

ENBRIDGE GAS DISTRIBUTION INC. RESPONSE TO
BOMA INTERROGATORY #19

INTERROGATORY

Issue: A.1; A.5

- (a) Please provide the pressures at which gas enters or will enter Enbridge's High Pressure System at each current and proposed entry point to its system, including:
- Victoria Station
 - Parkway (suction)
 - Lisgar
 - Parkway West (new)
 - Albion (new)
 - Markham
 - Any others
- (b) Please discuss the pressure at which the gas exits the stations listed above.
- (c) Please provide the pressure reduction achieved at each of Union's stations in the GTA Influence Area, that is the pressure (or range of pressures) on the incoming line vs. the pressure on the outgoing line(s). Please provide the information for each of the stations for 2012 and for each of the preceding three years, and in each case, for the peak day, the winter season, and the remainder of the year. Please discuss. What will the pressures be once Segment A and Segment B are constructed?
- (d) Please indicate the standard service pressure to each of the following categories of customers in the GTA influence area:
- (i) The Portlands Energy Centre ("Portlands"); in this case, please confirm that the Portlands minimum required (contractual) delivery pressure is 200 psi (1,378 kPa)
 - (ii) The other power plants
 - (iii) Large industrial customers
 - (iv) Large/medium/small commercial and institutional customers (six categories)
 - (v) Residential customers

Witnesses: C. Fernandes
E. Naczynski

- (e) Please provide the minimum pressure that must be maintained for each category of customer and the consequences of not maintaining that pressure. Please discuss. To what extent can the various customers augment the pressure at which the gas is delivered to their facilities by installing their own facilities, and to what extent can Enbridge repressurize its mains currently and/or service lines to augment the pressure at the point of interconnection with the customer? Please provide the number and type of customers that provided their own "behind-themeter" pressure enhancing facilities.
- (f) Please provide the "system operation model" used by Enbridge to regulate the operation of its system.
- (g) To what extent has Enbridge examined adding compression to selected parts of its system, such as in Downtown Central Toronto, to ensure that required minimum pressure at those facilities? Please discuss in detail. Has Enbridge ever added compression to its system or taken the steps to increase the pressure in any parts of its system? Please address separately each pressure category, as outlined at A.3.3, p3, Footnote #1.
- (h) In EB-2006-0305, rendered June 2007, in considering Enbridge's application to construct 6.5 km of pipeline parallel to a portion of Enbridge's Don Valley line and 2.9 km of pipeline that would interconnect the Don Valley line at Enbridge's Station B to Portlands, the Board stated that:

"The maximum operating pressure of the Don Valley Line is 450 psi(3100 kPa). Station B has a minimum inlet pressure of 225 psi (1550 kPa). The minimum inlet pressure is required for the station to have the capability to supply natural gas in sufficient quantities and at sufficient pressures to the downstream distribution pipeline system. Without the Portlands load, the existing Don Valley line is able to provide the required minimum inlet pressure at Station B with a Victoria Square Gate Station outlet pressure of 405 psi (2709 KPa) under Enbridge's system design conditions.

Enbridge examined the impact on pressures if the Portlands load is added and no reinforcement was undertaken. With an outlet pressure of 450 psi (3100 kPa) at Victoria Square Gate Station (the maximum operating pressure of the Don Valley Line) the pressure at Station B inlet pressure drops to 210 psi (1445 kPa) with the addition of the Portlands load. Unless reinforcement of the Don Valley Line was to occur, the Portlands load would remove any existing flexibility in the distribution system and the inlet pressure would be unacceptably low at Station B. As such, it was necessary for Enbridge to consider various alternatives to deliver gas in the required quantity and at the required pressure to Station B. Enbridge determined that the proposed North Section was the optimal choice."

Witnesses: C. Fernandes
E. Naczynski

- (i) Please describe in detail the charges between the June 1, 2007 and late 2012 that require Enbridge to construct an additional looping of the Don Valley line (between a new Buttonville station to the existing Jonesville station to maintain a minimum inlet pressure of 225 psi (1550 kPa) at Station B. In the answer, please relate the additional gas flow through the new loop from Buttonville to Jonesville, the enhancements to the Jonesville station, the pressure in the Jonesville/Station B segment of the line, and the minimum inlet pressures at Station B. Please explain the impact of reducing the SMYS ratio of the Don Valley line from thirty-seven percent to a level below thirty percent, and the additional line capacity and volume of gas in the line(s) required to implement that change.
- (j) To what SMYS ratio does Enbridge intend to reduce the Don Valley line to, from thirty-seven percent of SMYS (A, Tab 3, Sch 3, p18).

RESPONSE

a) At design condition (DD41):

Station	Contract Inlet	Outlet
Victoria Station	580 psi (4000 kPa)	450 psi (3103 kPa) / 350 psi (2410 kPa)
Parkway (suction)	500 psi (3450 kPa)	485 psi (3344 kPa)
Lisgar	500 psi (3450 kPa)	485 psi (3344 kPa)
Parkway West (new)	500 psi (3450 kPa)	485 psi (3344 kPa)
Albion (new)	580 psi (6447 kPa)	485 psi (3344 kPa)
Markham	580 psi (4000 kPa)	500 psi (3447 kPa)

- b) Please see the table above on the Outlet for each station.
- c) Minimum inlet and outlet pressures have been provided in the table above. Enbridge cannot speak to questions regarding the operation of Union Gas' system
- d) The standard service pressure to each of the following categories of customers in the GTA influence area is as follows:
 - (i) Portlands delivery pressure is 1379 kPa (200 psi)
 - (ii) This is not publicly available information.

Witnesses: C. Fernandes
 E. Naczynski

- (iii) Other large industrial customs can vary but are generally 70 to 700 kPa (10 to 100 psi)
- (iv) Delivery pressures to commercial and industrial customers can vary depending on their operation but are generally 14 to 700 kPa (2 to 100 psi)
- (v) Residential customers have a 2 psi or lower delivery pressure, generally 1.74kPa (7 inches water column)

e) Typical minimum system pressures on Enbridge System are noted below:

Pressure Category	Minimum System Pressure
Intermediate Pressure	70 kPa (10psi)
High Pressure	410 kPa (60 psi)
Extra High Pressure	690 kPa (100psi)

Minimum system pressures, throughout the distribution system, are governed by either the minimum inlet pressure required to maintain the required outlet pressure of the district station or by a minimum delivery pressure of a specific customer.

Enbridge does not track the customers that have 'behind the meter' pressure enhancing facilities nor do 'behind the meter' pressure enhancing facilities have impacts on the distribution system requirements.

- f) See response to BOMA Interrogatory #25 (d), part (ii) at Exhibit I.A1.EGD.BOMA.25 for operating system description.
- g) Please refer to APPrO Interrogatory 10 at Exhibit I.A4.APPrO.10.
- h) No question asked
- i) As noted in EB-2006-0305, the looping of the Don Valley line from Sheppard Avenue to Jonesville station in 2008 was to replace the capacity on the XHP system that was attributed to PEC. As referenced in Exhibit A, Tab 3, Schedule 1 Table 2, the GTA system requires additional facilities from Sheppard Avenue to the proposed Buttonville station.

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The reduction in pressure on the Don Valley line from 450psi to 375psi will result in a decrease in capacity at Station B of 165 TJ. In order to accommodate the future system growth and the pressure reduction on the Don Valley line, the proposed facilities are required.

- j) Please see response to BOMA Interrogatory #15 at Exhibit I.A1.BOMA.EGD.15(a).