Minnesota Public Utilities Commission

Staff Briefing Papers

Meeting Date: October 15, 2015.. Agenda Item 3

Company: Northern States Power Company (Xcel)

Docket No. **G-002/M-14-654**
In the Matter of a Petition by Northern States Power Company (Xcel) for Approval of Changes in Contract Demand Entitlements for the 2014-2015 Heating Season Supply Plan effective November 1, 2014.

Issue: Should the Commission approve Northern States Power Company (Xcel) proposed demand entitlement capacity (levels) and cost changes to meet its Design Day and Reserve Margin requirements as described in the listed docket, effective November 1, 2014?

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Relevant Documents

<u>G-002/M-14-654</u>
Xcel Initial Petition...August 1, 2014
Department of Commerce (Department) Comments.. September 2, 2014
Xcel Compliance Filing – Changes in Contract Demand Entitlements.................October 31, 2014
Department Supplemental Comments ....November 25, 2014

The attached materials are workpapers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless otherwise noted.

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Statement of the Issue

Should the Commission approve Northern States Power Company (Xcel) proposed demand entitlement capacity (levels) and cost changes to meet its Design Day and Reserve Margin requirements as described in the listed docket, effective November 1, 2014?

Introduction

Northern States Power Company (Xcel) entered into various natural gas supply and interstate pipeline contracts to provide natural gas services to its customers. Xcel annually reviews and updates these contracts to ensure continued system reliability of firm natural gas supply deliveries to its customers.

Xcel's annual demand entitlement[1] petition requests Commission approval to recover certain cost and capacity changes in these interstate pipeline transportation entitlements, supplier reservation fees, and other demand-related contract costs and to implement the rate impact of this petition through its Purchased Gas Adjustment (PGA)[2] charges.

Xcel holds *Upstream* firm capacity contracts on ANR (transportation), ANRP (Storage), ANR Storage Company, and Great Lakes Gas Transmission (transportation). Xcel holds *Delivered* firm capacity on Williston Basin Interstate Pipeline (WBI) (transportation), Viking Gas Transmission (transportation), and Northern Natural Gas Pipeline (transportation and storage).

In addition, Xcel has Peak Shaving, and LNG Peak Shaving facilities that enable Xcel to store natural gas on its system for immediate use.

PUC staff reviewed Xcel's 2014-2015 Demand Entitlement petition, and the various rounds of *Comments* filed by the Department and Xcel. PUC staff believes that no unresolved issues remain between the parties. PUC staff generally agrees with the Department's November 25, 2014 recommendations for this petition, but provides additional discussion and additional decision alternatives for the Commission to consider before rendering its decision.

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[1] D*emand entitlements* can be defined as reservation charges paid by the Local Distribution Company (LDC) to an interstate natural gas pipeline to reserve pipeline capacity used to store and transport the natural gas supply for delivery to its system and contract charges associated with the LDC procuring its gas supply; these costs are recovered through the LDC's PGA.

[2] The Purchased Gas Adjustment is a mechanism used by regulated utilities to recover its cost of energy. Minn. Rules 7825.2390 through 7825.2920 enable regulated gas and electric utilities to adjust rates on a monthly basis to reflect changes in its cost of energy delivered to customers based upon costs authorized by the Commission in the utility's most recent general rate case.

Minnesota Rules

Minnesota Rule, part 7825.2910, subpart 2[3] require gas utilities to make a filing whenever there is a change to its demand-related entitlement services provided by a supplier or transporter of natural gas.

Xcel – Initial Filing

On August 1, 2014, Xcel filed its 2014-2015 *Initial Demand Entitlement Petition* requesting Commission approval for certain changes in demand entitlements, design day (DD) requirements, reserve margin, and associated cost, and further supplemented its petition on October 31, 2014.

Xcel Design Day (DD) Requirements

Xcel calculated its system 2014-2015 Design Day (DD) requirements at 809,671 Dth/day with Minnesota (MN) DD requirements at 715,945 Dth/day and North Dakota (ND) DD requirements at 93,726 Dth/d; see the Department discussion, Table 1, Column 2 (on p. 3 of the briefing papers).

Xcel Demand Entitlement Contract Levels

To transport its DD requirements, Xcel uses a series of interstate pipeline contracts to meet its annual system transportation requirements, i.e. demand entitlements. The 2014-2015 transportation demand entitlement contract levels were modified from the previous year's levels (for 2013-2014), which resulted in 856,048 Dth/day of available interstate pipeline transportation capacity with MN capacity at 756,918 Dth/day and ND capacity at 99,130 Dth/day, for a total increase of 13,737 Dth/day; see the Department discussion, Table 2, Column 2 (on p. 3 of the briefing papers).

Xcel Reserve Margin

The Reserve Margin is the difference between Xcel's transportation demand entitlements and DD requirements. Xcel stated that its reserve margin is appropriate given the need to balance the uncertainty of DD conditions, customer demand during these peak conditions, and the need to protect against firm gas supply loss to maintain system reliability; see the Department discussion, Table 3, Column 2 (on p. 3 of the briefing papers).

Xcel Demand Entitlement Contract Costs

In Docket No. 13-663 (Xcel's last approved demand entitlement petition), the Commission approved Xcel's 2013-2014 demand entitlement contract costs.[4] In this docket, Xcel proposed to recover its increased 2014-2015 demand entitlement costs; see the Department discussion, Table 4 (on p. 4 of the briefing papers).

[3] Filing upon a change in demand, is included in the Automatic Adjustment of Charges rule parts 7825.2390 through 7825.2920 and requires gas utilities to file to increase or decrease demand, to redistribute demand percentages among classes, or to exchange one form of demand for another.

[4] Approved at the June 9, 2014 Commission Agenda meeting, these factors were effective at November 1, 2013.

Department – Comments

In its September 2, 2014 *Comments* and its November 25, 2014 *Supplemental Comments*, the Department reviewed Xcel's 2014-2015 demand entitlement petition. The Department summarized the following:

Design Day Requirements, Demand Entitlements, Reserve Margin, and Modeling
From the Department's analysis, the following tables have been developed:

Table 1 – Xcel Design Day (DD) requirements in Dth/day:

	2013-2014[5]	2014-2015	Difference	% increase/ (decrease)
	(1)	(2)	(3)	(4)
Total	794,772	**809,671**	14,899	1.87%
MN	706,935	**715,945**	9,010	1.27%
ND	87,837	**93,726**	5,889	6.70%

Table 2 – Xcel Demand Entitlements in Dth/day:

	2013-2014	2014-2015	Difference	% increase/ (decrease)
	(1)	(2)	(3)	(4)
Total	842,411	**856,048**	13,637	1.62%
MN	749,325	**756,918**	7,593	1.01%
ND	93,086	**99,130**	6,044	6.49%

Table 3 – Reserve Margin Comparison

	2013-2014 Demand Entitlement Filing	2014-2015 Demand Entitlement Filing	Difference	% Difference
	(1)	(2)	(3)	(4)
Total	5.99%	**5.73%**	(0.26%)	(4.34%)
MN	6.00%	**5.72%**	(0.28%)	(4.67%)
ND	5.98%	**5.76%**	(0.22%)	(3.68%)

[5] Docket No. 13-663.

Table 4 – Estimated Annual Demand Entitlement Costs Increases - 2014-2015 per customer

	Annual Impact	Monthly Impact	Average Annual Volumes
Residential	$2.02	$0.17	87 Dth
Small Commercial	$6.62	$0.55	284 Dth
Large Commercial	$33.20	$2.77	1,463 Dth

The Department concluded that Xcel's forecasting techniques, its DD requirement calculation, and interstate pipeline demand entitlements were reasonable to serve its firm customers on peak-day.

The Department concluded that Xcel's proposed reserve margin in its October 31, 2014 *Supplemental Petition* of 5.73% was within the Department's five to seven percent rule of thumb range and concluded that Xcel's reserve margin was reasonable.

The Department noted that Xcel's proposed jurisdictional allocation fell from 88.95 percent to 88.42 percent; the Department concluded that the change was reasonable given the customer growth experienced in ND.

Based on its review, the Department concluded that Xcel's proposal appears to be reasonable.

The Department noted that Xcel began classifying storage-capacity charges as commodity costs instead of demand costs in its July 2014 PGA as directed by the Commission's June 9, 2014 Order.[6]

In its September 2, 2014 and November 25, 2014 *Comments*, the Department recommended that the Commission:

1. Approve Xcel's proposed level of demand entitlements as amended by its October 31, 2014 Supplemental Filing; and

2. Allow Xcel to recover associated demand costs through the monthly Purchased Gas Adjustment effective November 1, 2014.

[6] For Xcel's 2007-2013 demand entitlement petitions.

PUC Staff Comment

PUC staff generally agrees with the Department's September 2, 2014 and November 25, 2014 recommendations, but staff offers additional discussion and decision alternatives for Commission consideration.

Design Day and Demand Entitlement Modelling

Xcel

Since its 2004-2005 demand entitlement petition, Xcel has used its two-stage approach in developing its Design Day (DD) requirements forecast ; 1) Actual Peak Use per Customer Design Day (UPC DD);[7] and 2) Average Monthly Design Day (Avg. Monthly DD).[8, 9]

Xcel believes that its models adequately estimate its natural gas DD requirements. Xcel stated that it will continue to evaluate available models in future demand entitlement petitions to determine if adequate DD requirements are being projected.

Department

The Department concluded that Xcel's forecasting techniques were reasonable. But, as noted in Docket No. G002/M-13-663, the Avg. Monthly DD method might not represent the best option available for forecasting DD requirements. The Department commented that there were potential issues with this model: 1) where Xcel's model assumes natural gas consumption is constant at all temperatures; and 2) where the average monthly DD estimates are based on the average demand area consumption at a given temperature, as opposed to the use of peak day.

Based on its conversations with Xcel, the Department concluded that using a regression model based on daily consumption data would be very difficult due the fact that it would require estimation of daily interruptible load. Further, the Department believed that Xcel's two-stage approach counteracts some of the inherent issues of the Avg. Monthly DD method which generally results in higher forecasted DD requirements than those produced using the UPC DD method.

PUC staff

PUC staff agrees with the Department's conclusion on forecasting techniques, but staff is concerned that Xcel cannot use traditional regression analysis because it does not have daily interruptible customer data available. Further, staff believes that until Xcel is capable of capturing daily interruptible customer data it will not be able to use the Department's suggested DD regression analysis model.

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[7] See *Xcel's Initial Petition* and *Compliance Filing*, Attachment 1, Schedule 3, p. 1 of 2, a mathematical equation.
[8] See *Xcel's Initial Petition* and *Compliance Filing*, Attachment 1, Schedule 1, pp. 2-4, a statistical method using slope analysis.
[9] Xcel stated that it has not used a single regression analysis methodology since its 2004-2005 demand entitlement petition.

While Xcel's two-stage approach used to calculate its DD requirements seem to have produced reasonable DD results over the last 10 years, staff is concerned that by not using regression analysis , Xcel's calculations may (in the future) produce skewed results that could mean higher DD requirements and associated costs for its firm customers. In PUC staff's opinion, Xcel's current two-stage approach to forecasting could result in one customer class subsidizing another customer class.

Xcel's rate tariff book, in Sections 5-3 - Commercial Demand Billed Service; 5-5 – Large Firm Transportation Service; 5-10 – Interruptible Service; 5-16 - Interruptible Transportation; and 5-3 - Negotiated Transportation Service, clearly states:

> *CHARACTER OF SERVICE*
> *Delivery of gas hereunder shall be subject to curtailment whenever requested by Company. Service shall be provided through a Company owned and maintained meter with telemetering or other automated meter reading capabilities installed. Customer shall provide, install, and maintain a weatherproof phone service and electrical service outlet with appropriate grounding for telemetering equipment.*

From its understanding of the above tariff language which requires automated telemetering for interruptible and other services, PUC staff is of the opinion that the Commission may wish to ask Xcel to explain why daily interruptible data is not available for use in a DD regression analysis model. This explanation could be provide either at the Commission's October 15, 2015 Agenda meeting or could be provided in a compliance filing. PUC staff believes that if the appropriate data were available, a regression analysis could be used to further verify Xcel's DD requirement calculations. This additional analysis would provide further assurance that Xcel firm customers are not paying for excess interstate pipeline capacity.

Proposed Interstate Pipeline Transportation Contract Changes

Xcel

Xcel made several changes to its demand entitlement transportation capacity portfolio, see the following.

Changes in Northern Natural Gas (NNG) entitlements

- Xcel added 4,036 Dth/day at Brainerd, MN, where actual growth exceeded its projections and to provide service to its new areas.[10]

- Xcel added 1,100 Dth/day of firm capacity at Red Wing, MN.[11]

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[10] Where new customers converted from propane to natural gas service. Xcel acquired 3,981 Dth/day of additional capacity at Brainerd, MN, which was necessary to meet the Brainerd growth to ensure adequate firm capacity and maintain its five percent reserve margin in the event of DD conditions. In addition, the pre-existing Brainerd contract capacity ratcheted up under contract terms to 4,894 Dth/day from 4,839 Dth/day (the 2013-2014 demand entitlement level), for an increase of 55 Dth/day.

[11] This additional capacity was necessary to ensure adequate DD requirements and to maintain a five percent reserve margin for this area.

- Xcel added 1,050 Dth/day of firm capacity at Kandiyohi, MN.[12]

- Xcel added 431 Dth/day of firm capacity at St. Cloud and Becker, MN.[13]

- Xcel added NNG capacity of 5,629 Dth/day at Carlton to provide natural gas supply receipts from Great Lakes Gas Transmission which is redelivered to Chisago for distribution within Xcel's Northern MN service areas. This NNG capacity is a short-term replacement for VGT capacity was not available because VGT pressure restrictions.[14]

Changes in Viking Gas Transmission (VGT) entitlements

- Xcel renewed contract AF0103 for 10,000 Dth/day of annual capacity, the previous contract was for an annual capacity of 10,000 Dth/day with an additional 5,000 Dth/day for the summer months. During its review, Xcel determined that it was long on summer capacity and the additional 5,000 Dth/day was not needed. The renewed contract saves Xcel's ratepayers $120,000 annually.

- Xcel extended VGT contract AF0156, for an additional 26 months from the original expiration date in 2017. This contract amendment was necessary to support the VGT construction project that converted its system into a bi-directional system, which provided Xcel greater natural gas supply flexibility.

- Xcel acquired a 15,000 Dth/day annual contract to serve new DD requirements expected in the Holdingford and Barnesville service areas[15] and to serve additional system requirements.

- VGT's RP14-1185 rate case filed at the Federal Energy Regulatory Commission (FERC) resulted in increased VGT demand rates.[16] The new VGT demand rates resulted in an increase of $1,298,000 to Xcel's demand entitlement costs.

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[12] Xcel stated that during the extended cold of the 2013-2014 heating season, Kandiyohi demand was consistently above its firm upstream capacity entitlement. To compensate for this capacity shortfall, Xcel acquired this capacity to meet its DD requirements, to maintain a 5% reserve margin, and capacity required to serve its new service areas where new customers converted from propane to natural gas service.

[13] Xcel projected that it needed 380 Dth/day of additional capacity to serve its Paynesville lateral and 51 Dth/day to serve its Watkins lateral. If Xcel did not acquire the additional capacity, it projected that these laterals would outgrow its DD requirements.

[14] Xcel originally planned to acquire a 10,646 Dth/day winter contract (*Initial Petition*) to meet its projected DD requirements that replaced an expired 10,542 Dth/day winter contract. But, because VGT was required to reduce its operating pressure while the pipeline underwent safety testing.[14] The reduced pressure decreased the amount of gas that could be transported by VGT, thus Xcel's desired capacity was not available for the 2014-2015 heating season. This capacity costs Xcel's firm customers an additional $286,000 over the VGT capacity. Xcel further lowered its *Initial Petition* requested reserve margin from 6.3% to 5.7% to provide the remaining DD requirements.

[15] Xcel's new MN service areas that converted from propane to natural gas services and service areas with certain receipt points.

[16] The major cause of this rate increase is due to contract terminations by other VGT's system customers.

Changes in Great Lakes Gas Transmission (GLGT) entitlements

- Xcel replaced an expired GLGT 6,706 Dth/day winter contract with a similar winter contract of 9,248 Dth/day. The contract was necessary to support Xcel's ANR Storage withdrawals.

Department

The Department concluded that Xcel's calculated DD requirements and demand entitlements were reasonable to serve its firm customers on peak-day.

PUC staff

PUC staff agrees with the Department's conclusions.

Xcel's Storage Contracts and Administrative Agreement

Xcel

In this docket, Xcel made the following changes to its ANR storage contracts:

Changes in ANR Storage entitlements

- Xcel renewed its ANR Storage contract and slightly increased storage capacity from 994,305 Dth to 1,165,185 Dth.[17] Xcel decreased its daily withdrawal capacity from 15,297 Dth/day to 9,248 Dth/day, to provide it with an extended winter season withdrawal period of 125 days.

- Xcel renewed transportation and other storage contracts on ANR Pipeline, ANR Storage, and Great Lakes Gas Transmission necessary to meet its DD requirements.[18]

As discussed by Xcel in Docket No. 15-149, it developed an administrative agreement (capacity utilization program) in 2007 between its retail natural gas and electric generation operations. This agreement granted each operation full access to the total combined withdrawal and injection rights when one operation is not fully using its storage rights. Xcel stated that it maintains separate NNG natural gas storage contracts for its retail natural gas and electric generation operations, including separate reservation and capacity requirements for each operation.[19]

Xcel justified the agreement, by stating that it was able to avoid separate storage injection and withdrawal charges occurring on the same day by the different operations where it would normally incur the storage charges for each transaction, thus saving its customers money.

[17] This storage contract provides Xcel with greater natural gas supply flexibility and natural gas supply price protection during the winter months. Xcel stated that the flexibility and price protection were important given the 2013-2014 winter season that challenged its natural gas supply availability and unusual natural gas price volatility.

[18] Xcel was able to negotiate lower contract costs by extending the terms for a longer period. For this docket, Xcel realized a minor demand entitlement cost decrease of $13,000. But, over the next three years Xcel will realize a cost decrease of approximately $560,000 from current cost levels.

[19] Separate storage inventory balances were maintained based on each operations injection and withdrawal amounts. Xcel's storage management segregates and tracks storage inventories by the natural gas purchased and transported by each operation for injection. Storage withdrawals were tracked based on which operation transported gas from storage.

Xcel further stated that year-round reliability and price stability were important considering its shift toward more natural gas electric generation. Xcel further stated that beginning in the 2013-2014 heating season, it planned to cover all of its winter natural gas electric generation gas supply requirements through its storage commitments.

Department

The Department recommended to the Commission that it should approve Xcel's storage contracts.

PUC staff

PUC staff does not necessarily disagree with the Department's recommendation, but staff does have a few concerns.

From this docket's record, PUC staff is not able to determine Xcel's storage commitments with NNG, ANR, or any other company. PUC staff believes that the Commission may wish to require Xcel to provide its storage reservation and capacity entitlements (commitments), by contract, as part of its demand entitlement petition.[20]

As a result of the October 1, 2015 Commission Agenda meeting, Xcel agreed to provide the requested information. Specifically, Xcel agreed to:

> ... *make a compliance filing 30 days after the Commission's Order that fully explains its storage contracts with the Northern Natural Gas Company and the arrangements and agreement between Xcel's retail natural gas and electric generation operations, complete with storage reservation and capacity quantities for each operation for the last three years with explanations for any variations in the storage balances through the three years.*

Once this information is provided, PUC staff believes that the information will assist staff in understanding how Xcel uses its various storage (and other) agreements and arrangements between its various business segments, for example, between its retail natural gas and electric generation operations. PUC staff believes this information will help to ensure that one of Xcel's operations is not subsidizing its other operation.

[20] This information would enable staff to determine if Xcel has sufficient transportation entitlements to transport natural gas to and from storage and to further determine how many days of storage Xcel has available.

Comparison of Xcel's Reserve Margin to Other LDC Reserve Margins

Xcel's proposed a 5.7 percent reserve margin[21] for its 2014-2015 demand entitlement petition, the difference between its calculated DD requirements and demand entitlements. The Department generally considers a 5 percent reserve margin adequate. The Department concluded that Xcel's proposed reserve margin is acceptable in this proceeding and recommended to the Commission that it approve the calculation. For comparison purposes, PUC staff incorporated the Department's Table G9 reflected in its May 5, 2015 AAA Report in Docket No. 14-580, for 2013-2014 (the previous year) that illustrates other Minnesota natural gas utilities' reserve margins, see the following table:

Table 8: Comparison of Minnesota Natural Gas Utilities' 2013-2014 Reserve Margins

Company	Design-Day in Mcf	Demand Entitlements in Mcf/d	Reserve Margin
GMG[22]	8,917	9,559	7.20%
Great Plains[23]			
North	14,140	15,000	6.08%
South	15,293	15,645	**2.30%**
MERC			
Consolidated[24]	50,048	52,959	5.82%
NNG[25]	245,878	256,385	4.27%
Albert Lea[26]	13,035	14,219	**9.08%**
CenterPoint[27]	1,288,000	1,340,099	4.04%
Xcel Gas[28]	706,935	749,325	6.00%
Total Minnesota	2,342,246	2,453,191	**4.74%**

PUC staff agrees with the Department's recommendation that Xcel's proposed 5.7 percent reserve margin is reasonable.

[21] See Xcel's October 31, 2014 compliance filing.
[22] From 2013-2014 demand entitlement petition, Docket No. 13-730.
[23] From 2013-2014 demand entitlement petition, Docket No. 13-566.
[24] From 2013-2014 demand entitlement petition, Docket No. 13-669.
[25] From 2013-2014 demand entitlement petition, Docket No. 13-670.
[26] Interstate Gas' 2013-2014 demand entitlement petition, Docket No. 13-579.
[27] From 2013-2014 demand entitlement petition, Docket No. 13-578.
[28] From 2013-2014 demand entitlement petition, Docket No. 13-663.

Decision Alternatives

Department Recommendations:

1. Approve Xcel's proposed level of demand entitlements as amended by its October 31, 2014 Supplemental Filing; and

2. Allow Xcel to recover associated demand costs through the monthly Purchased Gas Adjustment effective November 1, 2014.

Additional Decision Alternatives:

3. Require Xcel to explain why daily interruptible data is not available for use in a DD regression analysis model. This explanation could either be provided at the Commission October 15, 2015 Agenda meeting or the Commission could require Xcel to provide the information in a compliance filing 30 days after the Commission's Order date.

4. Require Xcel provide its storage entitlements (reservation and capacity), by contract, in future demand entitlement petitions.