

Foss Mfg. Special Contract

Northern Utilities, Inc. Marginal Cost Estimate template

Redacted

DG 21-144
 Northern Utilities, Inc.
 Extension of Special Contract
 with Foss Manufacturing Company
 REVISED Schedule NU-11
 Page 1 of 3

Escalating Marginal Costs using GDPLEV from Bureau of Economic Analysis data:

- 1) Go to -> <http://www.bea.gov/national/index.htm> web page;
- 2) Click on the link for *Current-Dollar and "Real" Gross Domestic Product*;
- 3) Update annual "GDP in billions of current dollars" and "GDP in billions of chained 2012 dollars" data in the table below;
- 4) Forecast years GDP estimates use EIA Energy Outlook projections (Table 20 Macroeconomics Indicators);
 Go to -> <http://www.eia.doe.gov/oiat/aeo/index.html> web page;
- 5) Update prior to start of each contract year.

Adjustment escalators to Marginal Costs

	GDP in billions of current dollars	GDP in billions of chained 2012 dollars	GDP Chain-type Price Index (2012=1.000)	Marginal Cost Study Escalation Factor Calculation
1998	9,062.8	12,038.3	0.7528	
1999	9,630.7	12,610.5	0.7637	
2000	10,252.3	13,131.0	0.7808	
2001	10,581.8	13,262.1	0.7979	
2002	10,936.4	13,493.1	0.8105	
2003	11,458.2	13,879.1	0.8256	
2004	12,213.7	14,406.4	0.8478	
2005	13,036.6	14,912.5	0.8742	
2006	13,814.6	15,338.3	0.9007	
2007	14,451.9	15,626.0	0.9249	
2008	14,712.8	15,604.7	0.9428	
2009	14,448.9	15,208.8	0.9500	
2010	14,992.1	15,598.8	0.9611	
2011	15,542.6	15,840.7	0.9812	
2012	16,197.0	16,197.0	1.0000	
2013	16,784.9	16,495.4	1.0176	
2014	17,527.3	16,912.0	1.0364	
2015	18,238.3	17,432.2	1.0462	
2016	18,745.1	17,730.5	1.0572	1.0572
2017	19,543.0	18,144.1	1.0771	
2018	20,611.9	18,687.8	1.1030	
2019	21,433.2	19,091.7	1.1226	
2020	20,934.9	18,423.4	1.1363	
2021			1.1453	
2022			1.1587	
Calculation of Escalation Factor ->				1.0960

ANNUALIZED MARGINAL COST ESTIMATE

A	B	C	D	E	F	G
				Feb 2022 Est		Notes
			DG 17-070 Compliance Filing MCS			
1	Escalation Factor		(Tables 9 & 11)	1.0960		
2	Marginal Cost Data					
3	Customer Charge			\$271.86		D3 x E1
4	Pressure Support		\$248.05	\$0.00		D4 x E1
5	Main Reinforcement (per Dth)		\$0.00	\$86.85		D5 x E1
6	Main Extension (per Dth)		\$79.24	\$181.24		D6 x E1
7			\$165.37			
8	Customer Data					
9	Annual Usage					
10	Design Day Usage					
11						
12	Marginal Revenue Requirement					
13	Customer Charge					
14	Pressure Support					
15	Main Reinforcement					
16	Main Extension					
17	Total					
18						
19	Marginal Cost Floor - All Components					
20	Revenue Requirement					
21	Customer Charge					
22	Remaing Revenue					
23	Volumetric Charge					

Note:

Customer Charge from Table - 12, in Compliance Filing MCS
 Main Reinforcement Cost from Table - 9 in Compliance Filing MCS
 Main Extension Cost from Table - 9 in Compliance Filing MCS
 2019 thru 2022 GDP Chain-type Price Index from EIA Annual Energy Outlook 2020

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Escalating Marginal Costs using GDPLEV from Bureau of Economic Analysis data:

- 1) Go to -> <http://www.bea.gov/national/index.htm> web page;
- 2) Click on the link for *Current-Dollar and "Real" Gross Domestic Product*;
- 3) Update annual "GDP in billions of current dollars" and "GDP in billions of chained 2012 dollars" data in the table below;
- 4) Forecast years GDP estimates use EIA Energy Outlook projections (Table 20 Macroeconomics Indicators);
 Go to -> <http://www.eia.doe.gov/oiaf/aeo/index.html> web page;
- 5) Update prior to start of each contract year.

Adjustment escalators to Marginal Costs

GDP in billions of current dollars	GDP in billions of chained 2012 dollars	GDP Chain-type Price Index (2012=1.000)	Marginal Cost Study Escalation Factor Calculation
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2017	19,543.0	18,144.1	1.0771
2018	20,611.9	18,687.8	1.1030
2019	21,433.2	19,091.7	1.1226
2020	20,934.9	18,423.4	1.1363
2021			1.1453
2022			1.1587
Calculation of Escalation Factor ->			1.0197

ANNUALIZED MARGINAL COST ESTIMATE

A	B	C	D	E	F	G
			DG 21-104 Atrium MCS RAJT 10 Page 2	Feb 2022 Est		Notes
1	Escalation Factor			1.0197		
2	Marginal Cost Data					
3	Customer Charge			\$742.96		D3 x E1
4	Pressure Support		\$728.61	\$0.00		D4 x E1
5	Main Reinforcement (per Dth)		\$0.00	\$153.54		D5 x E1
6	Main Extension (per Dth)		\$150.57	\$119.76		D6 x E1
7	O&M (per Dth)		\$117.45	\$33.00		D7 x E1
8			\$32.36			
9	Customer Data					
10	Annual Usage					
11	Design Day Usage					
12						
13	Marginal Revenue Requirement					
14	Customer Charge					
15	Pressure Support					
16	Main Reinforcement					
17	Main Extension					
18	O&M					
19	Total					
20						
21	Marginal Cost Floor - All Components					
22	Revenue Requirement					
23	Customer Charge					
24	Remaining Revenue					
25	Volumetric Charge					

Note:

Customer Charge from Schedule RAJT-10, Table - 12, Page 2, Line 52.
 Main Reinforcement Cost from Schedule RAJT-10, Table - 12, Page 2, Line 31.

Main Extension Cost from Schedule RAJT-10, Table - 12, Page 2, Line 32 .
O&M Cost from Schedule RAJT-10, Table - 12, Page 2, Line 35.
2019 thru 2022 GDP Chain-type Price Index from EIA Annual Energy Outlook 2020

Go to -> http://data.bls.gov/PDO/sen/let/SurveyOutputServlet?data_tool=latest_numbers&series_id=CUUR0000SA0&output_view=pct_1mth
 Filter formatting options - 12 month, February to February, html format, comma delimited

Consumer Price Index - All Urban Consumers

12-Month Percent Change
 Series Id: CUUR0000SA0

Not Seasonally Adjusted
 Area: U.S. city average
 Item: All items
 Base Period: 1982-84=100

CPI Table Paste Area

Year	Feb
2000	169.800
2001	175.800
2002	177.800
2003	183.100
2004	186.200
2005	191.800
2006	198.700
2007	203.499
2008	211.693
2009	212.193
2010	216.741
2011	221.309
2012	227.663
2013	232.166
2014	234.781
2015	234.722
2016	237.111
2017	243.603
2018	248.991
2019	252.776
2020	258.678
2021	263.014
2022*	274.310

Inflation Factor Template			Annual Special Contract Rate Adjustment Template					Notes	
CPI-U Year	CPI-U, NSA, 12 months, Feb. - Feb.	Inflation Factor	March 1 Contract Rate Year	Monthly Customer Charge	First 200,000 Therms	Delivery Rate 200,001-300,000	Delivery Rate 300,001-400,000		Delivery Rate Over 400,001
2005	191.800		2005						Actual billed rates
2006	198.700	3.60%	2006						Actual billed rates
2007	203.499	2.42%	2007						Actual billed rates
2008	211.693	4.03%	2008						Actual billed rates
2009	212.193	0.24%	2009						Actual billed rates
2010	216.741	2.14%	2010						Actual billed rates
2011	221.309	2.11%	2011						Actual billed rates
2012	227.663	2.87%	2012						Actual billed rates
2013	232.166	1.98%	2013						Actual billed rates
2014	234.781	1.13%	2014						Actual billed rates
2015	234.722	-0.03%	2015						Actual billed rates
2016	237.111	1.02%	2016						Actual billed rates
2017	243.603	2.74%	2017						Actual billed rates
2018	248.991	2.21%	2018						Actual billed rates
2019	252.776	1.52%	2019						Actual billed rates
2020	258.678	2.33%	2020						Actual billed rates
2021	263.014	1.68%	2021						Actual billed rates
2022*	274.310	4.29%	2022						Actual billed rates

*: 2022 CPI data is through September 2021

Note: Updated 2022 contract rates will be determined when February 2022 CPI-U data is available, approximately the end of March 2022.

Pursuant to the contract: In no event shall fluctuations in the CPI-U reduce the Special Transportation Rates or Charges below the then current Special Transportation Rates and Charges.

2022 ANNUALIZED MARGINAL REVENUE ESTIMATE

USAGE:	OVER 400,000	Customer Charge	1st 200,000	Next 100,000	Next 100,000	Remainder
		Mar-22				
		Apr-22				
		May-22				
		Jun-22				
		Jul-22				
		Aug-22				
		Sep-22				
		Oct-22				
		Nov-22				
		Dec-22				
		Jan-23				
		Feb-23				
		Total				
		TOTAL:				

Note: USAGE is based on 12-month period March 2020 - Feb. 2021 actual usage