



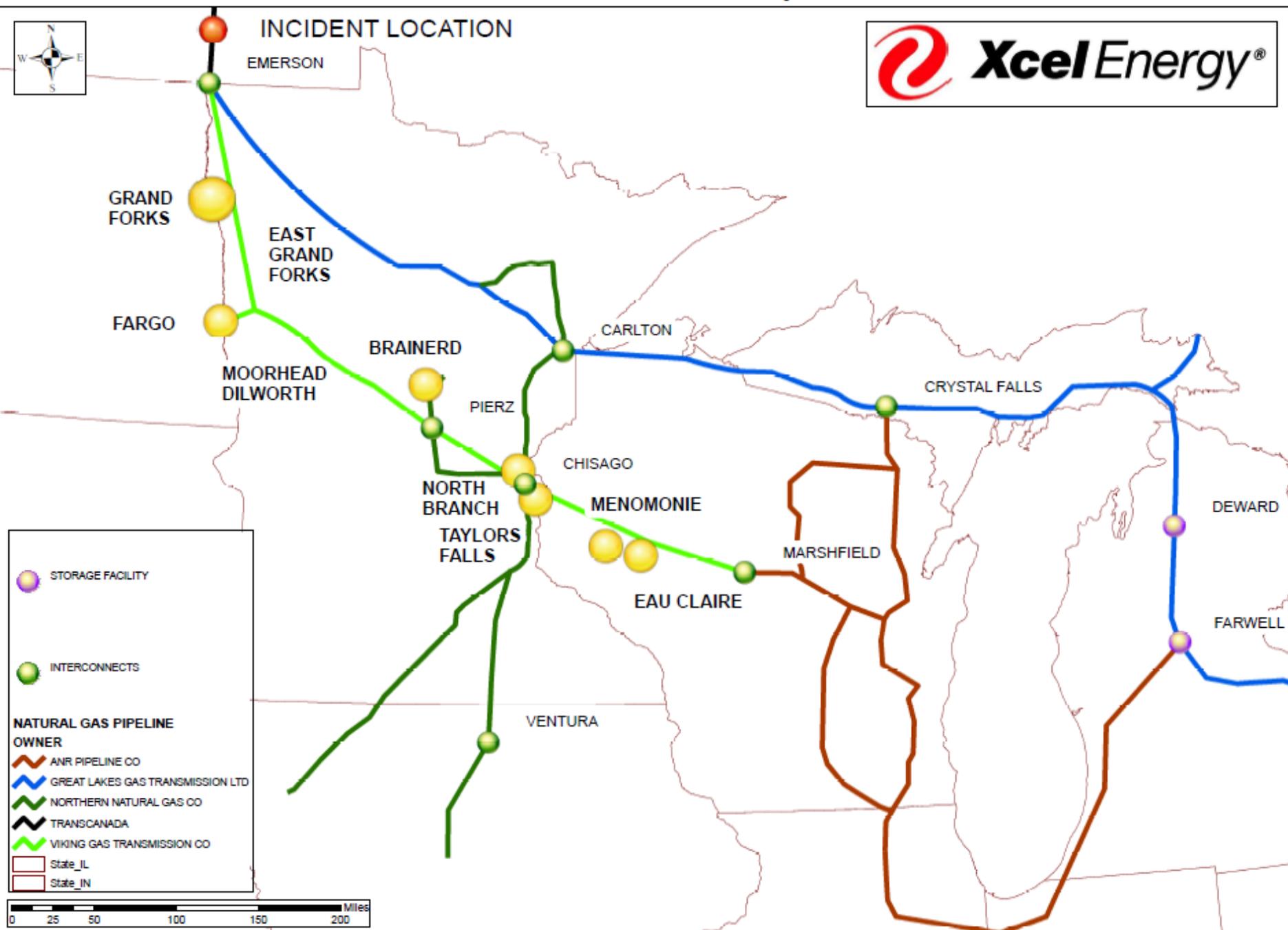
MN PUC Winter Meeting

May 29, 2014

TransCanada Event

- **Pipeline ruptures on January 25th at approximately 1:00 am**
 - Rupture impacted 30" line in above ground valve nest
- **All gas supply flowing at Emerson is cut to zero**
 - Viking flows approximately 450,000 Dth
 - Great Lakes approximately 200,000 Dth
- **Alternate supplies into Viking from:**
 - Great Lakes – St. Vincent
 - Northern Natural Gas – Chisago
 - ANR Pipeline – Marshfield
- **Temperatures are forecasted to fall Saturday night into Sunday and Monday with blizzard conditions on Sunday**
- **Gas flow from TransCanada resumes at approximately 9:00 pm on January 26th**
- **Residual effects of the outage continue through Monday night**
- **Coordinated effort of all impacted LDC in MN and WI**

TransCanada Natural Gas Pipeline Incident



TransCanada – Xcel Energy Response

➤ **January 25, 2014**

- 8:30 am – Xcel Energy is notified of the issue
- 1:45 pm – Curtailment of all Xcel Energy's interruptible customers served from Viking Pipeline
- 7:45 pm - Curtailment of all Xcel Energy's interruptible customers served from Northern Natural Gas
- 8:00 pm – Peaking plants started to reduce demand on the NNG and Viking systems.
- Evening – Outbound calling program to firm customers in the most at-risk communities requesting voluntary conservation

➤ **January 26, 2014**

- 3:00 am to 1:00 pm – Gas crews depart for Fargo/Moorhead area
- 4:30 pm – Xcel Energy notified that TransCanada will resume flow later this evening

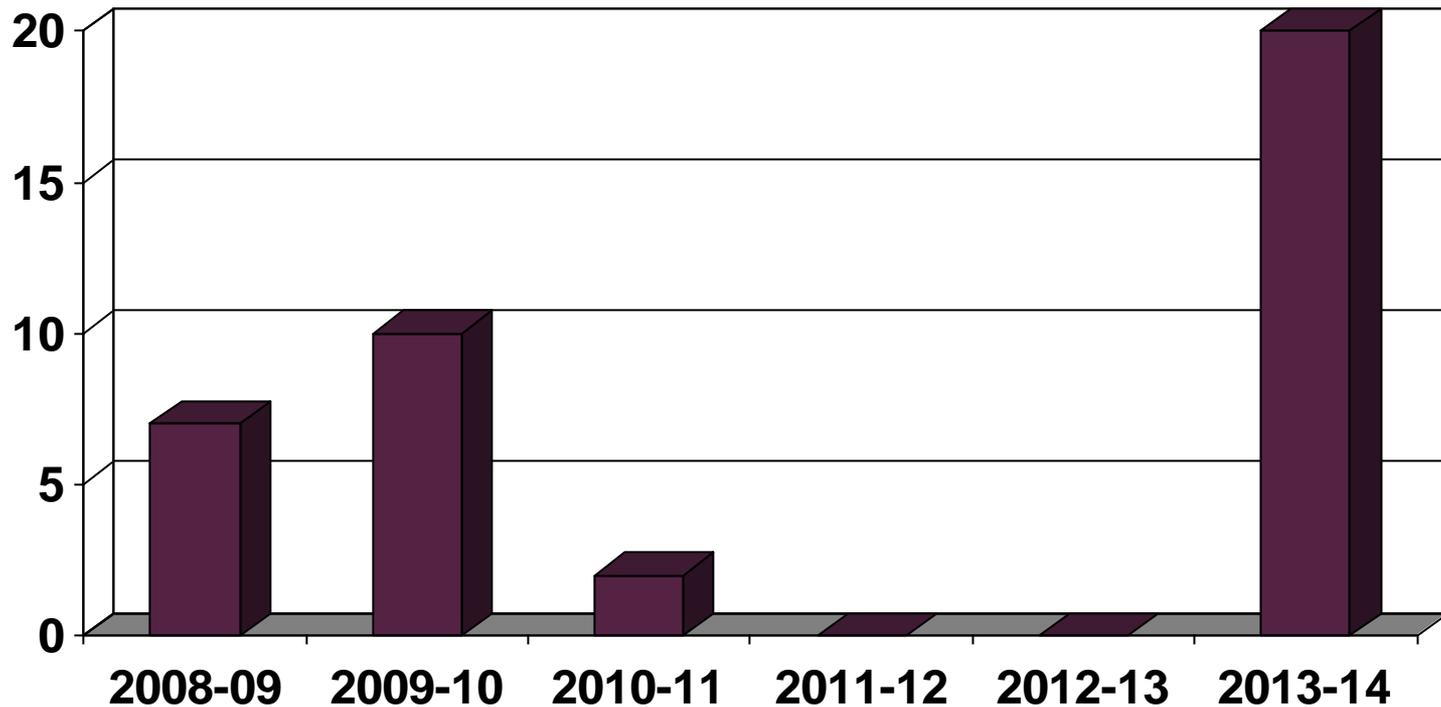
➤ **January 27, 2014**

- Suppliers unwilling to sell gas at Emerson
- Prices extremely volatile

Xcel Energy – Interruptible Customer Program

- **Participating Customers**
 - Minnesota - 475
 - North Dakota – 116
- **Design Day Load Relief**
 - Northern Natural Gas – 60,000 Dth
 - Viking - 15,000 Dth
- **Customer Benefits – In exchange for the right to be curtailed**
 - No upstream transport demand charges
 - No storage capacity charges
 - Reduced distribution rate

Curtailment Days by Heating Season



Interruption Process

- **Compare daily forecasted system load to available supply**
- **If forecasted load is above available supply**
 - The curtailment model is used to derive the estimated amount of load relief by customer priority
 - The customer priorities to interrupt are determined
 - Priorities are curtailed from highest to lowest (9 – 1a)
- **Curtailment notice is sent to Interruptible customers**
 - Envoy system (phone, e-mail, text)

Example	System
Forecasted Load	632,000
Available Supply	532,000
Deficit	(100,000)
Max Curtailment Estimate	63,200
Curtailment Called	Full

MINNESOTA COMPANY CURTAILMENT PRIORITY SYSTEM								
Gas day beginning 9 a.m. 2/6/2014								
INPUT AVERAGE DAILY TEMPERATURE -2.6 degrees Fahrenheit								
Predicted Load By Priority	Priority	NNG		Viking		ALL PIPELINES		95% C.I.
		Dth	95% C.I.	Dth	95% C.I.	Dth	95% C.I.	
	1A	3,444.93	+/- 350.77	448.27	+/- 54.73	3,893.20	+/- 405.50	
	1B	13,407.04	+/- 1,489.98	3,465.68	+/- 586.13	16,872.72	+/- 2,076.11	
	1D	0.00	+/- 0.00	86.72	+/- 12.73	86.72	+/- 12.73	
	1E	982.79	+/- 538.45	0.00	+/- 0.00	982.79	+/- 538.45	
	2	1,882.86	+/- 443.60	0.00	+/- 0.00	1,882.86	+/- 443.60	
	3	7,654.64	+/- 1,270.82	2,203.07	+/- 1,698.81	9,857.71	+/- 2,969.63	
	4	10,125.66	+/- 1,422.26	535.28	+/- 87.66	10,660.94	+/- 1,509.92	
	5	1,606.00	+/- 915.27	2,156.15	+/- 366.41	3,762.15	+/- 1,281.68	
	6	1,411.34	+/- 1,490.66	1,666.22	+/- 1,742.27	3,077.56	+/- 3,232.93	
	7	8,538.28	+/- 2,854.18	2,188.50	+/- 422.71	10,726.77	+/- 3,276.89	
	8	1,403.99	+/- 1,625.75	0.00	+/- 0.00	1,403.99	+/- 1,625.75	
Total Relief Dth		50,457.54	+/- 12,401.74	12,749.90	+/- 4,971.46	63,207.44	+/- 17,373.19	

2013-14 Heating Season

- **20 Curtailments Called**
 - Most since the 1996-97 heating season
- **The price of alternative fuels was extremely high**
 - Propane prices ranged between \$1.25 and \$4.50 per gallon
 - Supply extremely tight between mid January and early February
- **Limited Firm Program**
 - 68% of customers used all of their subscribed days
 - Program was unavailable during the TransCanada event
- **Customer Behavior**
 - 133 of 475 of Minnesota interruptible customers assessed a penalty for non-compliance during 2013-14 heating season
 - Applied penalty of \$1/therm of gas to customers who did not curtail when requested
 - \$1.5 million in billed penalties for 2013 winter

Lessons Learned

➤ **TransCanada Event**

- Xcel Energy proactively managed
- Good cooperation (customers, suppliers, pipelines)
- Good communication with customers

➤ **Gas Supply**

- Revisit supply contracting at less liquid receipt points

➤ **Interruptible Program**

- Need to revisit tariff provisions to encourage compliance
- Encourage more robust testing of backup systems

