

Educational and Professional Background

Al-Azad Iqbal

I am employed by the New Hampshire Public Utilities Commission (PUC) as a Utility Analyst in the Gas & Water Division. My business address is 21 S. Fruit Street, Suite 10, Concord New Hampshire, 03301.

I received my Bachelor degree in Architecture (B. Arch) from Bangladesh University of Engineering and Technology. Later, I received my Master's (MS) in Environmental Management from the Asian Institute of Technology and another Master's in City and Regional Planning (MCRP) from The Ohio State University. I was a Doctoral Candidate at the City and Regional Planning Department at The Ohio State University. After joining the PUC in 2007, I participated in several utility-related training courses including marginal cost training by NERA; Advanced Regulatory Studies at the Institute of Public Utilities, Michigan State University; and depreciation training through the Society of Depreciation Professionals. I am an active member of the society.

Prior to joining the PUC, I was involved in teaching and research activities in different academic and research organizations. Most of my research work was related to the quantitative analysis of regional and environmental issues.

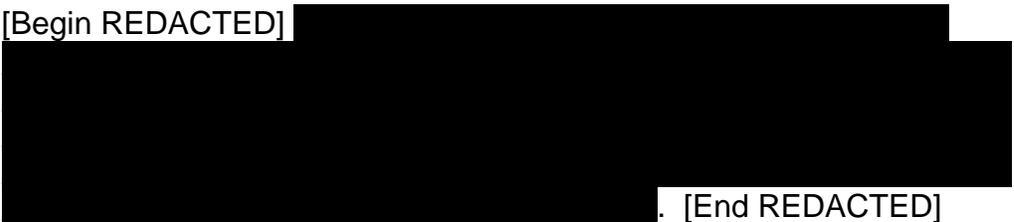
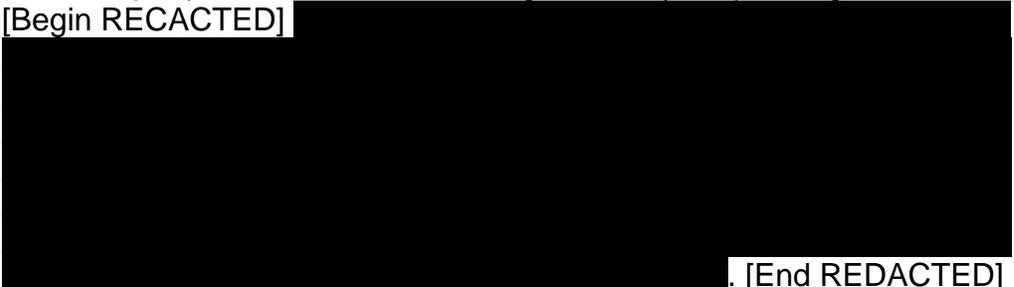
New Hampshire Public Utilities Commission
Northern Utilities, Inc.
Docket No: DG 19-116
Petition for Approval of Precedent Agreement for Westbrook Xpress Phase III
Staff Discovery Requests - Set 1

Request No. Staff 1-3:

Reference, testimony of Mr. Furino, page 43.

- a. How does the decrease in the volume of LNG deliveries to Canaport impact the ability to contract for additional supply from that facility?
- b. What inquiries did the Company regarding the availability and cost of supplies from Canaport?
- c. Did the Company run resource mix optimization analyses of any alternative supply options? If not, why not? If yes, please provide a summary of the results with a copy of the SENDOUT report/output.
- d. Please explain how the cancellation charged are treated in the Company's comparison of supply alternatives.

REDACTED Response:

- a. [Begin REDACTED]  . [End REDACTED]
- b. The Company issued an RFP seeking a 3 to 5 year peaking service [Begin REDACTED]  . [End REDACTED]
- c. The Company did not run the resource mix optimization in Sendout. However, the Company did analyze both alternative supply options and alternative supply volumes to that which was selected. The Company utilized the Landed Cost Analysis to compare capacity back to Dawn Hub (which was selected) to capacity back to the AECO Hub (which was not selected). This analysis is provided in the Testimony of Robert S. Furino, beginning on Page 44. The Company also analyzed the potential savings from increasing the WXP volume from 10,000 Dth to 15,000 Dth.

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This analysis is provided originally to the Maine PUC in Docket No. 2019-00101 in response to Data Request OPA 1-2 and is provided as part of the Company's response to Staff 1-2.

- d. Cancellation charges were not reflected in the Company's landed cost analysis.

Person Responsible: Robert S. Furino

Date: 8/1/2019

New Hampshire Public Utilities Commission

Northern Utilities, Inc.

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**Petition for Approval of Precedent Agreement for Westbrook Xpress Phase III
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Request No. Staff 1-4:

Reference, testimony of Mr. Furino, page 50, section 3. Did Northern, transporters, or any other party perform risk analyses regarding the potential cancellation of the Project? If not, why not? If yes, please provide the details of the analysis.

Response:

The Company is not aware of any formal risk analysis being performed regarding the potential cancelation of the Canadian projects; however the Company understands that both Enbridge and TransCanada follow processes that identify project risks and risk mitigation measures and that their respective approval and construction schedules reflect these reviews. The Company also understands that the pipelines regularly update their risk assessments with a focus on risks to schedule, budget and execution, and regularly communicate risks to the shippers. The Company understands that project cancelation risk is driven by obtaining approvals and permits, and that spending on facilities does not occur until after all approvals are obtained. Construction risk can affect cost and schedule, but shipper's contracts are priced at system average tolls.

Person Responsible: Robert S. Furino

Date: 8/1/2019

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Request No. Staff 1-5:

Reference, testimony of Mr. Furino, page 50, section 3.

- a. Please provide supporting analysis for the statement that “The probability of project cancellation is low”.
- b. Please identify salient components potentially contributing to the “probability of project cancellation” and possible remedies. Also, identify responsibilities of transporter and/or shippers for each component.
- c. Does project plan include risk minimization measures? Please provide details.

Response:

- a. The Company understands that the projects involve primarily the construction of additional compression facilities at existing locations, and further that neither pipeline has failed to obtain approvals for prior natural gas projects. Projects with little or no pipeline construction undergo a simpler application review process before the National Energy Board. Construction risks may impact cost and implementation schedule, but are very unlikely to trigger cancellation. In terms of the level of cancellation costs, spending on facilities does not occur until all approvals and permits are received, which mitigates against the risk of significant cancellation costs.
- b. The Company understands the projects have already received internal funding approvals, a critical milestone, so going forward the risk of cancellation depends upon receipt of regulatory approvals and other permits. Projects could also be cancelled if a significant portion of shippers fail to receive their approvals and exit the project. The Canadian transporters are responsible for obtaining their approvals and managing the project. Shippers are responsible for obtaining their regulatory approvals.
- c. It is the Company’s understanding that the Canadian transporters minimize risk by providing very complete applications, building significant review time into their schedules, engaging contractors early so they are available upon receipt of approvals, and holding significant spending until approvals are received.

Person Responsible: Robert S. Furino

Date: 8/1/19

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Request No. Staff 1-6:

In case of project cancellation, does the transporter assume any liability for costs due to cancellation?

- a. Please identify scenarios where the transporter assumes all or partial costs.
- b. In the case of the transporter assuming partial costs, please explain how the proportion between transporter and shippers will be determined.

Response:

The Canadian transporters do not assume any liability upon project cancellation up to the respective liability caps. In the unlikely event that actual cancellation costs exceeded the shipper liability caps, the transporters would be liable for such costs.

Person Responsible: Robert S. Furino

Date: 8/1/19

**Northern Utilities d/b/a Unitil
Department of Public Utilities
Docket No: DG 19-116
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Staff Discovery Requests - Set 3**

Request No. Staff 3-1:

Ref. Response to Staff 1-5. Please provide lists of pipeline projects initiated by TransCanada, PNGTS, and Enbridge in the last 10 years.

- a. Please include the following information for each of the projects:
 - i. initial planned capacity,
 - ii. status of the project,
 - iii. planned completion date,
 - iv. actual completion date, and
 - v. actual capacity.

- b. Please identify all cancelled projects with explanation/reasons of cancellations, if any.

Response:

- a. Please see the following tables.

Portland Natural Gas Transmission System

Project	i. Planned Capacity	ii. Status of Project	iii. Planned Completion Date	iv. Actual Completion Date	v. Actual Capacity
Continent to Coast Project (C2C)	82,404 Dth/d	In Service	Nov 1, 2017	Dec 1, 2017*	82,404 Dth/d
Portland XPress Project Phase I	39,841 Mcf/d	In Service	Nov 1, 2018	Nov 1, 2018	39,841 Mcf/d
Portland XPress Project Phase II	11,321 Mcf/d	Approved By FERC	Nov 1, 2019	N/A	N/A
Portland XPress Project Phase III	24,375 Mcf/d	Approved By FERC	Nov 1, 2020	N/A	N/A
Westbrook XPress Project Phase I	42,651 Dth/d	Approved By FERC	Nov 1, 2019	N/A	N/A
Westbrook XPress Project Phase II	63,242 Dth/d	Preparing FERC filing	Nov 1, 2021	N/A	N/A
Westbrook XPress Project Phase III	18,080 Dth/d	Preparing FERC filing	Nov 1, 2022	N/A	N/A

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* Delay due to lack of FERC quorum. PNGTS affected C2C implementation on Nov 1, 2017.

TransCanada Pipelines Limited

Project	i. Planned Capacity	ii. Status of Project	iii. Planned Completion Date	iv. Actual Completion Date	v. Actual Capacity
Parkway Loop	446.4 TJ/d	Constructed	2012/13	2012/13	446.4 TJ/d
Station 130 B1/B2	130.1 TJ/d	Constructed	2013/14	2013/14	130.1 TJ/d
Greater Golden Horseshoe	347.7 TJ/d	Constructed	2015/16	2015/16	347.7 TJ/d
King's North	339.5 TJ/d	Constructed	2015/16	2016/17	339.5 TJ/d
Station 130 B3	467.0 TJ/d	Constructed	2016/17	2016/17	467.0 TJ/d
Station 211	399.3 TJ/d	Suspended at customer's request	2016/17		
St. Sebastien	10.0 TJ/d	Constructed	2017/18	2018/19	10.0 TJ/d
Vaughan	418.7 TJ/d	Constructed	2017/18	2017/18	418.7 TJ/d
Station 130 C4	215.5 TJ/d	Under Construction	2019/20	2019/20	215.5 TJ/d
Station 119	226.1 TJ/d	Under Construction	2019/20	2019/20	226.1 TJ/d

Enbridge / Union Gas

Project	i. Planned Capacity	ii. Status of Project	iii. Planned Completi on Date	iv. Actual Completi on Date	v. Actual Capacity
2015 - Installation of 2 new compressors and 14 km of NPS 48 pipeline from Brantford to Kirkwall	433 TJ/day	Completed	November 1, 2015	November 1, 2015	436 TJ/day
2016 - Installation of 1 new compressor, 20 km of NPS 48 pipeline from Hamilton to Milton	443 TJ/day	Completed	November 1, 2016	November 1, 2016	443 TJ/day
2017 - Installation of 3 new compressors	457 TJ/day	Completed	November 1, 2017	November 1, 2017	457 TJ/day

b. There have been no project cancellations.

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Person Responsible: Robert S. Furino

Date: August 19, 2019

**Northern Utilities d/b/a Unitil
Department of Public Utilities
Docket No: DG 19-116
Petition for Approval of Precedent Agreement for Westbrook Xpress Phase III
Staff Discovery Requests - Set 4/TS**

Request No. Staff 4-2:

Please provide a timeline for the PNGTS, TransCanada, and Enbridge agreements that includes:

- a. Decision points for the pipeline;
- b. Decisions points for shippers;
- c. Decision points for Northern; and
- d. Financial consequences related to each decision point.

Please create a single timeline that indicates a, b, and c, in addition to separate timelines for each of the three agreements.

REDACTED Response:

- a. Please refer to CONFIDENTIAL Staff 4-2 Attachment. The Attachment provides a consolidated summary of the exposure schedules for each of the three Precedent Agreements along with a separate timeline of events, decision points and financial consequences for each Precedent Agreement.

■ Northern does not have definitive information regarding other shippers. On the Enbridge project, [BEGIN CONFIDENTIAL] ■

[END CONFIDENTIAL]

- c. Please see response to part a.
- d. Please refer to CONFIDENTIAL Staff 4-2 Attachment. Decision points identified in the timeline for each Precedent Agreement can be referenced to the consolidated summary of exposure to identify the estimated financial consequences.

Person Responsible: Robert S. Furino

Date: Sept. 3, 2019

REDACTED

Estimate of Cumulative WXP III Contracts Cancellation / Pre-Service Cost Exposure to Northern (\$000)

Quarter	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Date	3/31/19	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20	12/31/20	3/31/21	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22	9/30/22	12/31/22

Enbridge (\$CN) ¹	[REDACTED]															
TransCanada (\$CN) ²	[REDACTED]															

Enbridge (\$US) ³	[REDACTED]															
TransCanada (\$US) ³	[REDACTED]															
PNGTS (\$US) ⁴	[REDACTED]															

Cumulative Exposure (\$US)	[REDACTED]															
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Enbridge, TransCanada Exposure (\$US)	[REDACTED]															
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1/ As of July 2019
 2/ As of February 2019
 3/ Assumes 0.7501 \$CA to \$US exchange rate.
 4/ As of August 2019

REDACTED

Enbridge Precedent Agreement Timeline

Indicates Northern's Decision
Indicates Enbridge's Decision

Quarter	Date	Event	Decision	Financial Consequence if Terminated	Status	Reference

REDACTED

TransCanada Precedent Agreement Timeline

Indicates Northern's Decision

Indicates TransCanada's Decision

Quarter	Date	Event	Decision	Financial Consequence if Terminated	Status	Reference

PNGTS Precedent Agreement Timeline

Indicates Northern's Decision
Indicates PNGTS' Decision

Quarter	Date	Event	Decision	Financial Consequence if Terminated	Status	Reference

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Request No. Staff 4-3:

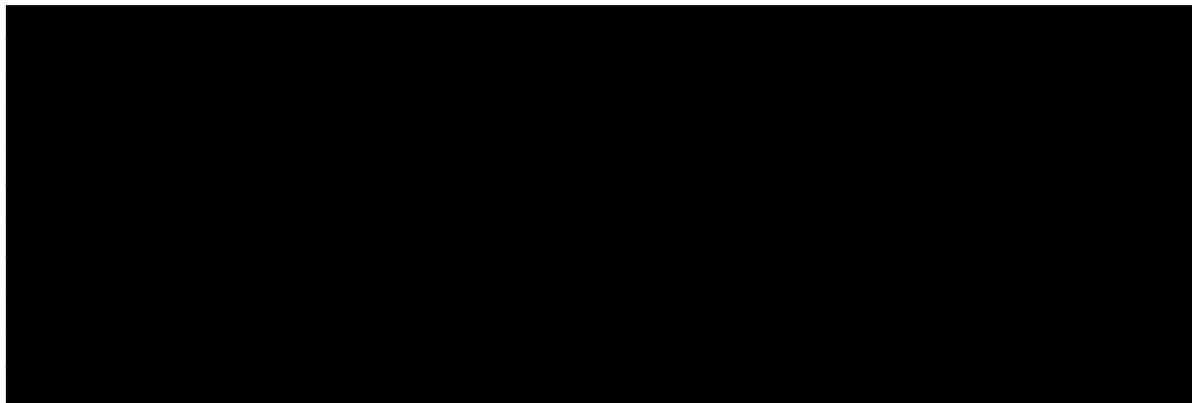
For each decision point, please provide a decision tree that includes a best estimate of the probability of each outcome, resource plans, and costs.

REDACTED Response:

Although each of the three precedent agreements have different terms, timing of decision points and financial consequences, Northern would take into account the combined impacts and future mitigation opportunities, as well as prospects for future projects to add or replace any planned capacity that may not be built under the proposed agreements when making decisions. The comments below reflect the Company's current approach given its understanding of the status of each project and the structure of the agreements. The Company will adapt its approach as it deems appropriate as the approval processes and project development move forward.

Enbridge

[BEGIN CONFIDENTIAL]



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[REDACTED]

[REDACTED]

[REDACTED] [END

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TransCanada

[BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[END CONFIDENTIAL]

PNGTS

[BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[END CONFIDENTIAL]

Summary

[BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED]

1

[REDACTED]

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[END

CONFIDENTIAL]

Lastly, regular communication with the pipelines regarding their respective efforts to obtain regulatory approval and land use permits, as well as to obtain updated cost estimates, will be a key aspect of Northern's ongoing management of the Precedent Agreements.

Person Responsible: Robert S. Furino

Date: Sept. 3, 2019