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Enbridge Gas Inc.
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August 12, 2022

VIA EMAIL and RESS

Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Nancy Marconi:

Re: Enbridge Gas Inc. ("Enbridge Gas")
Ontario Energy Board ("OEB") File: EB-2020-0086
Dawn to Corunna Replacement Project
Undertaking Responses

Consistent with the OEB's Procedural Order No. 4, enclosed are the responses of Enbridge Gas to undertakings received during the Technical Conference in the above noted proceeding held on July 27 and August 2, 2022.

Please contact the undersigned if you have any questions.

Yours truly,

(Original Digitally Signed)

Adam Stiers
Manager, Regulatory Applications – Leave to Construct

c.c. Charles Keizer (Torys)
Ritchie Murray (OEB Staff)
Intervenors (EB-2020-0086)

ENBRIDGE GAS INC.

Undertaking Response to FRPO

On a best efforts basis, to provide the number of interruptions to ex-franchise customers resulting from an unplanned outage; to the extent Enbridge can't provide it, Enbridge will advise that Enbridge can't.

Response:

There have been no Operational Flow Orders (“OFO”) issued to ex-franchise customers caused by an unplanned outage of a compressor unit at the CCS.

For further context and explanation please also see the responses at Exhibit I.FRPO.7 c) & d).

ENBRIDGE GAS INC.

Undertaking Response to FRPO

To provide actuals for amount of gas in storage on design day

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Response:

Historic Tecumseh storage balances (PJ) on February 28(9) design day are set out in Table 1 below:

Table 1

28-Feb-22	42.5
28-Feb-21	45.0
29-Feb-20	52.4
28-Feb-19	39.8
28-Feb-18	53.7

Enbridge Gas's annual Gas Supply Plan ensures that enough upstream transportation and storage assets are available to meet design day demands as well as annual commodity requirements. Once the gas year starts, Enbridge Gas must operationalize the plan by making adjustments for changes in weather and customer demand. An example would be higher customer demand due to colder than normal weather resulting in purchases above planned levels to ensure there is enough gas supply for customers throughout the winter. In the years 2019 and 2022, forecast temperatures leading up to February 28 were not near design conditions and Enbridge Gas had sufficient assets in place to meet forecasted customer demands for the remainder of the winter. These circumstances allowed inventories at Tecumseh to fall slightly below planned levels for February 28 on these two occasions.

ENBRIDGE GAS INC.

Undertaking Response to FRPO

To advise where NGEIR identified the 1.9 deliverability.

Response:

Within its Decision with Reasons for the Natural Gas Electricity Interface Review ("NGEIR") (EB-2005-0551), at pages 50-51, the OEB concluded that utility shareholders are expected to bear the risks of future storage development for the competitive market incremental to the amounts existing, at that time, to serve the requirements of Ontario utility customers. The OEB goes on at pages 70-71 to affirm that,

> Although this issue was discussed in the context of high deliverability services, the Board finds that its conclusions have general application, namely that any new storage which is developed by the utilities will be included as part of the competitive market. The utilities will bear the risk of these investments, not ratepayers. Similarly, the Board will not regulate the rates, nor approve the contracts, arising from these investments. If the utilities provide storage to their regulated business through these investments, the ratemaking implications of that approach will be considered in the context of a rates proceeding.

Further, as outlined at page 11 of the OEB's Decision with Reasons, the EGD Tecumseh storage facilities were identified as having peak day deliverability of 1.8 Bcf per day and total space of approximately 92 Bcf.[1] These values converted to peak day deliverability of 1.9 PJ/d and total space of 99.4 PJ, using a heat content conversion factor of 38.42 MJ/m^3.[2] The OEB also acknowledged that at the time of its NGEIR Decision (similar to present day), Tecumseh storage was not sufficient to cover the seasonal load balancing requirements of EGD in-franchise customers. To meet those requirements, EGD supplemented its Tecumseh storage space with three multi-year contracts with Union for a total of 19.9 Bcf of storage at Dawn. EGD did not sell third-party merchant storage services at the time of the NGEIR decision, therefore all EGD storage space and available injection and withdrawal capacities were reserved for utility use (99.4 PJ of Space, 1.9 PJ/d of withdrawal capacity, and 0.8 PJ/d of injection capacity). The OEB's decision that the capacity dedicated to providing storage services to EGD in-franchise customers would remain regulated meant that all existing EGD Tecumseh storage capacity held at that time (space and deliverability) would be treated that way.

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[1] On pages 82-83 of the NGEIR Decision with Reasons, the OEB determines that Union should be required to reserve 100 PJ (approximately 95 Bcf) of space at cost-based rates for in-franchise customers.

[2] 38.42 MJ/m^3 is the value applied most recently as part of the Company's MAADs application to amalgamate Enbridge Gas Distribution Inc. and Union Gas Limited and the Company's subsequent Rate Setting Mechanism application (EB-2017-0306/0307).

Since the OEB's NGEIR Decision in 2006, Enbridge Gas (EGD) has been relying upon the above storage space and deliverability parameters for gas supply planning purposes, the cost consequences of which flow through OEB-approved rates annually and at the time of rate rebasing.

In its Decision and Order on the Application for Amalgamation and Rate-Setting Mechanism (EB-2017-0306/0307) at pages 50-51, the OEB reaffirmed that,

> In the NGEIR proceeding,[3] the OEB determined that 100 PJ of Union Gas' existing storage capacity and all of Enbridge Gas' storage capacity of 99.4 PJ would be allocated to meet the needs of in-franchise customers at cost-based rates.

and subsequently found that,

> During the deferred rebasing period, the OEB accepts the applicants' proposal to continue to purchase market-based storage services to meet the needs of legacy Enbridge Gas in-franchise customers.

[3] EB-2005-0551, NGEIR Decision with Reasons, November 7, 2006, pp. 74 and 83.

ENBRIDGE GAS INC.

Undertaking Response to FRPO

(a) to advise the February 28th design day storage position prior to winter of 2014; to the extent Enbridge can't, Enbridge will explain why it can't. (b) to explain based on the models from that time what amount of additional withdrawal from storage would have been contemplated for mid-February to end of February.

Response:

The winter 2013/14 plan held sufficient inventory to provide maximum deliverability until February 5, 2014. The winter of 2013/14 was the last winter where this planned level applied. Thereafter, Enbridge Gas planned to hold sufficient inventory to provide maximum deliverability until February 28.

Based upon the winter 2013/14 plan, Enbridge Gas planned to hold 43.5 PJ of inventory in storage on the February 5, 2014 Design Day. The planned inventory level for February 28, 2014 was 18.5 PJ. Actual inventory held in storage on February 28, 2014 was 13.1 PJ.

ENBRIDGE GAS INC.

Undertaking Response to FRPO

To file the report Enbridge received from their engineering group.

Response:

During the development of the Project, the engineering studies and technical reports that were taken into consideration when assessing alternatives and determining the scope of facilities required to address the risks identified were the QRA and RAM Study documents which form part of the Company's pre-filed evidence and responses to interrogatories in the current proceeding. These studies and reports were approved by the Director, Integrity and Asset Management.

The presentation set out in the response at Exhibit JT2.6 Attachment 1 was reviewed and approved by Ms. Thompson, and is the so called report referred to in this undertaking, to be presented to the Utility Leadership Team for broader Project approval (culminating in the subsequent presentation approved by the Enbridge Inc. Board of Directors set out in the response at Exhibit I.SEC.1 Attachment 1). These presentations: (i) relied upon the conclusions of the engineering studies and technical reports noted above to define the underlying risk to ratepayers; (ii) included assessments of facility and non-facility alternatives to address the risk identified; and (iii) described the scope of the proposed Project. Through these presentations, the Project team received endorsement to proceed with the proposed Project.

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To advise when the QRA process was instituted.

Response:

Context of QRA

Quantitative Risk Assessment ("QRA") generically means a technical assessment that leverages numerical data and mathematical methods to quantify risks. The CCS QRA submitted in the response at Exhibit I.CME.1 Attachment 1, is one type of QRA focused on the estimation of safety risks associated with very rare but catastrophic events due to:

i. loss of containment of hazardous materials (in this case natural gas); and
ii. subsequent undesired events, such as fire and explosion.

The CCS QRA also assesses impacts to employees working at the CCS site. The results are evaluated against risk evaluation criteria to determine if risk treatments are needed and to inform Company risk management strategy. Such risks are commonly known as process safety risks in the oil and gas industry and chemical industry.

Although catastrophic events described above are quite rare, examples of such events within these industries and Enbridge Inc. that had significant impact to people, environment, and property include:

Non-Enbridge examples:

- 2005: BP Texas City Refinery explosion;
- 2019: Fire at Consumer Gas Compressor Station in Michigan (See Exhibit C, Tab 1, Schedule 1, Attachment 2 Section 5); and
- 2022: Freeport LNG explosion in Texas.

Enbridge examples:

- 2010: Line 6B ruptured just south of the town of Marshall, Michigan; and
- 2018: Prince George pipeline explosion in B.C.

Appropriate methodology is required to assess this type of risk to support decisions informed by analysis. The assessment is complex in nature as it needs to apply mathematical modeling to combine fact-based inputs, such as operating conditions, types and counts of equipment, and where and for how long worker groups are at CCS, with loss of containment data to estimate likelihood and physical effects of undesired events (e.g., fire and explosion).

Evolution of QRA Process at Enbridge Gas

The QRA process for estimating risks associated with process safety events was implemented in different areas based on level of maturity of the organization, availability of data and resources, and level of competency. This is an evolving process. A chronology of key activities in this regard are described below:

In 2004, as a result of new requirements of regulations adopted by the TSSA and NEB for pipelines operating above 30% Specified Minimum Yield Strength ("SMYS"), EGD developed an Integrity Management Program and began using quantitative risk assessment to understand risks posed by pipelines and to facilitate relative comparison of risks. At that time the assessments were solely focused on pipeline assets and there was not yet any use of risk evaluation criteria like the one used in the CCS QRA (as described in Exhibit B, Tab 1, Schedule 1, Paragraph 49 with further details provided in the response at Exhibit I.CME.2 a), p. 5) against which risks could be objectively evaluated to determine whether they were acceptable or not. The expectations set out in the new requirements adopted by the TSSA and NEB did not include a requirement for an integrity management program for facilities (i.e., compressor stations).

In its Decision with Reasons on EGD's 2014-2018 Rebasing Application the OEB indicated that the level of spend in the Asset Plan for EGD required more robust risk-based analysis and that the Asset Plan should include all of the company's assets.[1] As a result, EGD formed an asset management group and implemented a more rigorous approach to risk assessment to support future applications with the OEB.

In 2015, EGD established an asset management and process safety management system. One of the core purposes of these management systems was to enable better understanding of process safety risks to the organization.

Between 2015 and 2019, EGD developed in-house risk assessment competencies and methodologies to quantify risks including process safety events. In 2016, the organization started to investigate risk evaluation criteria particularly related to health and safety risks, with the intent to incorporate such criteria into its process safety regime.

In 2017, the asset management team developed the risk evaluation criteria for health and safety risks in process safety using simplified methodologies as the advanced simulation tools such as those referred to in the CCS QRA had not yet been developed.

Between 2018 and 2019, as part of the asset management process, a QRA for the Meter Area Upgrade project at CCS indicated that there could be areas of higher than anticipated risk to workers which would not be addressed by that project (as quoted in the executive summary of the CCS QRA set out at Exhibit I.CME.1, Attachment 1, p. 3). In recognition of the complexity of the CCS (multiple modes of operations, high number of compressors and many groups of workers on site) and given that the QRA assessment for the Meter Area Upgrade project could not offer a comprehensive view of

[1] EB-2012-0459, Decision with Reasons, p. 34.

CCS site-wide risks, a higher degree of objective analysis to support decisions and investments at CCS was required.

In 2019, amalgamation of Union and EGD took place to form Enbridge Gas and the integration of asset management practices was initiated. In the same year, the Company's Enterprise Safety and Reliability Policy was modified to include process safety and the need to prevent catastrophic incidents.

In 2020, Enbridge Gas developed a plan to complete a site-wide QRA at the CCS to understand the current risk (R0) and engaged DNV (a third-party expert) for support. In the same year, Enbridge Gas formally and broadly endorsed and adopted the risk evaluation criteria used by EGD.

It is important to note that although the CSA Z662 standard has for a number of years provided some guidance in Annex B with respect to risk management, the current version, CSA Z662-19, does not lay out the process and techniques by which risks should be evaluated nor any specific criteria for evaluating their significance (i.e., acceptability). The draft 2023 version of CSA Z662, to be released next year, is expected to contain guidelines on the appropriate criteria to be used in evaluating the significance of risk (please also see the response at Exhibit I.CME.2 a), p. 5). The criteria proposed for CSA Z662-23 Annex B are consistent with the criteria currently implemented at Enbridge Gas.

In summary, the use of QRA to analyze and evaluate risks associated with Enbridge Gas facilities (meaning compressor stations or other above-grade facilities) did not begin until 2015 at the earliest. Prior to this time, to satisfy requirements of changing regulations in relation to 30% SMYS pipelines, QRA techniques were in place but there was no application of these techniques to compressor stations.

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To provide a copy of all of the safety risk assessments that have been conducted on the CCS.

Response:

As discussed during the Technical Conference, the safety risk assessments relevant to the proposed Project are described in the executive summary of the CCS QRA set out at Exhibit I.CME.1 Attachment 1. The context of these assessments is further explained in section 1.1 “Background” of the same document which refers to past risk assessments for CCS completed as part of the EGD Asset Management process for securing capital funding. That process and plan was previously filed with the OEB.[1]

As described in the EGD Asset Plan Figure 4.1-6 Life Cycle Management Inputs, one of many inputs to inform decision making during asset life is the assessment of operational risk. The risk assessment process for EGD at the time leveraged a Risk Bowtie model built in-house as described in the 2019-2028 Asset Management Plan pages 71 to 74 and pages 79 to 82, to quantify risks in multiple dimensions: Safety, Financial and Customer Satisfaction.

For business cases which met certain capital spend thresholds, risk descriptions and risk assessment outputs from the tool were filed within the EGD Asset Plan 2019-2028 (at pages 400 to 1459). The evaluation of catastrophic events leading to safety impact (as described in the response at Exhibit JT 1.6) was one of many risks the business considered depending on the nature of the issue or concern and input from stakeholders.

Although the risk assessment tool was appropriate for most cases, the methodology used for evaluating catastrophic safety events was more simplistic compared to that being used for the CCS QRA. This is mainly due to the following limitations of the in-house developed tool:

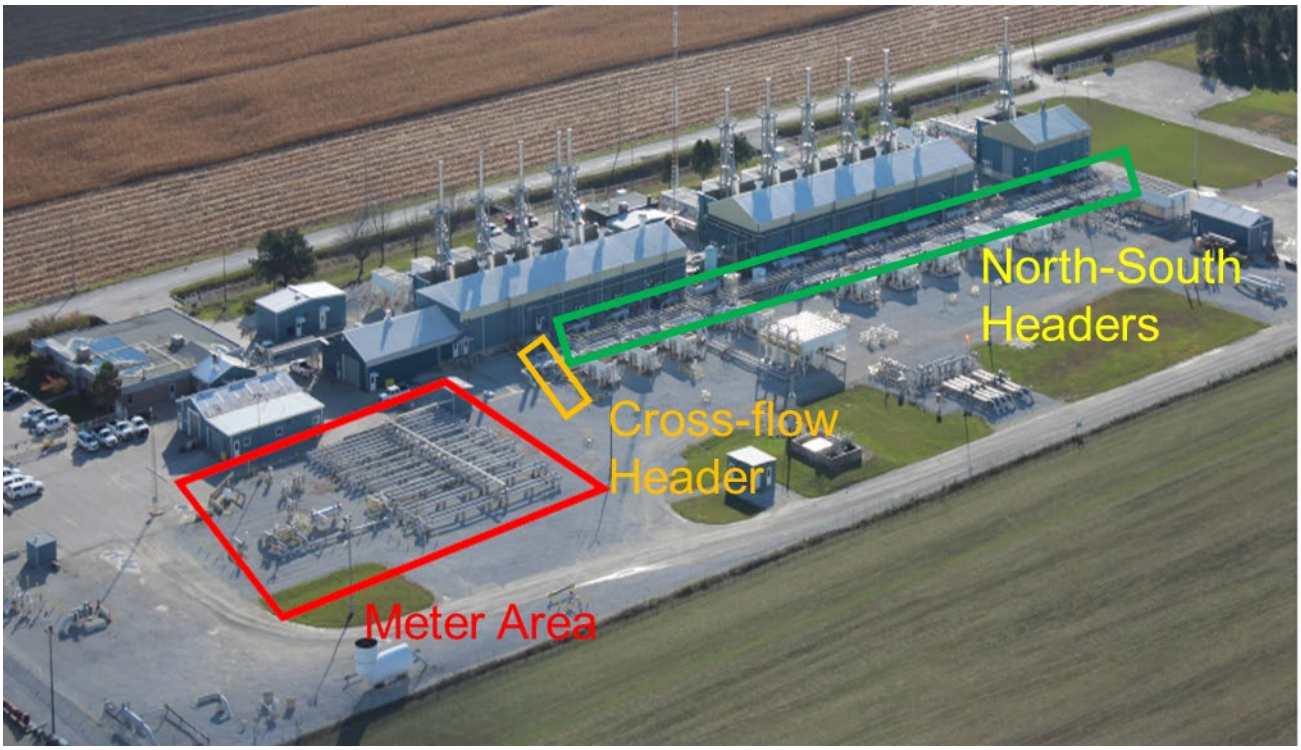
- Limited ability to compute multiple undesired events leading to catastrophic outcomes such as fire and explosion.
- Inability to process geospatial information and risk results, hence, it cannot overlay risk results to the CCS site to identify areas of focus for solution planning.

There were multiple business cases associated with the CCS which were filed as part of the 2019-2028 Asset Management Plan. Although risks associated with catastrophic events are not the common theme of these business cases, the one which considered

[1] EB-2018-0305, Exhibit C1, Tab 2 Schedule 1 titled “EGD Asset Management Plan 2019-2028.

such events with potential health and safety impacts to workers is the Meter Area Upgrade project (see EB-2018-0305, Exhibit C1, Tab 2 Schedule 1, page 1176 to 1180). The business case was triggered by concerns related to high pipe velocities, over pressure protection and the obsolete function of the meter area (see the business case BC1811 at page 1176 filed with the 2019-2028 Asset Management Plan for more details). The areas of interest for that business case are set out in Figure 1 below.

Figure 1



The risk assessment conducted at the time by the in-house tool indicated that workers could be exposed to intolerable risk (as defined in Figure 4.1-7: EGD's Risk Tolerance Framework in the 2019-2028 EGD Asset Management Plan), it was determined that the solution proposed at the time could not lower the risk below the risk limit (see risk assessment output from the business cases) for all areas within the CCS. Risks associated with the close proximity of the North-South headers to the compressor buildings and worker occupancy remained. Hence, the decision was made (and indicated in the business case) that further work would be required to develop the risk assessment to better understand risk.

Between 2018 and 2020, work continued to investigate the appropriate means to evaluate catastrophic risk and the integration of asset management practices across Enbridge Gas was initiated. In Q2, 2020, the decision was made to engage DNV (a third-party independent expert and industry leader in the area of process safety risk assessment) to conduct a site QRA at CCS to understand current risk to better inform solution planning for the site.

As compared to the Meter Area Project QRA which is limited in scope to a specific area within the CCS site, the CCS (site-wide) QRA evaluates total risk workers could be exposed to from the entire site. An industrial best practices simulation tool was used instead of an in-house risk assessment tool to avoid the limitations of the same listed above.

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To reconcile the 666 and the 680 TJ's per day.

Response:

Throughout Enbridge Gas's evidence filed March 21, 2022 and responses to interrogatories filed June 30, 2022, the Company used both 666 TJ/d (rounded to 0.67 PJ/d) and 680 TJ/d to describe the capacity reduction created by the retirement of the 7 compressor units at the CCS. The correct capacity reduction created by the abandonment of the seven compressor units at the CCS without the Project is 666 TJ/d (0.67 PJ/d).

Enbridge Gas confirms that all of the calculations and assessments impacting the project evaluation, including the alternatives assessment and ICF Report, were done using 666 TJ/d. As a result, all conclusions drawn in the Company's evidence and responses to interrogatories remain unchanged.

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

Re ED 13 table 1, to provide the detailed underlying calculations used to arrive at the 666 TJ's per day, the 1.1 PJ's per day, and the 1.8 PJ's per day.

Response:

Table 1 below provides the underlying calculations sought by ED:

- 1.115 PJ represents the amount of load balancing assets (ex. peaking supply, delivered supply, market-based storage) which would be eliminated before any reductions to cost of service storage deliverability are contemplated with the filed amount of 1.1 PJ being a rounded value.
- 0.666 PJ represents the cost-of-service deliverability lost by not replacing all seven compressors. The 0.666 PJ is based on a direct output from the hydraulic model. The abandonment of the 7 units results in 16,940 10^3m^3/d (598 MMscfd) reduction in design day deliverability. For reporting purposes this was converted to 666 TJ/d based upon the Company's system wide heating value ("SWHV") at the time of 39.32 GJ/10^3m^3.
- 1.781 PJ is the total of these two amounts. The filed amount of 1.8 PJ is a rounded value.

Table 1

	Energy Content (PJ)
Delivered Supply	0.805
Market Storage Withdrawals	0.272
Peaking Supply	0.038
Design Day Load Balancing Supply Eliminated Before Impact to Cost of Service Storage Deliverability	1.115
Cost of Service Storage Deliverability Represented by the Seven Compressors	0.666
Total	**1.781**
Filed Total (rounded to nearest 0.1 PJ)	**1.800**

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To reproduce table 1 in ED 13c including in brackets after the percentage the reduction in PJ's per day or TJ's per day

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Response:

Scenario	Decline in Annual Demand	Decline in Peak Demand
i	21% (0.3 PJ/d)	28% (1.2 PJ/d)
ii	21% (0.3 PJ/d)	30% (1.2 PJ/d)
iii	21% (0.3 PJ/d)	31% (1.3 PJ/d)
iv	21% (0.3 PJ/d)	36% (1.4 PJ/d)
v	25% (0.3 PJ/d)	38% (1.5 PJ/d)
vi	33% (0.4 PJ/d)	41% (1.7 PJ/d)
vii	37% (0.5 PJ/d)	44% (1.8 PJ/d)

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To reproduce table 1 in ED 13c under the assumption that in each of the scenarios Enbridge is also building a single new compressor.

Response:

Scenario	Decline in Annual Demand	Decline in Peak Demand
Replace 7 units with Spartan e90	21% (0.3 PJ/d)	36% (1.5 PJ/d)
Replace 7 units with Taurus 70	21% (0.3 PJ/d)	36% (1.5 PJ/d)
Abandon K701	21% (0.3 PJ/d)	28% (1.2 PJ/d)
Abandon K701/2	21% (0.3 PJ/d)	30% (1.2 PJ/d)
Abandon K701/2/3	21% (0.3 PJ/d)	31% (1.3 PJ/d)
Abandon K701/2/3/8	21% (0.3 PJ/d)	36% (1.4 PJ/d)
Abandon K701/2/3/7/8	25% (0.3 PJ/d)	38% (1.5 PJ/d)
Abandon K701/2/3/6/7/8	33% (0.4 PJ/d)	41% (1.7 PJ/d)
Abandon K701/2/3/5/6/7/8	37% (0.5 PJ/d)	44% (1.8 PJ/d)

ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence

To advise on a best efforts basis, roughly what percentage of the demand in question is residential and commercial, versus industrial.

Response:

The demand reductions (annual and peak) required to offset the capacity lost as a result of retiring and abandoning each of the 7 compressors proposed to be replaced by the Project is set out within the response at Exhibit I.ED.13 c) Table 1. These demand reductions were calculated in an effort to demonstrate the magnitude of reductions that would be required to offset the project, and as such were only estimated at a total aggregate customer level and are not attributed to specific customers or customer classes. As result, Enbridge Gas is unable to accurately estimate the reductions required by specific customers or customer classes without executing new demand forecast scenarios and a new Gas Supply Plan.

ENBRIDGE GAS INC.

Undertaking Response to Energy Probe

To advise whether Enbridge needs OEB approval to retire or to install a new compressor.

Response:

No, Enbridge Gas is not obliged to seek approval of the OEB under the *Ontario Energy Board Act, c. 15, Sched. B, (1998)* (the "Act"), to retire and abandon existing compressor facilities or for leave to construct new compressor facilities.

However, the Company can, of its own volition, request an order of the OEB granting leave to construct station facilities (including compression) under section 91 of the Act.

ENBRIDGE GAS INC.

Undertaking Response to Energy Probe

To explain why a net book value of the assets to be retired be zero when a crank shaft for K705 -- which is going to be retired -- was only installed in 2018.

Response:

Enbridge Gas mistakenly stated in its response to Exhibit I.SEC.3 that the net book value ("NBV") of the 7 CCS compressor units proposed to be retired and abandoned as part of the Project was $0. After further investigation resulting from this undertaking, Enbridge Gas has identified some costs resulting from repairs related to the 7 CCS units. Please see the updated NBVs set out in Table 1 below:

Table 1

Compressor Number	Net Book Value
K701	$0
K702	$0
K703	$0
K705	$449,000
K706	$738,000
K707	$454,000
K708	$1,073,000

ENBRIDGE GAS INC.

Undertaking Response to Energy Probe

To advise the interrogatory response that responds to EP 14, part e, or if not already answered, to provide the response.

Response:

Ancillary Facility costs relate to work planned to be completed at the Dawn Operation Centre and the CCS, including the demolition of Tecumseh Measurement within the Dawn Operations Centre and the retirement and abandonment of 7 CCS compressor units. Installation of several new headers will be required at the CCS. Headers E, F G and H will be built, and this scope will require extension of A, B, C headers with a new 30" road crossing to a new yard containing Headers E, F, G and H. At the Dawn Operations Centre, modifications will be required in the Dawn North and West Yards.

Table 1 summarizes the materials required to complete the above noted works.

Table 1

Commodity	Quantity	Estimated Price
Large Bore Valves	66	$7,119,000
Control Valves	7	$520,000
Loading Valves	51	$3,000,000
Actuators	48	$3,260,000
Small Bore Valves	587	$500,000
Ultrasonic Meters	4	$3,000,000
Gas Chromatograph & Building	1	$670,000
Moisture Analyzer	2	$200,000
Fittings and Flanges	2243	$12,729,580
Headers	109 m	$436,000
Pipe	7,080 m	$3,274,560
Buildings	3	$360,000
Filter Separators	4	$4,500,000
Launcher/Receiver	1	$1,200,000
Drain Tanks	6	$410,000
PLC Rack and Hardware	8	$600,000
	Total	**$41,779,140**

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To advise if Enbridge has done any assessment of the scope 1 emissions that will be associated with the project on an annual basis.

Response:

Enbridge Gas has assessed emissions associated with the Project (operational only)[1] and has determined that construction of the Project will result in an overall decrease of Scope 1 emissions (compared to baseline emissions).

[1] Approximately 18,000 tCO_2e.

ENBRIDGE GAS INC.

Undertaking Response to CME

To provide the dates of all of the approvals that are necessary prior to the board's presentation in October of 2021.

Response:

The dates related to the Enbridge full funding approval process for the proposed Project are listed below:

- Enbridge Inc. Capital Allocation Committee Stage 2 – May 18, 2021
- Enbridge Inc. Capital Allocation Committee Stage 3 – October 13, 2021
- Enbridge Inc. Investment Review Committee – October 18, 2021
- Enbridge Gas Inc. Board of Directors – November 1, 2021
- Enbridge Inc. Board of Directors – November 3, 2021 (presentation provided by mailout on October 26, 2021)

In addition, as discussed in the response at Exhibit JT2.6, the Project team also made a preliminary Project presentation to the Enbridge Gas Utility Leadership Team in May 2021 to receive endorsement to proceed with seeking the subsequent approvals summarized above.

ENBRIDGE GAS INC.

Undertaking Response to Pollution Probe

To provide the OEB approval for the 2021-2025 Asset Management Plan, or just confirm that it hasn't been approved by the OEB, if that is the case.

Response:

As discussed in its 2021 Rates Application and Evidence (Incremental Capital Module) (EB-2020-0181) at Exhibit A, Tab 2, Schedule 1 p. 3, Enbridge Gas filed a consolidated Utility System Plan (including an Asset Management Plan) in support of its requests for Incremental Capital Module ("ICM") funding for 2021 ICM projects and unit rates.

Enbridge Gas has not previously explicitly requested or received approval of its 2021-2025 Asset Management Plan from the OEB.

ENBRIDGE GAS INC.

Undertaking Response to Pollution Probe

To provide information with regards to what was addressed during the presentation to the EGI Board.

Response:

As outlined in the response at Exhibit I.SEC 1, Attachment 1, p. 2, in the presentation to the Enbridge Inc. Board of Directors seeking endorsement of and funding approval for the Project, regarding the nature of the existing facilities and the capacity to be replaced by the Project, the contents of the referenced presentation were discussed and emphasis was placed on the following two points:

- The Project will maintain the same system deliverability as existing facilities via the proposed TR7 pipeline and existing Dawn compression.

- The existing facilities being replaced have been included in the regulated business.

ENBRIDGE GAS INC.

Undertaking Response to School Energy Coalition

To provide whether the RAM study in the chart has taken into account the repairs done between 2018 and 2021; if yes, then what repairs were taken into account, and the conclusion.

Response:

Enbridge Gas can confirm that the Updated (2021) AHR and the RAM study have taken into account repairs completed between 2018 and 2021. As can be seen in the AHR at Exhibit I.ED.1, Attachment 1, p. 9, within the section entitled "Foundations" at the bottom of the page, foundations were replaced for certain CCS units such as K705, which resulted in a reset of operating run hours to "0" at the time of the replacement; meaning that the health of that asset sub-system (foundation) was restored for certain CCS units. Further, Table 8 – Modelling Factors, set out on p. 10 of the same document, includes updated modelling factors used in the Updated AHR that reflect repairs completed between 2018 and 2021.

Specifically, the following major repairs as outlined in the response at Exhibit I.SEC.9 Table 1, have been included in the Updated AHR and RAM study analysis.

1. K706 CP - Engine Block Foundation Replacement – Unit K706's foundation age has been set to 0 as of January 22, 2018, the date at which the foundation replacement was completed.
2. K705 CP - Crank Repair (Replacement)– Unit K705's crankshaft age has been set to 0 as of September 18, 2019, the date at which the crankshaft replacement was completed.
3. K701 CM - Crank Misalignment due to Foundation Damage – Unit K701's foundation damage has been applied to the foundation and crankshaft AHR models as degradation multipliers, the issue is ongoing as of the timing of this filing.
4. K708 CP - Engine Block Foundation Replacement – Unit K708's foundation age has been set to 0 as of April 25, 2020, the date at which the foundation replacement was completed.
5. K707 CP - Engine Block Foundation Replacement – Unit K707's foundation age has been set to 0 as of April 22, 2021, the date at which the foundation replacement was completed.

ENBRIDGE GAS INC.

Undertaking Response to School Energy Coalition

For the 320 PJs of storage capacity and the 6.4 PJs of peak demand deliverability, to provide a breakdown into regulated and unregulated, and Enbridge and Union rate zones.

Response:

Table 1

	EGD Rate Zone	Union Rate Zone
Total Working Capacity (PJ)	126.7	185.1
Regulated	99.7 (1)	100.0
Unregulated	27.0	85.1
Design Day Deliverability (TJ/d)	2,372	3,873
Regulated	1,894	2,246 (2)
Unregulated	478	1,627 (3)

NOTES:

(1) 99.4 PJ for Tecumseh storage plus 0.3 PJ for Crowland storage (which was not considered in NGEIR).

(2) The in-franchise design day storage deliverability in Table 1 reflects the utilization by Regulated customers but does not reflect allocated costs affirmed in EB-2011-0038.

(3) Includes high deliverability storage developed for natural gas-fired electricity generators.

ENBRIDGE GAS INC.

Undertaking Response to School Energy Coalition

To advise the proportion of pipeline cost to be allocated to regulated versus the non-regulated business, based on the current methodology; to advise if the answer would be any different if any of the alternatives were ultimately chosen.

Response:

The proportion of the Project cost to be allocated to the utility business is 100% as the Project replaces the existing capacity of the original assets proposed to be retired and abandoned that are currently allocated 100% to the utility business. This accounting treatment is consistent with the OEB's determinations in the NGEIR proceeding (EB-2005-0551) that the capacity dedicated to providing storage services to EGD in-franchise customers would remain regulated, and thus that all existing EGD Tecumseh storage capacity held at that time would be treated that way. Please also see the response at Exhibit JT1.3 for further discussion regarding the OEB's determinations in this regard resulting from the NGEIR and subsequent proceedings.

This treatment would not be any different if any of the alternatives assessed by the Company were selected instead of the proposed Project, including both facility and non-facility/supply-side alternatives.

ENBRIDGE GAS INC.

Undertaking Response to School Energy Coalition

To provide the final Enbridge gas approval.

Response:

The presentation provided to the Enbridge Gas Utility Leadership Team for endorsement of the Project in support of receiving full funding approval is set out at Attachment 1 to this response.

The presentation was prepared in May 2021, approximately 14 months in advance of Enbridge Gas filing its Application with the OEB. As a result, certain information included in the presentation (e.g., capacity, costs, cost recovery treatment, and alternatives) is no longer relevant and/or differs from the presentation made to the Enbridge Inc. Board of Directors (see the response at Exhibit I.SEC.1 Attachment 1) in October 2021 and the current Application.

Dawn to Corunna Project

Utility Leadership Team Meeting

May 3, 2021

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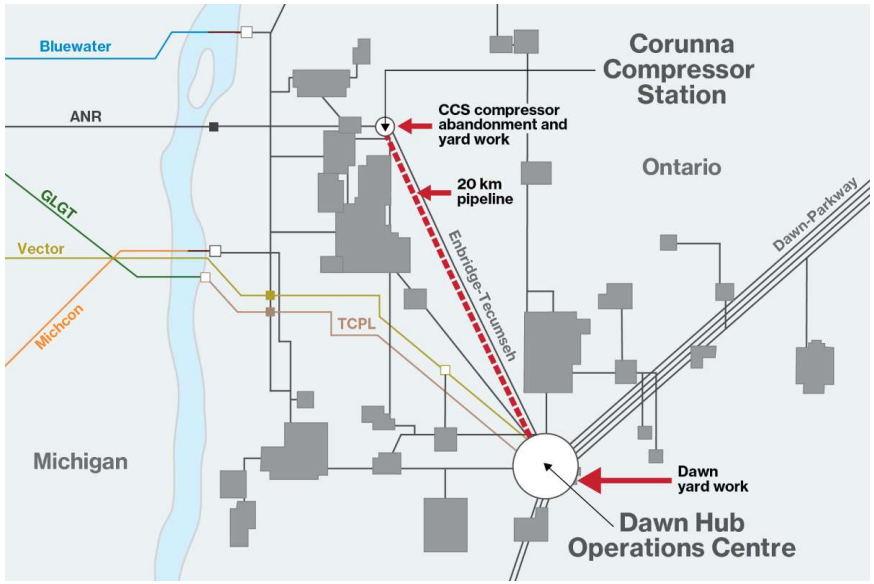
Background

- The Corunna Compressor Station (CCS) has 11 reciprocating compressor units totalling 36,750 HP known as K701 through K711 and range in installation date from 1964 to 1995. These compressors are housed within 3 buildings; K701 to K705 in building one, K706 to K710 in building two and K711 in building three.
- The project consists of retiring and abandoning compressor units K701 to K703, K705 to K708 – a total of 7 units - and building a ~20km NPS 36 pipeline from Dawn to CCS creating a third pipeline loop between these stations.
- The Dawn to Corunna project will replace the equivalent design day storage capacity of ~1.4 PJ/d previously provided by the 7 compressors at CCS and will re-utilize horsepower at Dawn to replace the capacity.
- The main drivers for project need are reliability & obsolescence based on high failure frequency, access to OEM parts, compliance with regulations (K701) and health & safety risk of density of equipment, presence of people and time in compressor buildings one and two.
- The pipeline is estimated to cost $226.6MM and will be allocated 100% regulated based on the original cost allocation of the 7 compressor units being retired and will seek cost recovery using the OEB's Incremental Capital Module (ICM) mechanism.

Project Map



Project Description

Scope	Pipeline: Install ~20km NPS 36 pipeline between Dawn Compressor Station and Corunna Compressor Station (CCS) Tie-ins: Header and valve connections at CCS and header and valve connections and filtration at Dawn Abandonment: Abandonment of K701-K703, K705-K708 compressors and abandonment of Tecumseh Meter Runs at Dawn
Capex	CAD$226.6 MM (including $2.9 MM of IDC and $39.7 MM of capitalized overhead)
Commercial Terms	Regulated cost of service project per OEB's Incremental Capital Module ("ICM")
Key Dates	• Complete environmental assessment (August 2021) • Enbridge Board Full Funding Approval (November 2, 2021) • Submit Ontario Energy Board leave to construct application (Nov 15, 2021) • Receive Ontario Energy Board approval (July 2022) • Begin expropriation (if required) (August 2022) • Commence construction pipeline and station work (April 2023) • In service (November 2023)
Capacity	• ~1.4 PJ/d

Project Alternatives

Stage 1 Economic Evaluation

ENBRIDGE

No.	Project Alternative	Capital Cost (not including overheads or IDC)	Annual O&M Cost	NPV
1	NPS 36 Pipeline	$184.0MM	$5.2MM	($212.0MM)
2	K712/K713 Gas Turbine	$178.0MM	$6.0MM	($217.2MM)
3	K712/K713 Electric Drive - $0.130/kwh	$184.0MM	$6.9MM	($242.5MM)
4	Commercial Alternative – Facility abandonment & procure market-based storage	Annual cost dependent on price of storage ($84.0 MM @ $0.70 CAD/GJ x 120 PJ)	N/A	N/A
5	IRP Alternative – NPS 30 pipeline + 90 TJ/d targeted DSM in Enbridge CDA	$169.0MM + $1,701.0MM (provides 15 year demand reduction)	N/A	N/A

Commercial/IRP alternatives significantly more expensive than facility alternatives

Financial Evaluation

DRAFT – Subject to Review

ENBRIDGE

Project Description

- The evaluation includes an allowed 9.0% return on equity (ROE) during the ICM Period (2023) for the portion of capital that is forecasted to be ICM eligible ($207.9MM including capitalized overhead and interest during construction).
- Following the ICM period, the revenue requirement for the total project is assumed to revert to a 4-year price cap cycle, with an allowed ROE of ~8.7%[1] for 2024 and each subsequent re-basing period. The price cap index is assumed at 1.7% annually.
- Evaluation parameters include:
  - $226.6MM CAPEX (including IDC and overheads)
  - 40 year asset life
  - 64:36 debt to equity ratio
  - 3.6% cost of debt
  - 26.5% Tax Rate
  - Terminal value set to the book value of equity

Financial Outlook

in $MM	2021-23	2024	2025	2026	2027	2028
Equity Cash Flow	(75.0)	8.3	8.8	8.9	9.1	9.3
EBITDA	(10.1)	17.5	17.8	18.1	18.4	18.7
Earnings	6.0	7.0	7.0	7.1	7.3	7.4
DCF	6.5	12.0	12.0	12.1	12.3	12.5
D/EBITDA		8.1x	7.8x	7.5x	7.2x	6.9x
Annual ROE		8.7%	8.8%	9.2%	9.7%	10.2%
DCF Accretion						
EPS Accretion						

DCFROE	**10.3%**
EV/EBITDA	13.1x
ROCE (5yr avg.)	6.1%

Investment realizes a strong return from low risk cost of service investment

[1] Assumption reflects the current forecast of allowed ROE for 2024 for EGI.

Strategy & Development

Topic	Position	Impact/Outcome
IRPA Evaluation	• The project will not pass IRP binary screening because of safety/reliability drivers, as well as the timing consideration. Completed a commercial alternative and IRPA to explore concept.	• Determine level of detail to include in LTC evidence.
Commercial/IRPa Issue	• Any alternative (commercial/IRP) that does not replace capacity 1:1 will restrict access to existing storage space and deliverability	• Restricting access to existing space/deliverability requirements has negative operational, commercial and market-based implications for the Dawn Hub
Cost Recovery	In October 2022, EGI plans to file: • 2023 Rates application (Phase 2) including ICM treatment for the costs of the Dawn to Corunna Project (filed fall 2022); and • 2024 Rebasing application including the first full year of revenue requirement (inclusive of the Dawn to Corunna Project - filed fall 2022).	• A Dawn to Corunna Project in-service delay will be managed through Regulatory mechanisms (e.g. ICM deferral account, adjustment to 2024+ revenue requirement) depending upon the timing and nature of the delay.

ENBRIDGE GAS INC.

Undertaking Response to FRPO

With reference to tab NPS 36, the discounted cash flow analysis for the respective alternatives, to provide updated amounts for 2022 and 2023 costs.

Response:

The compression alternative cost estimates and cashflows were last revised in October 2021, in support of receiving approval from the Enbridge Inc. Board of Directors to proceed with the proposed Project. The Company does not have any new information to update the compression alternative cash flow.

The Project DCF analysis was last revised in January 2022, in advance of filing the current Application with the OEB. Enbridge Gas has updated the Project cashflow based on the latest Project spend profile and an updated DCF analysis is set out at Attachment 1 to this response.

Dawn Corunna Storage Project
NPS 36 Pipeline
InService Date: Nov-01-2023

(201,558) **<<NPV**

UNION GAS LIMITED
DCF Analysis

Particulars	Constant	Unit	Total	2021 1	2022 2	2023 3	2024 4	2025 5	2026 6	2027 7	2028 8	2029 9	2030 10	2031 11	2032 12	2033 13	2034 14	2035 15	2036 16	2037 17	2038 18	2039 19	2040 20	2041 21
Flag for DCF Periods	-	Flag	42.00	- 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DCF Analysis																								
Cash Inflows:		Total for DCF Te	-																					
Total Revenue		$ 000's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenses:																								
O&M Expense		$ 000's	(112,278)	-	-	(1,552)	(1,664)	(1,777)	(1,891)	(2,005)	(2,119)	(2,234)	(2,349)	(2,376)	(3,120)	(2,431)	(2,459)	(2,488)	(2,518)	(2,548)	(2,579)	(2,610)	(2,642)	(2,675)
Municipal Tax		$ 000's	(44,719)	-	-	(773)	(787)	(801)	(815)	(830)	(845)	(860)	(876)	(892)	(908)	(924)	(941)	(958)	(975)	(992)	(1,010)	(1,028)	(1,047)	(1,066)
Income Tax		$ 000's	92,485	1	29	8,168	4,743	3,269	3,147	3,036	2,933	2,839	2,753	2,650	2,745	2,466	2,383	2,307	2,236	2,170	2,109	2,053	2,001	1,954
Net Cash Inflow		$ 000's	(64,511)	1	29	5,843	2,292	690	441	201	(31)	(255)	(472)	(617)	(1,283)	(889)	(1,017)	(1,139)	(1,257)	(1,371)	(1,480)	(1,586)	(1,688)	(1,787)
Cash Outflow:																								
Incremental Capital		$ 000's	208,457	422	40,678	155,704	10,078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
Change in Working Capital		$ 000's	144	-	-	46	3	3	3	3	3	3	3	1	22	(21)	1	1	1	1	1	1	1	1
Total Cash Outflow		$ 000's	208,602	422	40,678	155,750	10,082	3	3	3	3	3	3	1	22	(21)	1	1	1	1	1	1	1	53
Net CF Undiscounted		$ 000's	(273,113)	(422)	(40,649)	(149,907)	(7,790)	687	438	198	(34)	(259)	(476)	(618)	(1,305)	(868)	(1,018)	(1,140)	(1,258)	(1,372)	(1,481)	(1,587)	(1,689)	(1,841)
Net CF Cumulative (Undiscounted)		$ 000's		(422)	(41,070)	(190,977)	(198,768)	(198,081)	(197,643)	(197,445)	(197,479)	(197,738)	(198,214)	(198,832)	(200,137)	(201,006)	(202,023)	(203,163)	(204,421)	(205,793)	(207,274)	(208,861)	(210,551)	(212,391)
Cumulative Net Present Value:		@ Yr 42																						
Cum'ltive PV Net Inflow		$ 000's	(11,753)	1	28	5,210	7,147	7,703	8,042	8,189	8,167	7,998	7,699	7,326	6,587	6,099	5,568	5,000	4,403	3,782	3,144	2,491	1,829	1,162
Cum'ltive PV Net Capital		$ 000's	189,805	422	39,193	180,678	189,407	189,410	189,413	189,415	189,418	189,420	189,422	189,423	189,436	189,424	189,425	189,425	189,426	189,426	189,426	189,427	189,427	189,448
Cumulative NPV of Cash Flows		$ 000's	(201,558)	(422)	(39,165)	(175,468)	(182,260)	(181,707)	(181,371)	(181,226)	(181,250)	(181,422)	(181,724)	(182,097)	(182,849)	(183,325)	(183,857)	(184,425)	(185,023)	(185,644)	(186,283)	(186,935)	(187,598)	(188,286)

Years 42 Project NPV, Proj Life Years = 40 (201,558) $ 000's

Profitability Index:																								
By Year PI				0.00	0.00	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01
Project P.I.	(0.062)																							

Incremental Capital

Item																								
Land Rights	**1**	$ 000's	1,580	-	-	1,580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stations	**1**	$ 000's	77,671	112	7,806	69,753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage Wells	**1**	$ 000's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pipe - Steel	**1**	$ 000's	112,134	308	32,761	72,481	5,009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
Storage Compressors	**1**	$ 000's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage Structures	**1**	$ 000's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abandonment Costs	**1**	$ 000's	14,484	-	-	9,415	5,069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total IDC with Inflation and Sensitivity	**1**	$ 000's	2,588	3	111	2,474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Incremental Capital		$ 000's	208,457	422	40,678	155,704	10,078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
Cumulative Capex		$ 000's		422	41,101	196,804	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,882	206,935

Calculation of Cumulative Net Present Values

Revenue:																								
After Tax Discount Rate	4.920%																							
Cash Inflow		$ 000's		1	29	5,843	2,292	690	441	201	(31)	(255)	(472)	(617)	(1,283)	(889)	(1,017)	(1,139)	(1,257)	(1,371)	(1,480)	(1,586)	(1,688)	(1,787)
Flag for DCF Periods	42.0	Flag		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cash Inflow with Term and Stub		$ 000's		1	29	5,843	2,292	690	441	201	(31)	(255)	(472)	(617)	(1,283)	(889)	(1,017)	(1,139)	(1,257)	(1,371)	(1,480)	(1,586)	(1,688)	(1,787)
Mid Period DiscFactor@4.92% Project Year		Factor		0.9763	0.9305	0.8869	0.8453	0.8056	0.7679	0.7318	0.6975	0.6648	0.6336	0.6039	0.5756	0.5486	0.5229	0.4984	0.4750	0.4527	0.4315	0.4113	0.3920	0.3736
Discounted Cash Inflow		$ 000's		1	27	5,182	1,937	556	339	147	(21)	(170)	(299)	(373)	(739)	(488)	(532)	(568)	(597)	(621)	(639)	(652)	(662)	(668)
Cumulative Discounted Cash Inflow		$ 000's		1	28	5,210	7,147	7,703	8,042	8,189	8,167	7,998	7,699	7,326	6,587	6,099	5,568	5,000	4,403	3,782	3,144	2,491	1,829	1,162
Capital:																								
After Tax Discount Rate	4.920%	%																						
Total Capital Cash Flow		$ 000's		422	40,678	155,750	10,082	3	3	3	3	3	3	1	22	(21)	1	1	1	1	1	1	1	53
Flag for DCF Periods	42.0	Flag		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cash Outflow with Term and Stub		$ 000's		422	40,678	155,750	10,082	3	3	3	3	3	3	1	22	(21)	1	1	1	1	1	1	1	53
Begin of Period Disc Factor@ 4.92% Project Yea	-	Factor		1.0000	0.9531	0.9084	0.8658	0.8252	0.7865	0.7496	0.7145	0.6810	0.6490	0.6186	0.5896	0.5620	0.5356	0.5105	0.4865	0.4637	0.4420	0.4213	0.4015	0.3827
Discounted Capital		$ 000's		422	38,771	141,485	8,729	3	3	3	2	2	2	0	13	(12)	0	0	0	0	0	0	0	20
Cumulative Discounted Capital		$ 000's		422	39,193	180,678	189,407	189,410	189,413	189,415	189,418	189,420	189,422	189,423	189,436	189,424	189,425	189,425	189,426	189,426	189,426	189,427	189,427	189,448

Dawn Corunna Storage Project
NPS 36 Pipeline
InService Date: Nov-01-2023

UNION GAS LIMITED
DCF Analysis

Particulars	Constant	2042 22	2043 23	2044 24	2045 25	2046 26	2047 27	2048 28	2049 29	2050 30	2051 31	2052 32	2053 33	2054 34	2055 35	2056 36	2057 37	2058 38	2059 39	2060 40	2061 41	2062 42
Flag for DCF Periods	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
nalysis																						
Cash Inflows:																						
Total Revenue		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenses:																						
O&M Expense		(3,582)	(2,742)	(2,777)	(2,812)	(2,848)	(2,885)	(2,923)	(2,961)	(3,000)	(3,040)	(4,146)	(3,122)	(3,164)	(3,207)	(3,251)	(3,296)	(3,342)	(3,388)	(3,436)	(3,484)	(4,833)
Municipal Tax		(1,085)	(1,104)	(1,124)	(1,145)	(1,165)	(1,186)	(1,207)	(1,229)	(1,251)	(1,274)	(1,297)	(1,320)	(1,344)	(1,368)	(1,393)	(1,418)	(1,443)	(1,469)	(1,496)	(1,523)	(1,550)
Income Tax		2,142	1,871	1,836	1,803	1,774	1,747	1,724	1,703	1,684	1,669	1,938	1,645	1,636	1,629	1,624	1,621	1,619	1,619	1,620	1,622	1,969
Net Cash Inflow		(2,525)	(1,975)	(2,066)	(2,154)	(2,240)	(2,324)	(2,406)	(2,487)	(2,567)	(2,645)	(3,505)	(2,797)	(2,872)	(2,946)	(3,020)	(3,093)	(3,166)	(3,239)	(3,311)	(3,385)	(4,414)
Cash Outflow:																						
Incremental Capital		53	53	53	53	53	53	53	53	53	105	105	105	105	105	105	105	105	105	105	-	-
Change in Working Capital		27	(25)	1	1	1	1	1	1	1	1	33	(31)	1	1	1	1	1	1	1	1	40
Total Cash Outflow		80	27	54	54	54	54	54	54	54	106	138	74	106	106	106	106	106	106	106	1	40
Net CF Undiscounted		(2,605)	(2,003)	(2,119)	(2,207)	(2,293)	(2,377)	(2,460)	(2,541)	(2,621)	(2,751)	(3,643)	(2,871)	(2,978)	(3,052)	(3,126)	(3,199)	(3,272)	(3,345)	(3,418)	(3,386)	(4,454)
Net CF Cumulative (Undiscounted)		(214,996)	(216,998)	(219,118)	(221,325)	(223,618)	(225,996)	(228,456)	(230,996)	(233,617)	(236,368)	(240,011)	(242,882)	(245,860)	(248,913)	(252,039)	(255,238)	(258,510)	(261,855)	(265,273)	(268,659)	(273,113)
Cumulative Net Present Value:																						
Cum'ltive PV Net Inflow		263	(408)	(1,076)	(1,740)	(2,398)	(3,049)	(3,691)	(4,324)	(4,946)	(5,558)	(6,330)	(6,917)	(7,491)	(8,053)	(8,602)	(9,138)	(9,661)	(10,171)	(10,667)	(11,151)	(11,753)
Cum'ltive PV Net Capital		189,477	189,486	189,504	189,521	189,537	189,552	189,567	189,581	189,594	189,619	189,651	189,667	189,688	189,709	189,729	189,748	189,766	189,783	189,799	189,799	189,805
Cumulative NPV of Cash Flows		(189,214)	(189,894)	(190,580)	(191,261)	(191,935)	(192,601)	(193,258)	(193,905)	(194,541)	(195,177)	(195,980)	(196,583)	(197,180)	(197,762)	(198,331)	(198,886)	(199,427)	(199,954)	(200,467)	(200,951)	(201,558)

42 Project NPV, Proj Life Years = 40 (201,558)

Profitability Index:																						
By Year PI		0.00	(0.00)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Project P.I.	(0.062)																					

Incremental Capital

Item																						
Land Rights	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stations	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage Wells	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pipe - Steel	1	53	53	53	53	53	53	53	53	53	105	105	105	105	105	105	105	105	105	105	-	-
Storage Compressors	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage Structures	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abandonment Costs	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total IDC with Inflation and Sensitivity	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Incremental Capital		53	53	53	53	53	53	53	53	53	105	105	105	105	105	105	105	105	105	105	-	-
Cumulative Capex		206,987	207,040	207,092	207,145	207,197	207,250	207,302	207,355	207,407	207,512	207,617	207,722	207,827	207,932	208,037	208,142	208,247	208,352	208,457	208,457	208,457

ation of Cumulative Net Present Values

Revenue:																						
After Tax Discount Rate	4.920%																					
Cash Inflow		(2,525)	(1,975)	(2,066)	(2,154)	(2,240)	(2,324)	(2,406)	(2,487)	(2,567)	(2,645)	(3,505)	(2,797)	(2,872)	(2,946)	(3,020)	(3,093)	(3,166)	(3,239)	(3,311)	(3,385)	(4,414)
Flag for DCF Periods	42.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cash Inflow with Term and Stub		(2,525)	(1,975)	(2,066)	(2,154)	(2,240)	(2,324)	(2,406)	(2,487)	(2,567)	(2,645)	(3,505)	(2,797)	(2,872)	(2,946)	(3,020)	(3,093)	(3,166)	(3,239)	(3,311)	(3,385)	(4,414)
Mid Period DiscFactor@4.92% Project Year		0.3561	0.3394	0.3235	0.3083	0.2938	0.2801	0.2669	0.2544	0.2425	0.2311	0.2203	0.2099	0.2001	0.1907	0.1818	0.1732	0.1651	0.1574	0.1500	0.1430	0.1363
Discounted Cash Inflow		(899)	(670)	(668)	(664)	(658)	(651)	(642)	(633)	(622)	(611)	(772)	(587)	(575)	(562)	(549)	(536)	(523)	(510)	(497)	(484)	(601)
Cumulative Discounted Cash Inflow		263	(408)	(1,076)	(1,740)	(2,398)	(3,049)	(3,691)	(4,324)	(4,946)	(5,558)	(6,330)	(6,917)	(7,491)	(8,053)	(8,602)	(9,138)	(9,661)	(10,171)	(10,667)	(11,151)	(11,753)
Capital:																						
After Tax Discount Rate	4.920%																					
Total Capital Cash Flow		80	27	54	54	54	54	54	54	54	106	138	74	106	106	106	106	106	106	106	1	40
Flag for DCF Periods	42.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cash Outflow with Term and Stub		80	27	54	54	54	54	54	54	54	106	138	74	106	106	106	106	106	106	106	1	40
Begin of Period Disc Factor@ 4.92% Project Yea	-	0.3647	0.3476	0.3313	0.3158	0.3010	0.2869	0.2734	0.2606	0.2484	0.2367	0.2256	0.2150	0.2050	0.1954	0.1862	0.1775	0.1691	0.1612	0.1536	0.1464	0.1396
Discounted Capital		29	10	18	17	16	15	15	14	13	25	31	16	22	21	20	19	18	17	16	0	6
Cumulative Discounted Capital		189,477	189,486	189,504	189,521	189,537	189,552	189,567	189,581	189,594	189,619	189,651	189,667	189,688	189,709	189,729	189,748	189,766	189,783	189,799	189,799	189,805

ENBRIDGE GAS INC.

Undertaking Response to FRPO

To advise why Mr. Quinn's scenario cannot be done, including describing the constraint, and how that constraint was determined.

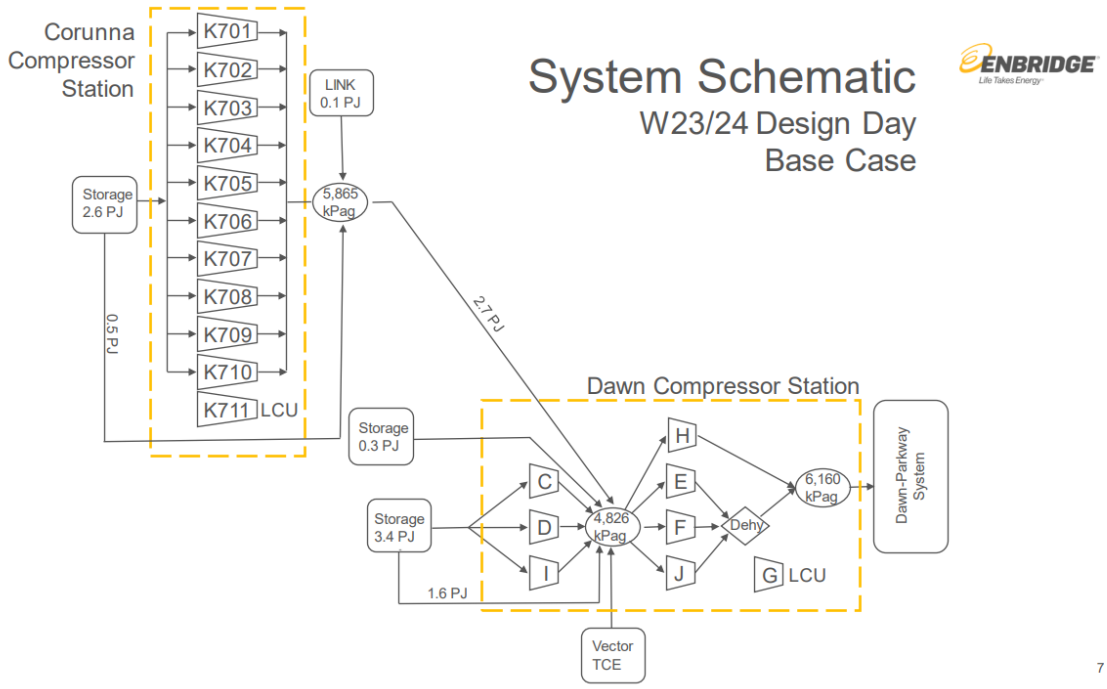
Response:

Enbridge Gas understands that Mr. Quinn has asked that Enbridge Gas explain:

> …what asset or class of assets is the constraint that limits the ability to increase the amount of capability of Dawn to pull on Dawn-related storage assets to supplement a shortfall coming from Corunna?

To aid in explaining the constraint(s) that limit the ability to increase the amount of capability of the Dawn storage system, Enbridge Gas is providing the system schematics set out in Figures 1 and 2 below that were discussed in detail as part of the presentation provided at the start of the Technical Conference and filed as Exhibit KT1.1.

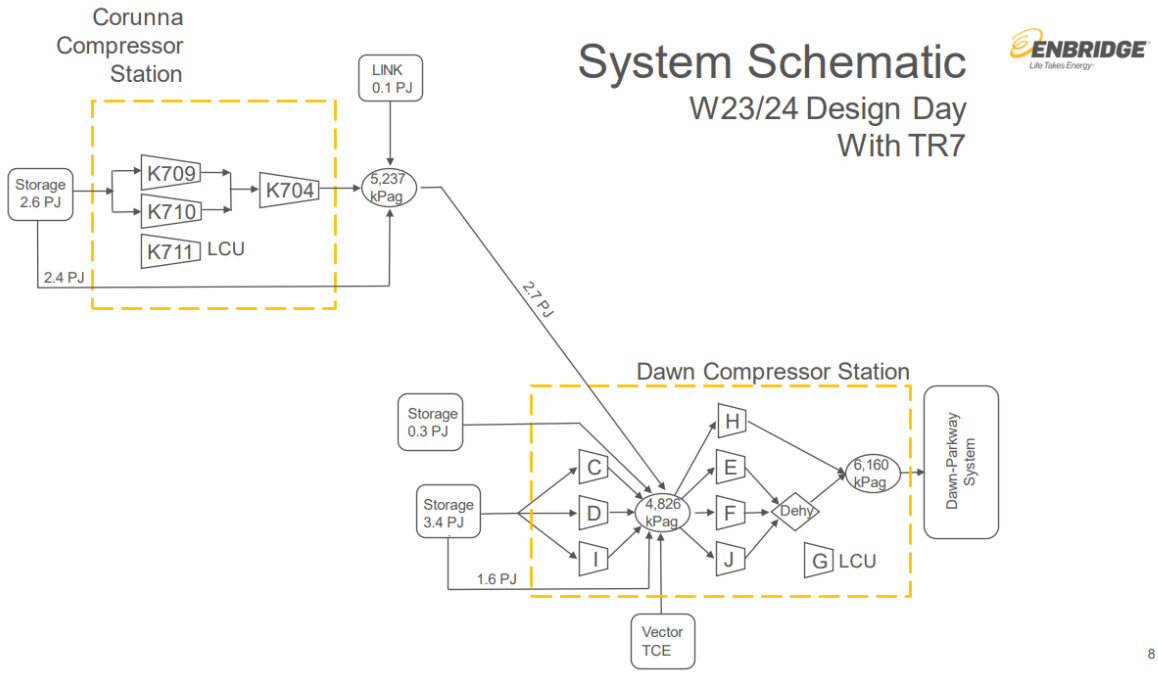
Figure 1



As displayed by the volumes and pressures shown in the current state “Base Case” schematic (Figure 1) compared to the “With TR7” schematic (Figure 2), the proposed

TR7 NPS 36 pipeline (and the compression alternatives that replace the equivalent 22,500 Hp of the 7 CCS compressor units proposed to be retired and abandoned) provides the same 1:1 capacity on Design Day.

Figure 2



The capability of the Dawn storage system is defined by:

- the unique porosity and permeability of each of the 35 underground storage reservoirs;
- over 350 injection/withdrawal wells;
- kilometers of gathering pipelines connecting the storage reservoirs to the CCS and the Dawn Compressor Station;
- the header piping and components within the stations;
- the capability of the 11 compressors at CCS and the 9 compressors at Dawn; and
- the dehydration system that dries wet storage pool gas to pipeline quality specifications before it leaves the Dawn Compressor Station.

In the response at Exhibit I.Staff.1 a), Enbridge Gas articulated that 4,200 Hp of Dawn storage horsepower is not being utilized on Design Day. The hydraulic model used as part of the Design Day analysis is currently set to fully utilize all available and usable horsepower in the Design Day analysis. The assets creating the system constraint are the Dawn storage pools and gathering systems delivering a minimum suction pressure to Dawn C Plant (a centrifugal compressor) that is restricted in its ability to utilize any incremental horsepower due to its defined operating range.

Centrifugal compressor capacity is defined by the size of the engine (amount of horsepower) and speed provided to the compressor to provide a flow rate based on a pressure ratio and efficiency. On a Design Day, full Dawn C Plant horsepower cannot be utilized as it is at the top end of its operating range. Therefore, 4200 Hp is unavailable to be utilized as the model is fully optimizing the capability of the integrated storage system.

In addition, surplus storage compression cannot be used to increase deliverability from CCS and Tecumseh storage pools since these volumes are arriving at Dawn at or near 4,826 kPa and are not utilizing Dawn Plants C, D and I at the storage suction level.

To summarize, the Company is maximizing the capability of the integrated storage system at the Dawn Hub to provide the maximum deliverability potential on Design Day. In other words, there is no further capability at the Dawn Hub to make up for the loss in deliverability from the CCS. In addition, surplus transmission horsepower of 11,737 Hp cannot be utilized to increase the deliverability of the integrated storage system as these compressor units perform a different operational pressure lift and cannot alleviate the existing constraint.

As displayed in Exhibit KT1.3, replacing 7 compressor units (K701-3 and K705-8) with a total horsepower of 22,500 and replacing with only 1 Taurus 70 or 1 Spartan E90 (approximately 12,000 Hp), leaves the integrated storage system at a deficit of deliverability to provide to customers on Design Day. As the Company detailed throughout its pre-filed evidence, interrogatories and through testimony during the Technical Conference, the proposed TR7 NPS 36 pipeline is the lowest NPV alternative that provides a 1:1 capacity replacement and also allows the Company to consolidate its compression fleet by utilizing Dawn Hp and increasing the overall reliability of the storage system.

Notwithstanding the technical infeasibility, Enbridge Gas also evaluated the economic feasibility of the scenario where the Company installs only one Spartan E90 Compressor instead of the Project. This alternative is also not economically feasible and does not resolve the underlying reliability, obsolescence or safety concerns driving the need for the proposed Project.

Of the total 666 TJ/d of Design Day deliverability required to be replaced, installation of this Spartan E90 compressor results in a shortfall in the EGD rate zone of 367 TJ/d. On a design day, the firm demand required to supply the Dawn-Parkway transmission system is 7,318 TJ/d. The demand is being supplied by a combination of gas from storage and supplies arriving at Dawn. If 7 CCS units are retired and abandoned and are replaced with one Spartan E90 compressor, the total flow from storage will decrease by 367 TJ/d. If the loss in storage deliverability is not replaced with an equivalent supply, the flow to the Dawn-Parkway system will be reduced by the same amount and EGD rate zone customers will not have enough supply to meet design day demand as planned from storage.

In order to provide a high-level estimate of the cost to meet this shortfall, Enbridge Gas leveraged the ICF analysis of options to replace the loss of storage set out within Exhibit C, Tab 1, Schedule 1, Attachment 2 at Exhibit 1-1 and sought guidance from ICF on how to apportion the supply-side cost of 367 TJ/d using ICF's original modelling.

Using ICF's lowest cost supply-side alternative as a proxy to provide a conservative estimate of the cost to replace the 367 TJ/d shortfall through market-based storage capacity (Option 2b in Exhibit 1-1, market-based storage at historical prices), Enbridge Gas prorated the share of replacing 367 TJ/d for this scenario out of the total 666 TJ/d capacity underpinning the ICF analysis. In order to evaluate the cost of deliverability only (as this single Spartan E90 compressor alternative does not result in a loss of storage space, only a loss in deliverability), Enbridge Gas removed the cost of storage space from the total cost of $519 million (provided by ICF as Net Present Value), which results in a deliverability cost of $436 million. Applying the prorated amount of deliverability required (367 TJ out of 666 TJ, or 55%), Enbridge Gas would incur a cost of approximately $240 million to meet the 367 TJ/d shortfall ($436 million x 55% = $240 million).

To summarize, installing only one Spartan E90 at a capital cost of $169 million and procuring the remaining Design Day shortfall of 367 TJ/d from upstream counterparties (if available for November 1, 2023) would cost an additional $240 million (NPV cost) which is significantly more expensive than the proposed Project at a capital cost of $206 million. Therefore, any scenario (including installing only one Spartan E90) that does not replace the full capacity of the 7 compressor units (and relies on procuring market-based storage vs. maintaining cost-based storage at Dawn) is significantly more expensive than the Project.

ENBRIDGE GAS INC.

Undertaking Response to IGUA

To confirm whether Enbridge requested a letter of support from the Sarnia Lambton economic partnership.

Response:

Yes, Enbridge Gas informed the Sarnia Lambton Economic Partnership ("SLEP") of the Project and requested that they consider providing a letter of support. Via related correspondence, Enbridge Gas highlighted that the proposed Project (if approved) will maintain the safe and reliable operation of Enbridge Gas' system in the local area, is expected to create incremental temporary construction jobs in Lambton County and may afford local suppliers with construction material sourcing opportunities.

ENBRIDGE GAS INC.

Undertaking Response to Pollution Probe

To confirm whether Enbridge has received endorsement or acceptance of the project by TSSA, and to provide a copy of that correspondence.

Response:

As stated in response to interrogatories at Exhibit I.STAFF.17, the TSSA responded to Enbridge Gas's preliminary Project information requesting information in the following four areas:

1. Request to submit design and piping specification when they are available.
2. Submit the High Consequence Area analysis once the route is finalized.
3. Provide a detailed construction schedule when available.
4. Provide details for material selection, pipe wall thickness, stress levels and maximum operating pressure.

The Company provided the information requested above to the TSSA on August 4, 2022. Enbridge Gas has not yet received approval by the TSSA for the Project. A copy of this correspondence is set out at Attachment 1 to this response.

Stephanie Allman

From: Andre Gougeon
Sent: Thursday, August 4, 2022 3:27 PM
To: Kourosh Manouchehri
Cc: prdfsnotifications
Subject: RE: Down-Corunna Project- WO - 8113525 TSSA:0000338008144
Attachments: Dawn to Corunna Pipeline - IFB Route - KMZ File - June 30, 2022.kmz; ST-1C-A2AC-3AF4 - HCA and Class Location Standard.pdf; Dawn-Corunna Pipeline's High-level Construction Schedule.pdf

Hi Kourosh,
Thank you for the call this morning.

As discussed please find below the design critera, the pipe technical data and calculations related to the pipeline project from Dawn to Corunna Station in Ontario. Also enclosed the KMZ file to give you an overview of the project.

Design criteria:

- Pirkxl$A$/5=29$bq $
- Pipe Diameter = 914.4 mm (NPS 36)$
- Specified Minimum Yield Strength (SMYS) = 483 MPa (70X)
- Design Pressure = 9,308 kPa (1,350 psig)
- Maximum Operating Pressure = 9,308 kPa (1,350 psig)
- Class Location = 2 (Checked PIR and 1.6 km length)
    - Farmlands with 11 to 45 dwelling units
    - No critical area
    - Dawn and Corunna Compression Stations have industrial activities with Enbridge employees and Contractors)
- Pipe Wall Thicknesses:
    - Mainline Wall Thickness = 12.7 mm
    - Road Crossing, Trenchless Boring (i.e., HDD, HD Bore, Jack Bore, etc.) = 17.7 mm
    - Busy areas, risk of future vehicle traveling, farming access road, Hydro-One = 17.7 mm
- Locator Factor (L):
    - Mainline = 0.900
    - Roads = 0.625
    - Other = 0.750
- No Valve
- No Railroad Crossing

Pipe Specifications:

Dawn to Corunna Station Pipeline **Design and Piping Specifications**

Mainline
Pipe, 914.4mm OD (NPS 36), 12.7mm W.T., LSAW, Grade 483, CAT II, M5C, FBE, QRL, CSA Z245.1-18
Road Crossings, HDD
Pipe, 914.4mm OD (NPS 36), 17.7mm W.T., LSAW, Grade 483, CAT II, M5C, FBE & ARO, QRL, CSA Z245.1-18

4-Aug-22

High Consequence Area:

Dawn to Corunna Station Pipeline
High Consequence Area

Pipeline	Design Pressure		Outside Diameter	Class Location	Potential Impact Radius	Rounded PIR	Notes
	P (kPa)	P (psig)	D (mm)		PIR (m)*	(m)	
Dawn to Corunna Pipeline (NPS 36)	9,307.9	1,350.0	914.4	2	276.1	280.0	Enbridge Gas Inc. - GDS ST-1C-A3AC-3AF4 - HCA and Class Location Design Standard
*Note -> 0.00313 * (PD^2)^0.5 = Radius measured on both sides of the proposed pipeline centerline							

4-Aug-22

Stress level calculation:

Location Type	Design Class Location	Pipe Grade MPa	Minimum Wall Thickness (mm) (CSA Z662-19) mm	Selected Wall Thickness mm	Hoop Stress % SMYS	Notes		
General	2	483	7.8	12.7	69.4%	Diameter =	914.4	mm
Road Crossings			12.8	17.7	49.8%	SYMS =	483	Mpa
Trenchless Crossings						Min. nominal wt =	5.6	mm
Traveling area						Min. nominal wt =	6.4	mm

4-Aug-22

I enclosed the DCP Pipeline Schedule for your information. The plan is to start construction in July 2023.

Would you please let me know if the information above needs to be filed in a specific format to TSSA.

Also please let me know what do you need to start your review.

Thank you again.

Andre Gougeon, P. Eng.
Pipeline Engineering - L5WSRP / D2C Project
Enbridge / Core Projects
Phone:.....780-508-8031
Mobile:.....780-231-9148
E-mail:..... andre.gougeon@enbridge.com

From: Kourosh Manouchehri <KManouchehri@tssa.org>
Sent: Thursday, August 4, 2022 8:02 AM
To: Andre Gougeon <andre.gougeon@enbridge.com>
Cc: prdfsnotifications <prdfsnotifications@tssa.org>
Subject: [External] Down-Corunna Project- WO - 8113525 TSSA:0000338008144

Hi Andre,

This is the email I was talking about. Please response to the following items for review of this application.

As mentioned in our conversation, the new TSSA Work Order (WO) number for this project is 8113525.

Please let me know if you have any question.

Regards,

Kourosh Manouchehri, P.Eng., PMP | Engineer, Fuels
Engineering
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1 416-734-3539 | | Fax: +1 416-231-7525 | E-Mail: kmanouchehri@tssa.org
www.tssa.org

Winner of 2022 5-Star Safety Cultures Award

From: Kourosh Manouchehri <KManouchehri@tssa.org>
Sent: October 4, 2021 1:07 PM
To: Adam Leitenberger <Adam.Leitenberger@enbridge.com>
Subject: [External] Down-Corunna Project- SR#3102970

Hi Adam,

TSSA reviews and audits pipeline projects submitted to OEB for leave to construct. The review and audit scopes are limited to technical aspect of the project and compliance to Ontario Regulation 210/01: Oil and Gas Pipeline Systems, Current Oil and Gas Pipelines CAD and adopted standards including CSA Z662-19. Based on your submitted application and accompanying documentation we would like to bring to your attention the following:

1) Design and piping specification was not provided with the submitted application. Please submit the requested information when available.
2) Based on the EA posted in Enbridge website, I believe the final route is not defined at this stage of the project. Depends on the final selected route, please provide the High Consequence Area calculation.
3) It seems that the construction of this project is scheduled for 2023. Please submit the detailed construction schedule for this project, when available.
4) Submitted application does not show the selected material, standard, pipe wall thickness, stress level on the pipe and maximum operating pressure. Please submit the required information when available.

I will continue this application upon receipt of the above requested information.

Regards,

Kourosh Manouchehri, P.Eng., PMP | Engineer, Fuels
Engineering
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1 416-734-3539 | | Fax: +1 416-231-7525 | E-Mail: kmanouchehri@tssa.org

From: Angelina Brew <abrew@tssa.org>
Sent: September 2, 2021 3:12 PM
To: ADAM.LEITENBERGER@ENBRIDGE.COM
Cc: Kourosh Manouchehri <KManouchehri@tssa.org>
Subject: Pipeline Applications -ENBRIDGE GAS INC - 500 CONSUMERS RD,NORTH YORK ON M2J 1P8 - SR#3102970

Good Afternoon,

We have processed your application for a Pipeline at 500 CONSUMERS RD,NORTH YORK ON M2J 1P8 - our file SR# 3102970. This file has been assigned to Kourosh Manouchehri.

Please contact Kourosh Manouchehri via email kmanouchehri@tssa.org, if you have additional questions.

Thanks

Angelina Brew | Program Support
Shared Services
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1 416-734-3477 | Cell: +1 437-221-4624 | Fax: +1 416-231-7525 | E-Mail: abrew@tssa.org

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ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide a written response as to how Enbridge is meeting TRCC 92.

Response:

Enbridge's engagement and relationships with Indigenous groups are guided by, among other things, the principles of the United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP") and TRCC #92. As stated in our 2022 report: Continuing our Path to Reconciliation: Indigenous engagement and inclusion — An update:[1]

> Building respectful relationships with Indigenous groups has historically been part of our business, although our approach and guiding policies have had to evolve over time. Our first Indigenous Peoples Policy was introduced in 2001, and guided our engagement with Indigenous groups both within and outside of North America. In 2009, with assets focused solely within Canada and the United States, we updated our approach and released the Aboriginal and Native American Policy. That policy was further updated in 2016 and 2018 to the current Indigenous Peoples Policy (IPP) in response to the Truth and Reconciliation Report: Call to Action #92 and to recognize the importance of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). At Enbridge, we're working to build sustainable respectful relationships, with the goal of working with potentially impacted Indigenous groups to identify and resolve concerns. We have been, and continue to be, focused on integrating our commitments under the IPP into our internal processes and systems and turning our commitments into concrete actions through the development of our lifecycle approach…
>
> At Enbridge we have implemented a "Lifecycle Approach" to relationships and engagement. We are committed to building respectful, constructive and enduring relationships that foster trust with and generate benefits for Indigenous groups over the lifecycle of our assets—from project proposals and design through construction, operations, maintenance and, to ultimately and safely removing a pipeline from service at the end of its useful life. We recognize consistency and continuity are important to developing and maintaining positive relationships. Long-term relationships are built on trust and respect, and are critical to creating sustainable and mutually beneficial outcomes. We have come to recognize the need for continual engagement—not just when we're actively working in an area or during a project, but constantly and consistently with all those in proximity to our operating assets.

Enbridge Gas recognizes the Three Fires Group and CKSPFN's interest in early engagement and will continue to engage with them in relation to the Project to avoid or mitigate any potential impacts the Project may have on their rights and interests. Enbridge Gas began engagement with CKSPFN in January 2021 before official project

[1] https://www.enbridge.com/~/media/Enb/Documents/Reports/ENB_Path_to_Reconciliation_Progress_Report.pdf#page=8

commencement. Enbridge Gas continues to engage with CKSPFN and other potentially affected Indigenous groups and plans to maintain ongoing efforts in this regard.

TRCC Call to Action: Business and Reconciliation #92 states:[2]

> We call upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources. This would include, but not be limited to, the following:
>
> i. Commit to meaningful consultation, building respectful relationships, and obtaining the free, prior, and informed consent of Indigenous peoples before proceeding with economic development projects.
>
> ii. Ensure that Aboriginal peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and that Aboriginal communities gain long-term sustainable benefits from economic development projects.
>
> iii. Provide education for management and staff on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require skills based training in intercultural competency, conflict resolution, human rights, and anti-racism.

Enbridge Gas is working toward meeting TRCC #92 through the following:

- Enbridge Gas endeavors to engage as early as possible in the Project planning stage, taking into account the scale and scope of the Project, by sharing Project-related information with potentially affected Indigenous groups, and meeting with Indigenous groups as per their interest to obtain their input and guidance as to how any potential impacts the Project may have on Aboriginal rights and interests can be avoided or mitigated, as appropriate. This includes, for example, seeking and responding to comments on Project-related environmental or archaeological reports, inclusion in monitoring, consideration of Project changes and potential business or employment opportunities. Through its engagement, Enbridge Gas aims to secure the free, prior and informed consent of potentially impacted Indigenous groups, to the greatest degree possible (recognizing, that legally consent is not required except in certain circumstances).

- Enbridge Inc. has implemented an Indigenous supply chain management program which requires contractors to abide by instructions presented in the Socio-Economic Requirement of Contractors (“SERC”) and to develop an Indigenous participation & inclusion plan which is evaluated in the bid review process and contract managed when implemented.

[2] https://publications.gc.ca/site/eng/9.801236/publication.html

- As part of a suite of Enbridge Inc.'s ESG goals, by 2025, Enbridge Inc. is striving to achieve 3.5% representation within our workforce of Indigenous people and is undertaking specific recruitment and retention efforts in this regard.

- As part of Enbridge Inc.'s ESG goals, by the end of 2022, Enbridge Inc. has targeted completion of Indigenous awareness training by 100% of its workforce (i.e. employees and contractors) to enhance our understanding and knowledge of Indigenous culture and rights (please see the response to Exhibit I.JT2.22 for more information Enbridge Gas's indigenous awareness training). Enbridge Inc. contributes to supporting Indigenous education and training efforts through community investment initiatives corporately and locally. In Ontario alone, in 2022, Enbridge Inc. will contribute approximately $200,000 towards Indigenous community investment.

- Through its lifecycle engagement program, Enbridge Gas enters into long term relationship agreements designed to support operational engagement, provide capacity funding as needed, and offers Project-related agreements when appropriate.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly “CKSPFN”

To clarify the status of the review and where things stand.

Response:

Review and compilation of responses to CKSPFN comments on the Environmental Report is currently ongoing.

Enbridge Gas and its environmental consultant (Stantec) expect to provide responses to CKSPFN comments on the Environmental Report on or before August 31, 2022.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To confirm (a) whether the Ontario breeding bird atlas was searched; (b) why the butterfly atlas was examined but not the moth atlas.

Response:

a) The Breeding Bird Atlas was searched for the Project.

b) As Endangered, Threatened or Special Concern moth species in Ontario are not expected to occur in the Project Area, the Moth Atlas was not explicitly referenced in the Environmental Report.

   Enbridge Gas will consult the Moth Atlas for potential presence of rare species (S1, S2 or S3) and will include relevant mitigation, if deemed to be needed, in the forthcoming Natural Heritage Report that will detail the findings of the natural heritage field surveys.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly “CKSPFN”

To provide scope 1 emissions for the project, once it is in operation.

Response:

Please see the response at Exhibit JT1.18 for discussion of Enbridge Gas’s assessment of Scope 1 emissions for the Project.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide current data regarding emissions of nitrous oxides, volatile organic compounds, or sulphur dioxide for the pipeline, the dawn station, and the Corunna compressor station.

Response:

Enbridge Gas calculates annual nitrous oxides ("NOx"), volatile organic compounds ("VOC"), and sulphur dioxide ("SO_2") emissions annually as part of the regulatory requirement to calculate criteria air contaminants under the National Pollutant Release Inventory ("NPRI"). The most current values (2021) for the Dawn Station and CCS sites are set out in Table 1 below. Although the Company is only required to calculate VOC emissions due to stationary combustion, in order to be complete, values provided in Table 1 below include VOC emissions due to venting and fugitive emissions.

As the proposed TR7 pipeline has not yet been constructed, there are no current emissions for comparison. Instead, Enbridge Gas has assessed emissions associated with the proposed TR7 pipeline (operational only) and provided a forecast of emissions in Table 1.

Table 1

	NOx (tonnes)	VOC (tonnes)	SO_2 (tonnes)
Dawn Station (2021)	217	8	0.06
Corunna Compressor Station (2021)	60	26	0.01
TR7 Pipeline (forecast)	0[1]	0.2	0[2]

[1] There are no stationary combustion emissions specifically associated with the proposed TR7 pipeline.
[2] There are no stationary combustion emissions specifically associated with the proposed TR7 pipeline.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide the numbers specific to nitrous oxides, volatile organic compounds, or sulphur dioxide that are required to be reported by facilities pursuant to the Canada-U.S. air quality agreement.

Response:

Enbridge Gas is required to report annually to the National Pollutant Release Inventory ("NPRI") where criteria air contaminant ("CAC") emissions exceed the following annual thresholds:

NOx: 20 tonnes
VOCs: 10 tonnes
SO_2: 20 tonnes

For the 2021 calendar year, the total reportable emissions reported to NPRI for Enbridge Gas facilities which exceeded CAC annual thresholds were:

NOx: 746 tonnes
VOCs: 173 tonnes
SO_2: 0 tonnes

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide some information on what technology was used for a foot patrol.

Response:

A Flame Ionization gas detector is utilized during the foot patrol. While walking the pipeline, a surveyor would walk as close as practical to the pipeline while sweeping the probe, adjusting for windy conditions. A foot patrol also includes a visual inspection of surroundings and indications of damage that could result in gas leakage or be caused by gas leakage.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To advise the threshold for repairing fugitive emissions leaks.

Response:

Enbridge Gas complies with the requirements set out within the *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)* (the "Regulation").[1]

Under the Regulation, a release of hydrocarbons is considered to be a leak if it consists of at least 500 ppmv of hydrocarbons. The Regulation requires that all such leaks be repaired within 30 days (with some tolerance for unique circumstances/conditions).

[1] https://laws-lois.justice.gc.ca/eng/regulations/SOR-2018-66/index.html

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide Enbridge's definition of industry-approved best management practices, whether there is something internal to Enbridge beyond federal or provincial guidelines.

Response:

Beyond the federal or provincial guidelines referenced by Three Fires Group, Enbridge Gas has also implemented a harmonized leak operating standard which is compliant with the requirements of CSA Z620.1 and the *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)*.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly “CKSPFN”

To advise whether Enbridge has any plans to blend hydrogen into TR7, and if so, what percentage.

Response:

Enbridge Gas has no specific plans to blend hydrogen into TR7 at this time.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide a comprehensive answer regarding the requirements of the OEB guidelines that were used to develop the environmental report and where that fits in.

Response:

Counsel for the Three Fires Group asked Enbridge Gas if it considered the social impacts of the pipeline construction workforce on the surrounding communities as it relates to the potential for substance abuse, disproportionate impacts on women in communities, and impacts on the sex trade.

The Dawn to Corunna Environmental Report was prepared with consideration of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and facilities in Ontario, 7th Edition (2016)*. Guidance on the consideration of Social Impacts is provided in Section 4.3.13 of the OEB Environmental Guidelines. The Guidelines discusses "both real and perceived health and safety risks" at pages 41 and 42, which in the Dawn to Corunna Environmental Report are addressed through mitigation recommendations such as safety fencing and a Traffic Management Plan (see Table 5.1 of the Environmental Report). The Guidelines do not speak to items such as substance abuse, impacts on women in communities, and impacts on the sex trade. Enbridge Gas is aware that Gender-based Analysis (GBA+) is a requirement of the federal environmental assessment processes, however, such analysis was not completed for the Project due to its limited scope, anticipated small workforce, and short duration of construction.

While Missing and Murdered Indigenous Women is not specifically referenced within the Environmental Report, Enbridge Gas' general contractors are required to follow Enbridge policies including the Supplier Code of Conduct, which states "Enbridge believes that each individual with whom we come in contact deserves to be treated fairly, honestly, and with dignity. We do not condone any form of harassment, discrimination, or inappropriate actions or language of any kind." Drug and Alcohol Programs, Respectful Workplace Training and Indigenous Peoples Awareness Training are specific to the Construction Contractor(s) that will construct the projects, which haven't been selected yet.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To provide details about the internal training documentation and modules.

Response:

While Indigenous awareness training has generally been a part of Enbridge Inc.'s approach since 2018, Enbridge Inc. has advanced this training over time to provide increased exposure, experiences and relevant information to build a deeper understanding of and appreciation for Indigenous Peoples, including:

(i) an overview of key concepts, including government laws and policies and their effects on Indigenous Peoples;
(ii) the protection and restoration of treaty rights; and
(iii) raising of awareness of the historical injustices and lasting impacts of the treatment of Indigenous Peoples.

Specific topics addressed in the training include:

(i) pre-contact and post-contact experiences of Indigenous peoples;
(ii) the Canadian constitution as it relates to Indigenous Peoples;
(iii) the history and impact of the Indian Act;
(iv) the history and impact of Residential Schools;
(v) the United Nations Declaration on the Rights of Indigenous Peoples;
(vi) the Truth and Reconciliation Commission Report; and
(vii) Missing and Murdered Indigenous Women.

The Enbridge Inc. Indigenous Awareness Training Program, which applies to Enbridge Gas, was developed through a partnership with a respected 100% Indigenous owned Training Company, a First Nations Enbridge Inc. employee who was a former College Professor in Indigenous Programming and a working group of Indigenous and non-indigenous employees.

Beginning in 2021, all new employees are required to complete the training as part of their onboarding and all employees and contractors are expected to complete the training by the end of 2022. As of August 9, 2022, 87% of Enbridge Inc. employees have completed the mandatory Indigenous Awareness online training program.

ENBRIDGE GAS INC.

Undertaking Response to Three Fires Group, formerly "CKSPFN"

To advise which First Nations owned and operated media outlets has Enbridge advertised notices with regarding the projects.

Response:

The Sarnia Observer and Sarnia This Week were used for the display ads for the Project. In addition to this, Enbridge Gas had digital ads for the Virtual Open Houses on Facebook and Twitter in May and July 2021.

Enbridge Gas is interested in learning of Indigenous owned and operated media outlets in Southwest Ontario where future digital and print ads regarding our projects can be placed. Enbridge Gas would welcome any recommendations from Three Fires Group in that regard.

ENBRIDGE GAS INC.

Undertaking Response to OEB Staff

To answer the following questions: when was the instance of insufficient cover first identified by Enbridge gas? When did Enbridge gas first inform the landowner about the insufficient depth of cover and any potential safety issues? When did Enbridge gas initiate the load assessment? How long does it typically take to perform a loading assessment? And when does Enbridge anticipate informing the landowner of the results of the loading assessment.

Response:

Enbridge Gas identified the instance of insufficient depth of cover discussed in the response at Exhibit I.CAEPLA-DCLC.4 on May 23, 2019

Enbridge notified the affected landowner the same day the issue was identified (May 23, 2019). From this date to current day Enbridge Gas has been in communication with the landowner providing updates on the situation. The landowner is satisfied with Enbridge Gas communications and plans to mitigate this situation.

A load assessment has not been completed by Enbridge Gas at this location. Instead, and as a result of discussions with the landowner, the Company took a more conservative approach by installing a fencing to protect the area and prevent access and traffic across the pipeline. Enbridge Gas is compensating the landowner for their inability to use this land. The affected landowner and Enbridge Gas have mutually agreed to defer permanent resolution of this instance of insufficient depth of cover until after the Project is constructed. This decision minimizes the number of site visits, equipment on site, and impacts to the landowner. Crop loss payments will continue to be paid until such time that the issue can be resolved permanently.

At this time Enbridge Gas does not anticipate that it will complete a load assessment since the area has been isolated from traffic. However, completion of a load assessment internally typically takes approximately two weeks. Specific information about the equipment (size, weight, number of axles, etc.) would be required to provide a more specific estimate. If a load assessment is performed, the results will be provided to the landowner.

ENBRIDGE GAS INC.

Undertaking Response to OEB Staff

To provide an update on the status of the indigenous consultation for the project with respect to that letter of opinion from the Ministry.

Response:

As of the date of this filing, Enbridge Gas understands that the MOE is waiting for a final submission from potentially affected Indigenous communities regarding the sufficiency of Project consultation before making a determination or issuing a letter of opinion regarding the same.

The most recent correspondence from Enbridge Gas to the MOE occurred on July 25, 2022, as per the requirements from the MOE. Enbridge Gas advised the MOE of the CKSPFN water assertion that was provided to Enbridge Gas on June 10, 2022. Enbridge Gas also advised the MOE that Caldwell First Nation requested to be a part of the fieldwork monitoring that is taking place on the Project. The MOE confirmed receipt of the July 25, 2022 email on the same day.