structures in the future, past data would remain available to compare the different rate structures in subsequent rate cases. GP agrees to this recommendation.

ALJ's Recommendation

325. Based upon the review of the DOC-DER, the Administrative Law Judge recommends that the GP's sales forecast for test year 2020 be accepted as reasonable. The Judge further recommends that the Commission adopt the DOC-DER's recommendations regarding the retention of data and the continuation of the compliance requirements set forth in Paragraph 16 of the 2015 Rate Case Order.

I. Department's Exceptions the ALJ's Findings

The Department was the only party to file exception to the ALJ's findings regarding sales forecast.

First, the Department corrected the typographical errors in Para 305:

2020 projected total customers: ~~22,02807.40~~ 22,028 customers
 2020 projected total transportation: ~~4,6675,000~~ 4,675,000 Dk

Second, the Department offered the following modification to Para 324 (without footnotes):

324. Because of the lack of data available before 2004 and between 2004 and 2007, the DOC-DER also recommends that the Commission require GP to retain customer data such that, in the event the Company proposes different rate structures in the future, past data would remain available. ~~to compare the different rate structures in~~

~~subsequent rate cases.~~ That is, going-forward, just because the Company decides to change the rate structure does not mean the customer's historical consumption data has changed or becomes unusable. GP agrees to this recommendation.

J. Staff Comment

The Staff agrees with the Department's modification of Para. 324 in light of the Department's witness Shah's Direct Testimony at pp. 17-18.

K. Decision Alternatives – Sales Forecast

Should the Commission adopt the ALJ's recommendations regarding Great Plains' test-year sales forecast?

400. Adopt the ALJ's recommendations:

- a. accept GP's sales forecast for test year 2020 as reasonable;
- b. require GP to retain the data for customers even if there is a change in the rate structure; and
- c. continue the compliance requirements set forth in Paragraph 16 of the 2015 Rate Case Order;²⁶

and

incorporate the following corrections/modifications to the ALJ's Findings into the Order:

- d. correct the following typographical errors in Para 305:

2020 projected total customers: ~~22,02807.40~~ 22,028 customers,
2020 projected total transportation: ~~4,6675,000~~ 4,675,000 Dk;

and

- e. modify Para. 324 by incorporating the Department's modifications as follows:
324. Because of the lack of data available before 2004 and between 2004 and 2007, the DOC-DER also recommends that the Commission require GP to retain customer data such that, in the event the Company proposes different rate

²⁶ FINDINGS OF FACT, CONCLUSIONS, AND ORDER, G-004/GR-15-879, September 6, 2016, Ordering Point 16, p. 52.

structures in the future, past data would remain available ~~to compare the different rate structures in subsequent rate cases.~~ That is, going forward, just because the Company decides to change the rate structure does not mean the customer's historical consumption data has changed or becomes unusable. GP agrees to this recommendation.

401. Other action by the Commission.

II. Class Cost of Service Studies (CCOSS)

A. Statement of the Issue

Should the Commission adopt the ALJ's recommendations regarding Great Plains' class cost of service studies submitted in this proceeding?

B. Resolved Issues²⁷

The Department and Great Plains have resolved that

- a. it is not necessary for the Commission to approve any of the CCOSSs that Great Plains sponsored in this rate case;
- b. GP has agreed with the Department's recommendations regarding the classification and/or allocation methods of seven FERC accounts;
- c. GP has agreed with the Department's recommendation to perform an improved minimum-size study, with the use, for each type and size of pipe, of unit replacement cost (\$ per foot) of its installed distribution pipes; and
- d. GP will file in its next general rate case a CCOSS reflecting these recommendations.

C. Introduction

Minn. Rules pt. 7825.4300 requires that a cost of service study be filed in support of the rates proposed by a utility in a rate case. Section C of this rule provides:

A cost-of-service study by customer class of service, by geographic area, or other categorization as deemed appropriate for the change in rates requested, showing revenues, costs, and profitability for each class of service, geographic area, or other appropriate category, identifying the procedures and underlying rationale for cost and

²⁷ Department Post-Hearing Brief, p. 87.

revenue allocations. Such study is appropriate whenever the utility proposes a change in rates which results in a material change in its rate structure.

D. Purpose and Usefulness of CCOSS

The principal purpose of a Class Cost of Service Study (CCOSS or, quite simply, cost model or study) is to reveal how the total revenue requirement (the total revenue required to pay all operating and capital costs of providing service) is broken-down by customer classes.

The cost allocation deals with which customer group is responsible for what portion of the overall revenue requirement. It deals essentially with cost responsibility. Its main usefulness lies in providing a starting point for a discussion of rate design.

The revenue apportionment scheme, on the other hand, is a broader concept than cost allocation – it deals with who shall pay what portion of the utility’s revenue requirement; it encompasses considerations far more expansive than cost-causation, including ability to pay, environmental impact, energy conservation, rate shock, and such.

E. CCOSS: Three Basic Steps

A cost study is performed in three steps. The three steps capture the functions – production, transmission and the final distribution – that characterize delivery of energy to the final consumers.

The first step is called Functionalization. Costs figures are extracted from accounts kept in accordance with Uniform System of Accounts (Accounts) as prescribed by the Federal Energy Regulatory Commission (“FERC”) and functionalized according to whether they belong to production, transmission or distribution function.

The production function includes all the costs involved in the production/generation of power. The transmission function includes all costs associated with the transport of power from one geographical location to another. The distribution function includes all costs associated with the transport of power from the transmission system to the end-use consumer.

The second step is called Classification. In this step, the functionalized costs are grouped according to how they are eventually billed. Essentially, there are three types of charges for energy – demand (or capacity) charge, energy charge, and customer charge. These three components are the general determinants in monthly energy bills.

In the case of electricity, the demand or capacity costs are associated with customers’ maximum power (“kW”) demand; energy costs are driven by customers’ energy or kilowatt-hours (“kWh”) usage; and customer costs are related to the poles, wire, meters, and such equipment used to serve customers. All three charges fall on the customer according to how

much demand is placed; how much energy is consumed; and the customer charge reflects the fixed (regardless of demand placed or energy consumed) charge per month.

In the third step, the classified cost aggregates are allocated to the various customer classes – residential, commercial, and so on. Customer costs are allocated among the customer classes based on the number of customers in each class; demand or Capacity costs are allocated among the customer classes based on the demand imposed on the system by each class during specific peak hours; and energy costs are allocated among the customer classes based on the energy the system must supply to serve the various customer classes.

F. Nature of Utility Costs, CCROSS Models, and Scope for Controversy

Utility costs consist of direct costs and shared (or joint) costs.

Some cost components are direct in that they are easily identified with the function/activity that causes such costs. It is a relatively straightforward matter of determining which functions or customers are responsible for, or causing, such costs and assigning the costs to those functions. Only a small portion of a utility's costs are direct costs.

It is in the nature of public utilities that a vast portion of cost components is shared between activities/functions or services. Shared costs are inherently difficult to separate and allocate to the appropriate activities.

Shared costs arise because facilities that enable the production of one good simultaneously enable the production of other goods. If the same production facility produces cellophane tapes, post-it pads, post-it flags, and mouse trap sticky pads, costs between these products are shared but difficult to separate. Analytical methods will have to be found to functionalize, classify and to allocate costs between the four products.

In the case of electricity, for example, generation capacity of an electric utility installed to meet peak-load also “jointly” serves the base load demand. Another aspect of costs in electric utilities, in common with other multi-product firms, is that they are often common to all services supplied by a utility – e.g., overhead costs like management costs are “common” to multiple functions, such as distribution, transmission and generation.

Because of the shared nature of costs, generation, transmission and distribution costs are estimated based on assumptions and models. Unlike direct costs, joint and common costs cannot be directly assigned. The task of a cost study is to find “allocators” that apportion these joint and common costs across service categories (residential, commercial, industrial, and so on) in a cost-causative manner.

The distribution function of electric operations exemplifies most clearly the controversy surrounding classification and allocation shared, common, or joint costs. The distribution

system connects the customer to the transmission system.²⁸ The distribution function marks the network just beyond the transmission function where the power is reduced in voltage and rendered suitable for end-user consumption. This step also requires metering for purposes of billing and, more recently, load control. Shades of transmission costs and costs of meters required solely to connect customers to the network are commingled which should be separated. Some modern meters are also useful in load control and this segmented portion is properly allocated to the demand-related function.

The foundation of cost studies are subjective and different costs emerge as the assumptions and models are changed. The National Association of Regulatory Utility Commissioners (NARUC) prepared an Electric Utility Cost Allocation Manual in 1992 to act as a primer on this subject. This document notes that “a high degree of subjective judgment is required to categorize . . . elements . . . where an element performs multiple functions” (p. 72) and classification of costs can be controversial (pp. 95-96).

As the bulk of the utility costs, including natural gas distribution costs, are jointly incurred, cost classification and allocation methods are invariably controversial.

G. Great Plains’ CCROSS in this Docket

In the previous rate case, G004/GR-15-879, the Commission directed Great Plains to file three CCROSS:²⁹ a minimum system method utilizing non-aggregated distribution mains data (length in feet, original cost of construction and normalized replacement cost) per material, size, and vintage (year); an alternative CCROSS using the Basic Customer method; and any other CCROSS Great Plains found appropriate.

The Minimum System method estimates the cost a utility would have incurred to build its distribution system at some minimal capacity, and assigns this sum to customer costs. Any additional cost the utility has incurred to build its system is then attributed to the fact that customers demand more than the minimum level of capacity, and so is assigned to capacity costs. To use this method, a utility first calculates the length of pipe it has in its distribution system. Then it identifies a distribution pipe of “minimum practical size,” meaning the pipe with the smallest diameter that fairly represents what is actually installed within a utility’s distribution system. The utility calculates the average cost per foot to buy and install this small-diameter pipe, and then multiplies this by the length of pipe in the utility’s distribution system. The result is designated the customer cost; the remainder of the cost of the distribution system is designated capacity cost.

The Basic Customer method reflects the premise that the distribution system is a shared asset designed and built to provide the capacity to serve customers during periods of peak demand, and thus should generally be regarded as capacity cost. Only costs that can be traced back to a

²⁸ NARUC Electric Utility Cost Allocation Manual, p. 19.

²⁹ Findings of Fact, Conclusions, and Order, G-004/GR-15-879, September 6, 2016, p. 34.

specific customer—such as the costs of service lines, meters, billing, and collection—are classified as customer costs.

The Basic Customer method differs from the Minimum System methods in the manner in which the distribution system is classified. In the Basic Customer method, all of the distribution costs are classified as demand-related, whereas in the minimum system methods, these costs are classified between demand- and customer-related functions (using either the minimum size method or the regression method).

Great Plains filed three cost studies in compliance with the Commission’s Order – two minimum system studies and a basic customer method study. However, Great Plains was unable to perform the minimum system cost studies according to the specifications required by the Commission because of data limitations. The Company, therefore, relied upon its Basic customer method in proposing its rate design.

Great Plains’ basic customer method cost study allocated the Company’s rate base as shown in Table 401 below:³⁰

Table 401					
Great Plains: Rate Base and Return on Rate Base by Customer Class					
	<u>Rate Base</u>	<u>Oper Rev</u>	<u>Oper Exp</u>	<u>Oper Income</u>	<u>Return</u>
Residential					-5.69%
	\$19,498,024	\$10,724,136	\$11,833,553	-\$1,109,417	
Small Firm General	\$3,068,511	\$2,157,878	\$2,073,021	\$84,857	2.77%
Large Firm General	\$5,929,801	\$6,050,123	\$6,022,241	\$27,882	0.47%
Interruptible Sales - Grain Drying	\$412,595	\$836,893	\$771,587	\$65,306	15.83%
Small Interruptible Sales	\$497,593	\$1,851,523	\$1,596,498	\$255,025	51.25%

³⁰ GP rate case filing, Statement E, Schedule E-2b.

Small Interruptible Transpiration	\$120,065	\$125,181	\$67,185	\$57,996	48.30%
Large Interruptible Sales	\$540,724	\$1,330,541	\$1,272,234	\$58,307	10.78%
Large Interruptible Transportation	\$1,618,861	\$1,030,253	\$700,096	\$330,157	20.39%

Great Plains noted that its CCOSS is to be used as a guide in the distribution of total revenue requirements among customers and for the purpose of rate design.

H. Department's Comments

The Department noted³¹ that GP's cost studies were based on reasonably current data. The Department noted³² that the Basic Customer method is not supported by the Gas Rate Fundamentals (published by American Gas Association in 1987) because this method classifies distribution mains as entirely demand-related, whereas the distribution facilities are designed with the number and size of loads in mind.

The Department noted that all Basic Customer method cost studies, including the one Great Plains provided in this record, classify distribution mains as entirely demand-related. The lack of data is not an issue with Great Plains' Basic Customer method CCOSS, and with certain exceptions Great Plains has conducted the Basic Customer method CCOSS in a reasonable manner, any use of the results must reflect an understanding of the bias inherent in those results.

Even as the Basic Customer class cost of service study is designed to classify the distribution mains as 100% demand-related, yet the Department criticized that classification. The Department indicated that classifying distribution mains as entirely demand-related results in costs being under-classified as customer-related and over-classified as demand-related.³³

A practical consequence of the Basic Customer method CCOSS is that it under-estimates costs to be assigned to the Residential class, while over-estimating costs to be assigned to the other classes: the demand allocator used (allocator number 2) assigns a lower portion of costs to the

³¹ Ouanes Direct, pp. 10-11.

³² Ouanes Surrebuttall, p. 5.

³³ Ouanes Surrebuttall, pp. 5-6.

Residential class and a higher portion of costs to the other classes when compared to the customer allocator used (allocator number 4).³⁴

In particular, the Department criticized the Company for misclassifying or misallocating costs associated with the following FERC accounts:³⁵

- 1) FERC Account No; 374, Land and Land Rights;
- 2) FERC Account No. 375, Structures and Improvements;
- 3) FERC Account No. 886, Maintenance of Structures and Improvements;
- 4) FERC Account No. 387, Other Equipment;
- 5) FERC Account No. 385, Industrial Measuring and Regulating Station Equipment;
- 6) FERC Account No. 890, Maintenance of Measuring and Regulating Station Equipment-Industrial;
- 7) FERC Account No. 876, Measuring and Regulating Station Expenses-Industrial;
- 8) FERC Account No. 892, Maintenance of Services; and
- 9) FERC Account No. 376, Distribution Mains.

The Department maintains that that the allocation factors used for Accounts 374 (Land and Land Rights), 375 (Structures and Improvements), 886 (Maintenance of Structures and Improvements) and 387 (Other Equipment) improperly classify the full share of these balances as demand-related.

The Department pointed out that FERC Account No. 374 includes the cost of land and land rights used in connection with distribution operations, and for that reason, is not to be classified solely as demand costs (nor solely as customer or energy costs), as Great Plains has done. The Department argued that this account should be classified and allocated on the same basis as Distribution Plant (FERC Account Nos. 374-387).

The Department criticized GP for classifying FERC Account No. 375 (Structures and Improvements), FERC Account No. 886 (Maintenance of Structures and Improvements), and FERC Account No. 387 (Other Equipment) as solely demand-related costs.³⁶ The Department recommended that these accounts be re-classified and re-allocated on the same basis as Distribution Plant.

As for FERC Account No. 385 (Industrial Measuring and Regulating Station Equipment), FERC Account No. 890 (Maintenance of Measuring and Regulating Station Equipment-Industrial), and FERC Account No. 876 (Measuring and Regulating Station Expenses-Industrial), the Department questioned the wisdom of allocating these costs to all customer classes when not all customer classes were responsible for them.

³⁴ Ouanes Surrebuttal, p. 6.

³⁵ Ouanes Direct, pp. 10-11.

³⁶ Ouanes Direct, pp. 13-15.

As for the classification of FERC Account No. 376 (Distribution Mains), the Department noted that this cost should be classified as demand- and customer-related and not just demand-related as done by the Company. The Company proposed to classify, according to the Basic Customer approach, distribution mains as solely demand costs. The Department indicated³⁷ that Great Plains assumes that demand is the only factor that drives the utility's investment in distribution mains, but that the number of customers also drive investment in distribution mains. Accordingly, investment in distribution mains should be classified as both demand and customer costs.

The Department does not recommend approving the Basic Customer method CCROSS used by Great Plains as it relies on the incorrect assumption that demand is the only driver of Great Plains' investment in distribution mains, and therefore does not adequately reflect cost causation.³⁸

As for the minimum system cost studies submitted by Great Plains, the Department noted that they are performed to determine how distribution plant investments should be classified between demand and customer costs. Here, the main issue identified by the Department was the lack of disaggregated data to provide for a meaningful minimum size study. For the two minimum system studies, Great Plains relied on the limited "plant assets for which the company has detailed book cost data by type and size," representing only 29.5 percent of the total footage of mains, to calculate the current unit replacement costs.³⁹

The Department identified several additional concerns with Great Plains' implementation of its minimum-size studies: regrouping all pipes sized less than two inches together; failure to include the available supporting data; and calculation of the customer-related cost on the basis of: (1) a limited portion of footage of mains instead of all installed distribution mains, and/or (2) book cost data instead of current unit replacement costs.

In response to discovery from the Department, the Company had provided an improved third minimum-size method study.⁴⁰ However, Great Plains' lack of detailed book cost data by type and size raised serious concerns about the reasonableness of this third study's calculated current unit replacement cost (\$ per foot) of the installed distribution pipes, especially for the steel pipes. The Department asked that the Company file a refined minimum system study in its rebuttal testimony.

Great Plains did not file such a study; the Company noted that because it was not proposing to bring the rates anywhere near even the knowingly conservative results of the Basic Customer

³⁷ Ouanes Direct, p. 18.

³⁸ Ouanes Direct, p. 26.

³⁹ Ouanes Direct. p. 30.

⁴⁰ Ouanes Direct, p. 31.

Method class study, it did not think that introducing an additional class study would be beneficial.

Thus, to reiterate, because of the Company's current data limitations, the Department concluded that there was no reasonably supported minimum-size study available in the record, and, because all Basic Customer method CCOSs, including the one Great Plains provided, classify distribution mains as entirely demand-related, use of the results would need to respect the bias.

Great Plains and the Department have agreed to the following improvements to be made in the cost studies to be submitted in the next rate case:

- (1) classify and allocate Land and Land Rights (FERC Account No. 374) on the same basis as Distribution Plant;
- (2) classify and allocate Structures and Improvements (FERC Account No. 375) on the same basis as Distribution Plant;
- (3) classify and allocate Maintenance of Structures and Improvements (FERC Account No. 886) on the same basis as Distribution Plant;
- (4) classify and allocate Other Equipment (FERC Account No. 387) on the same basis as Distribution Plant;
- (5) identify the customer classes that use special and expensive installations of measuring and regulating station equipment located on the distribution system and allocate the costs of Industrial Measuring and Regulating Station Equipment (FERC Account No. 385) and Maintenance of Measuring and Regulating Station Equipment-Industrial (FERC Account No. 890) to only those classes;
- (6) identify the customer classes that use large measuring and regulating stations located on local distribution systems and allocate the costs of Measuring and Regulating Station Expenses-Industrial (FERC Account No. 6 876) to only those classes; and
- (7) allocate Maintenance of Services (FERC Account No. 892) on the same basis as Services (FERC Account No. 380).

The Department further recommended that the Commission require Great Plains to improve its minimum-size study by the time of its next general rate case with the use, for each type and size of pipe, of reliable and supported current unit replacement cost (\$ per foot) of its installed distribution pipes.

I. Great Plains' Response to the Department

In its rebuttal testimony,⁴¹ Great Plains agreed with the Department that the allocation factors used for Accounts 374 (Land and Land Rights), 375 (Structures and Improvements), 886 (Maintenance of Structures and Improvements) and 387 (Other Equipment) improperly

⁴¹ Hatzenbuhler Rebuttal, p. 17.

classified the full share of these accounts as demand-related and that the factors used for these accounts should have been adjusted as suggested by the Department. Great Plains added that these errors were the “unintended result of using the Basic Customer Method for the classification of distribution mains.”

Great Plains further noted that Accounts 374, 375, 886, and 387 are allocated to the classes using allocation factor 13, which is a factor built based on the results of the distribution mains classification and allocation. Since the Basic Customer Method results in the distribution mains balance being allocated 100% based on the demand allocation factor the result is that factor 13 in this case ends up being essentially identical to the demand allocation factor.

Great Plains also agreed with the Department that accounts 385 (Industrial Measuring and Regulating Station Equipment), 890 (Maintenance of Measuring and Regulating Station Equipment – Industrial) and 876 (Measuring and Regulating Station Expenses – Industrial) represent plant and expenses that uniquely serve large industrial customers and are not attributable to other customer classes.

Notwithstanding the admission of errors by Great Plains, Great Plains insisted that classifying and allocating these accounts based on the Department's recommendations will not make any material difference to the results of the class study.⁴²

This is because, as Great Plains noted, these accounts are very small relative to the overall plant in service amount and overall distribution expenses total and correcting the referenced classifications and allocations would have virtually no effect on the results of the class study in this case. Great Plains indicated it will incorporate these changes in its next general rate case.

As the Department's request that Great Plains file a third Minimum System study, Great Plains responded that the CCOSs simply serve as a guide in the revenue allocation and rate design process and are not generally adhered to absolutely. Great Plains noted that because it was not proposing to bring the rates for the various classes to anywhere near even the knowingly conservative results of the Basic Customer Method class study, it did not think that introducing an additional class study would be beneficial.⁴³ This is especially true, the Company said, considering Great Plains, the Department and the OAG all agree that the Company's proposed revenue allocation is reasonable and should be adopted.

J. ALJ's Findings

The ALJ discussed the CCOS in Section XI of the ALJ's Findings (pp. 71-79).

The ALJ's findings and recommendations are reproduced below (without footnotes):

⁴² Hatzenbuhler Rebuttal, p. 18.

⁴³ Hatzenbuhler Rebuttal, p. 19.

CCOSS Objective and Characteristics

326. A Class Cost of Service Study (CCOSS) is used to identify the responsibility of each customer class for costs incurred by the utility in providing service. The CCOSS can be used to help determine how costs should be recovered from customer classes through rate design. A CCOSS addresses “cost causality,” an assessment of which costs are attributable to which customer classes so that the expenses of the utility can be fairly and appropriately allocated among the various customer classes in rate design.

327. There are three steps in performing a CCOSS. First, costs are “functionalized” or grouped according to their purpose. Second, costs are classified into three basic categories: (1) customer costs; (2) energy or commodity costs; and (3) demand or capacity costs. Third, costs are allocated to the various customer classes.

328. Costs are typically functionalized by the Uniform System of Accounts, as provided by the Federal Energy Regulatory Commission (FERC). These accounts group costs into their various functions, such as: production (costs associated with producing, purchasing, or manufacturing gas); storage (costs associated with storing gas normally during off-peak for use in times of cold weather); transportation (costs incurred in transporting gas from interstate pipelines to the distribution system); distribution (costs incurred to deliver the gas to the customers, such as gas distribution mains and meters); and other costs (costs that do not fit the above functions, including general and administrative costs).

329. The functionalized costs are then classified as “customer,” “demand,” or “energy costs,” according to how they are incurred.

330. “Customer costs” are the operating and capital costs which vary with the number of customers served rather than with the amount of utility service supplied. These costs are associated with “the theoretical distribution system that would be needed to serve customers at nominal or minimal load conditions.”

331. “Demand or capacity costs” are the expenses incurred to serve the peak demand on the system and do not directly vary with the number of customers or their annual usage. They include the costs associated with distribution mains in excess of the minimum size the theoretical distribution system that would be needed to serve customers at nominal or minimal load conditions.”

332. “Energy or commodity costs” consist of those costs that vary with the quantity of gas consumed by each class.

333. The functionalized and classified costs are then allocated among the various customer classes.

334. “Customer costs” are allocated among the customer classes based on the number of customers in each class, typically weighted to reflect, for example, differences in metering costs among customer classes. “Demand or capacity costs” are allocated among the customer classes based on the demand imposed on the system by each class during specific peak hours. “Energy or commodity costs” are allocated among the customer classes based on the energy the system must supply to serve the various customer classes.

335. The CCOSS is a mathematical model consisting of two types of variables, endogenous and exogenous variables, as well as the relationships between those variables. Endogenous variables are the variables that are determined within the model. For example, the revenue requirement for the residential class is an endogenous variable determined within the model. Its value becomes known only after running the CCOSS. Exogenous variables are the variables whose values are determined outside of the model. For example, test year costs by FERC account, sales data, or the rate of return, are exogenous variables because they are set outside of the CCOSS. The values of the endogenous variables are, by construction, dependent on the values of the exogenous variables and the specific relationships between variables included in the model.

336. Because both endogenous and exogenous variables go into the CCOSS, the revenue requirement for each customer class will depend not only on the Commission’s decision on the specific classifications and allocation methods within the CCOSS, but also on the Commission’s decisions on specific outside variables, such as the amounts and items in the rate base, expenses, the rate of return, and sales forecast. The Commission’s decisions on these variables will be reflected in final rates.

GP’s Class Cost of Service Study

337. As required by the Commission’s 2015 Rate Case Order, the Company filed three embedded class cost of service studies: two “minimum system method” studies and a “basic customer method” study. GP used the basic customer method as the Company’s starting point for its proposed rate design.

338. The minimum system method CCOSS and the basic customer method CCOSS differ in the way they classify distribution mains, which are included in FERC Account No. 376. The basic customer method CCOSS classifies distribution mains as 100 percent demand-related costs. In contrast, the two minimum system method studies used by the Company (the MS1 CCOSS and the MS2 CCOSS) classified distribution mains based on demand-related and customer-related costs on a minimum size analysis.

339. Although the studies were based on reasonably current data, GP’s proposal misclassified or misallocated costs associated with the following FERC accounts:

FERC Account No. 374, Land and Land Rights.

FERC Account No. 375, Structures and Improvements.

FERC Account No. 886, Maintenance of Structures and Improvements.
 FERC Account No. 387, Other Equipment.
 FERC Account No. 385, Industrial Measuring and Regulating Station Equipment.
 FERC Account No. 890, Maintenance of Measuring and Regulating Station Equipment-Industrial.
 FERC Account No. 876, Measuring and Regulating Station Expenses-Industrial.
 FERC Account No. 892, Maintenance of Services.

340. The DOC-DER detailed why it believed each of these eight FERC accounts had been misclassified or misallocated in the Company's initial filing. The DOC-DER recommended that the Company reclassify and reallocate these accounts, as follows, to better reflect cost causation:

- classify and allocate Land and Land Rights (FERC Account No. 374) on the same basis as Distribution Plant;
- classify and allocate Structures and Improvements (FERC Account No. 375) on the same basis as Distribution Plant;
- classify and allocate Maintenance of Structures and Improvements (FERC 1 Account No. 886) on the same basis as Distribution Plant;
- classify and allocate Other Equipment (FERC Account No. 387) on the same basis as Distribution Plant;
- identify the customer classes that use special and expensive installations of measuring and regulating station equipment located on the distribution system and allocate the costs of Industrial Measuring and Regulating Station Equipment (FERC Account No. 385) and Maintenance of Measuring and Regulating Station Equipment-Industrial (FERC Account No. 890) to only those classes;
- identify the customer classes that use large measuring and regulating stations located on local distribution systems and allocate the costs of Measuring and Regulating Station Expenses-Industrial (FERC Account No. 876) to only those classes;
- allocate Maintenance of Services (FERC Account No. 892) on the same basis as Services (FERC Account No. 380);
and,
- use for each type and size of pipe a more reliable current unit replacement cost (\$ per foot) of the installed distribution pipes than the ones provided under GP's third proposed minimum-size method (MS3) and provide in rebuttal testimony a revised minimum size CCOSS using the outcome of such a revised minimum-size method with

the adjustments to the classification and/or allocation of the FERC accounts described above.

341. In response to the DOC-DER's requests and recommendations, GP explained that these accounts represented relatively small dollar amounts when compared to the overall plant-in-service costs and distribution expenses. The Company then asserted that correcting the misclassifications and misallocations would have no material effect on the results of the CCOSS in the instant case.

342. While not reclassifying or reallocating these accounts in the current case, GP did agree to reclassify and/or reallocate the eight FERC accounts for future rate cases.

343. In the end, GP and the DOC-DER agreed that, because a reclassification and/or reallocation of the eight identified FERC accounts would have no material effect on the overall results of the CCOSS in this case, the DOC-DER did not require the Company to make the changes to the classifications and allocations in this case. The Company, in turn, agreed to incorporate the changes in classification or allocation to these eight FERC accounts in its next rate case.

Classification Methods for Distribution Mains (FERC Account 376)

1. Background

344. With respect to FERC Account No. 376, GP proposed to classify all of its distribution mains as solely demand costs, which assumed that demand was the only factor that drives the utility's investment in distribution mains.

345. The DOC-DER disagreed with this classification because the number of customers -- not just demand for gas -- drives investment in distribution mains. The DOC-DER concluded that GP's distribution mains should be classified as both demand costs and customer costs. This is because the distribution system exists to serve its two functions: (1) delivering gas to customers' residences or businesses (customer costs); and (2) ensuring that the distribution system is large enough to provide reliable service (demand costs).

346. Notably, in its 2015 Rate Case, GP classified distribution mains as both demand and customer costs. However, in the instant case, GP proposed to classify distribution mains as entirely demand costs due to "data limitations." As its rationale, GP stated: Due to the data limitations previously discussed and the resulting inability to perform a minimum system study to the specifications set forth by the Commission, the Company opted to rely on the Basic Customer Method in its embedded class cost of service study. This was accomplished by utilizing a demand factor for the allocation of the distribution mains plant balance and utilizing a customer factor for only the services, meters, service regulators, and customer billing software rate base items.

347. The “data limitations” identified by GP is that it has “very limited detail” available for pipes installed prior to when GP purchased the Company in 2000. According to GP, the “data limitations” precluded GP from providing and supporting a reliable, current unit replacement cost (per foot) of the installed distribution pipes.

2. Data Issues

348. Minnesota gas utilities generally use historical records for their distribution system, including the amount of pipe laid, the diameter of the pipe, the type of pipe (plastic or steel), and the book cost per foot of pipe for each type. The utility then inflates the costs of these projects using the Handy-Whitman (HW) Index of Public Utility Construction Costs to normalize the cost data in terms of current replacement costs. Because the construction period of a gas utility’s current distribution system generally covers several decades, equipment should be priced out at current replacement values to determine current unit replacement costs, not at original investment cost. This process provides for comparable current replacement investment values for each size and type of equipment.

349. The DOC-DER identified several concerns with GP’s implementation of its minimum-size studies, including: the lack of disaggregated data to provide for a meaningful minimum-size study; the grouping together of all pipes sized less than two inches; and the Company’s failure to include supporting data for pipes installed prior to 2000. In addition, in one or both minimum-size studies, the customer component was calculated based on a limited portion of footage of mains (instead of all installed distribution mains) and/or book cost data (instead of current unit replacement costs).

350. As a result, the DOC-DER recommended against approval of the two minimum-size methods, as initially proposed filed by GP (MS1 and MS2). The DOC-DER also recommended that GP provide, in its rebuttal testimony, an improved minimum-size method (the MS3) using the current unit replacement cost (per foot) of the installed distribution pipes for each pipe type and size. Finally, the DOC-DER recommended that GP provide a revised medium-size CCOSS using the outcome of the revised minimum-size method, with the adjustments to the classification and/or allocation of the FERC accounts that the DOC-DER recommended.

351. GP did not complete a revised minimum-size method CCOSS in response to the DOC-DER’s recommendation. Instead, GP witness Jordan Hatzenbuhler testified that: the class cost of service study serves as a guide in the revenue allocation and rate design process and is generally not adhered to absolutely. As has been discussed, the Basic Customer Method class study that was utilized is useful if the analyst recognizes the effects of classifying distribution mains as entirely demand related. Because the Company is not proposing to bring the classes to anywhere near even the knowingly conservative results of the Basic Customer Method class study, I don’t feel introducing an additional class study would be beneficial. This is especially true considering Great Plains, the Department and the OAG all agree the Company’s proposed revenue allocation is reasonable and should be adopted. I appreciate Dr. Ouanes working with Great Plains to further understand the data limitations the Company faces when preparing

minimum system studies and will take [sic] apply his suggestions when preparing the Company's next class study.

352. Because of the Company's alleged "data limitations" (which the Company asserted precluded it from providing and supporting current unit replacement costs of the installed distribution pipes), the DOC-DER concluded that there was no reasonably supported minimum-size study available in the record. Moreover, because all basic customer method studies (including the one GP provided) classify distribution mains as entirely demand-related, use of the results could not be made without recognizing the "bias inherent in those results." The "bias inherent" in the results, according to the DOC-DER, is that classifying distribution mains as entirely demand-related results in costs being under-classified as customer related and over-classified as demand related.

353. Consequently, the Department concluded that the Commission should not approve the basic customer method CCOSS, nor the three minimum-size methods and corresponding CCOSSs,630 in the record. The Administrative Law Judge concurs with the DOC-DER.

Summary of Recommendations Related to CCOSS

354. Based upon the agreements between GP and the DOC-DER, the Administrative Law Judge recommends that the Commission not approve the CCOSSs that GP presented in this case.

355. In addition, the Commission should require the Company, in its next rate case, to reclassify and/or reallocate the following eight FERC accounts, as recommended by the DOC-DER in this case: 374, 375, 886, 387, 385, 890, 876, and 892.

356. Finally, the Commission should perform an improved minimum-size CCOSS using per-foot replacement costs for each type and size of installed distribution pipes, and file such a study in the next general rate case, as recommended by the DOC-DER.

K. Exceptions

1. Great Plains

Great Plains suggested the following minor correction the ALJ's finding in Para 356:

356. Finally, the Commission should **require the Company to** perform an improved minimum-size CCOSS using per-foot replacement costs for each type and size of installed distribution pipes, and file such a study in the next general rate case, as recommended by the DOC-DER.

2. Department

The Department suggested the following modifications to Paras 350 and 356:

350. As a result, the DOC-DER recommended against approval of the two minimum-size methods, as initially proposed filed by GP (MS1 and MS2). The DOC-DER also recommended that GP provide, in its rebuttal testimony, an improved minimum-size method (the MS3) using the current unit replacement cost (per foot) of the installed distribution pipes for each pipe type and size. Finally, the DOC-DER recommended that GP provide a revised **medium minimum**-size CCOSS using the outcome of the revised minimum-size method, with the adjustments to the classification and/or allocation of the FERC accounts that the DOC-DER recommended.

356. Finally, the Commission should perform an improved minimum-size CCOSS using **reliable and supported** per-foot replacement costs for each type and size of installed distribution pipes, and file such a study in the next general rate case, as recommended by the DOC-DER.

L. Staff Comment

Staff agrees with the recommendations of the ALJ and believes the Exceptions filed by Great Plains and the Department clarify the record.

M. Decision Alternatives – Class Cost of Service Study

Should the Commission adopt the ALJ's recommendations regarding Great Plains' class cost of service studies submitted in this proceeding?

402. Adopt the ALJ's recommendations:

- a. based upon the agreement between GP and the Department, the Commission does not approve any of the CCOSSs that GP has presented in this case;
- b. the Commission will accept Great Plains' agreement to incorporate the following changes to its proposed CCOSS in its next general rate case:
 - (1) classify and allocate Land and Land Rights (FERC Account No. 374) on the same basis as Distribution Plant;
 - (2) classify and allocate Structures and Improvements (FERC Account No. 375) on the same basis as Distribution Plant;
 - (3) classify and allocate Maintenance of Structures and Improvements (FERC Account No. 886) on the same basis as Distribution Plant;
 - (4) classify and allocate Other Equipment (FERC Account No. 387) on the same basis as Distribution Plant;
 - (5) identify the customer classes that use special and expensive installations of measuring and regulating station equipment located on the distribution system and allocate the costs of Industrial Measuring and Regulating Station Equipment (FERC Account No. 385) and Maintenance of Measuring and

- Regulating Station Equipment-Industrial (FERC Account No. 890) to only those classes;
- (6) identify the customer classes that use large measuring and regulating stations located on local distribution systems and allocate the costs of Measuring and Regulating Station Expenses-Industrial (FERC Account No. 876) to only those classes; and
 - (7) allocate Maintenance of Services (FERC Account No. 892) on the same basis as Services (FERC Account No. 380);

- c. modify the ALJ's finding Para 350 by incorporating the modification suggested by the Department:

350. As a result, the DOC-DER recommended against approval of the two minimum-size methods, as initially proposed filed by GP (MS1 and MS2). The DOC-DER also recommended that GP provide, in its rebuttal testimony, an improved minimum-size method (the MS3) using the current unit replacement cost (per foot) of the installed distribution pipes for each pipe type and size. Finally, the DOC-DER recommended that GP provide a revised ~~medium~~-minimum-size CCOSS using the outcome of the revised minimum-size method, with the adjustments to the classification and/or allocation of the FERC accounts that the DOC-DER recommended.

and,

- d. modify the ALJ's finding Para 356 by incorporating the modifications suggested by Great Plains and the Department as follows:⁴⁴

356. Finally, the Commission should require the Company to perform an improved minimum-size CCOSS using reliable and supported per-foot replacement costs for each type and size of installed distribution pipes, and file such a study in the next general rate case, as recommended by the DOC-DER.

403. Other action by the Commission.

⁴⁴ The modifications suggested by the Department and Great Plains have been combined in this paragraph.