2.0 NGEIR ISSUE I – SERVICES FOR GAS-FIRED POWER GENERATORS

Q1. How is this section of TransCanada's evidence organized?

A1. Section 2.1 provides TransCanada's understanding of the needs of proposed new gas-fired power generation facilities in Ontario. Section 2.2 presents two proposed new services by TransCanada, Firm Transportation Short Notice service (FT-SN) and Short Notice Balancing service (SNB), which are designed to provide the greater service flexibility and certainty that is required by a growing number of gas-fired electricity generators. Lastly, Section 2.3 summarizes TransCanada's evidence on Issue I. In addition, Appendix IA provides background information on TransCanada's existing Mainline services and flexibility features and Appendix IB contains a copy of TransCanada's application to the National Energy Board for approval of the new FT-SN and SNB services.

2.1 REQUIREMENTS OF NEW GAS-FIRED POWER GENERATION FACILITIES

Q2. What is TransCanada's understanding of the requirements of new gas-fired power generation facilities planned for Ontario?

A2. The Ontario Government is planning to replace 7,500 MW of existing coal-fired electricity generation over the next few years. The bulk of the replacement generation capacity is likely to be gas-fired, with much of that new generation capacity located in or near the Greater Toronto Area (GTA).

TransCanada also understands that some of the new facilities may demonstrate significant fluctuations in gas consumption from day-to-day and within the day based on five minute dispatch notifications from the Ontario Independent Electricity System Operator (IESO). A five minute dispatch notification reflects the physical requirement to balance electrical supply to electrical demand on a real-time basis. It also reflects the ability of each power facility to price-bid on a

short-term basis to meet real-time changes in electricity demand. Whether a plant gets dispatched for any five minute period depends on total electricity demand, availability of electricity supply from other generation facilities and the price of incremental electricity supply from each generation facility.

Q3. Will the operating patterns of some proposed gas-fired generation facilities differ from existing gas markets served by TransCanada through its Mainline?

A3. Yes, the operating patterns of some proposed facilities are likely to be significantly different. Natural gas consumption for industrial processes, cogeneration facilities and base-load power generation plants tends to be stable from day-to-day and within the day. Residential and commercial gas requirements fluctuate both within the day and seasonally, but such fluctuations tend to be predictable based on temperature, wind and time-of-day. The proposed new power generation facilities are likely to exhibit far greater fluctuations and unpredictability in consumption patterns, both within the day and from day-to-day.

Q4. Why can't TransCanada's existing services be used to meet the evolving requirements of power generators?

A4. Current services, such as Firm Transportation (FT), are not ideally suited to meet large loads with hourly flows that can vary significantly and change on short notice. For example, an FT shipper may not be able to obtain authorization of intra-day nomination increases. The FT shipper is only assured full access to firm capacity at the first nomination window for the day, and capacity not nominated by FT shippers (and shippers using other firm services) can be sold as discretionary services for the balance of that day. The nomination windows available for FT service (four windows daily) may not offer sufficient flexibility

to meet the evolving needs of the power generation market. Further, the maximum hourly rate of flow for FT service may not be flexible enough for such a market. Ultimately, there may be an increased risk of incurring balancing fees using FT service to meet the volatile power market.

Q5. Are new services required to meet the evolving needs of gas-fired electricity generators?

A5. Yes. TransCanada believes that development of new services, specifically tailored to meet the attributes of a growing number of gas-fired electricity generators, will provide additional service options for customers and better address the overall needs of this important new market.

2.2 PROPOSED NEW SERVICES FOR GAS-FIRED POWER GENERATORS

Q6. What new services aimed at meeting the needs of gas power generators is TransCanada proposing?

A6. TransCanada has developed two new services aimed at meeting the needs of gas-fired power generators. The first proposed new service for this market is called Firm Transportation Short Notice service (FT-SN), and the second is Short Notice Balancing service (SNB).

Q7. What will the FT-SN service do?

A7. FT-SN will allow a shipper to match its gas transportation closely with changes in the real-time electricity market. It will do so by authorizing the FT-SN shipper to nominate for service at intervals as frequent as every 15 minutes (up to 96 nomination windows per day). The service is structured to ensure that the FT-SN shipper will have the ability to nominate up to its contracted quantity at various times throughout the day. TransCanada will ensure that capacity will be available to meet changes at each nomination window. TransCanada will provide the

service by reserving capacity throughout the day to accommodate FT-SN nominations.

Q8. What will the SNB service do?

A8. SNB facilitates the effective operation of FT-SN by providing access to Mainline system flexibility for balancing purposes. TCPL will utilize Mainline compression and linepack to provide the flexibility as part of its response to the market need for variable consumption on short notice.

Q9. What are the attributes of the FT-SN service?

A9. The key attributes are:

1. firm access to service at each nomination window;
2. more frequent nomination windows;
3. flow rate nominations;
4. hourly flow limit based on daily contract quantity;
5. separate Distributor Delivery Areas; and
6. flow control.

Each of these attributes is discussed below.

Attribute 1: Firm access to service at each nomination window

. TransCanada understands that some new gas-fired generation facilities will operate year-round and will not have alternative fuel capability. Consequently, firm gas supplies and firm gas transportation must be available to a facility, on short-notice, at all times during the year and at all times during the Gas Day.

Current firm transportation services do not meet this requirement. As noted in A9 of Appendix IA, previously scheduled services cannot be "bumped" by increased nominations for FT service at intra-day windows. This means that the power plants with FT service cannot increase takes part-way through the Gas Day and be assured that transportation capacity will be available.

To address this need, TransCanada, under the proposed FT-SN service, will reserve capacity for contract holders throughout the Gas Day. The FT-SN service maximum hourly flow entitlement will be available at each and every nomination window.

Attribute 2: More frequent nomination windows

TransCanada understands that the Ontario electrical grid operates on a five minute dispatch basis. However, five minutes notice does not afford sufficient time to process a nomination change, validate it against contracts, confirm it with upstream and downstream operators and take any action to adjust operations to meet the changing requirements. At the same time, TransCanada's current gas nomination windows[1] do not provide sufficient flexibility to meet the expected short notice dispatch needs of the new power generation market.

TransCanada proposes nomination windows up to every 15 minutes as part of its FT-SN service. This period represents the minimum timeframe within which TransCanada believes that a nomination can be processed and actions initiated by its Gas Control to ready the Mainline system to respond to changes in flows. Obviously, longer lead times would be preferred and would offer greater opportunity to adjust pipeline operations. However, 15 minutes' notice strikes an

[1] Please refer to Tables A3 and A4 in Appendix IA for additional details on TransCanada's existing nomination windows.

appropriate balance between the five minute IESO dispatch window and TransCanada's ability to process and initiate response to flow change requests.

From the perspective of the power plant operator, 15 minute nomination windows should enable it to nominate closely to actual take levels throughout the day and minimize exposure to imbalance fees on the Mainline.

Attribute 3: Flow Rate Nominations

Current nominations on TransCanada's Mainline are daily quantities, which is the amount of gas to be transported and delivered over the Gas Day. Such nominations provide no information about the actual consumption or flow through the meter at any particular time during the day. Given the size of the loads for new power generation facilities and the likelihood of frequent changes in consumption, the existing daily approach to nominations do not provide sufficient information for TransCanada to be able to anticipate takes on a short-term basis (i.e., next 15 minutes) and adjust its operations to meet such requirements.

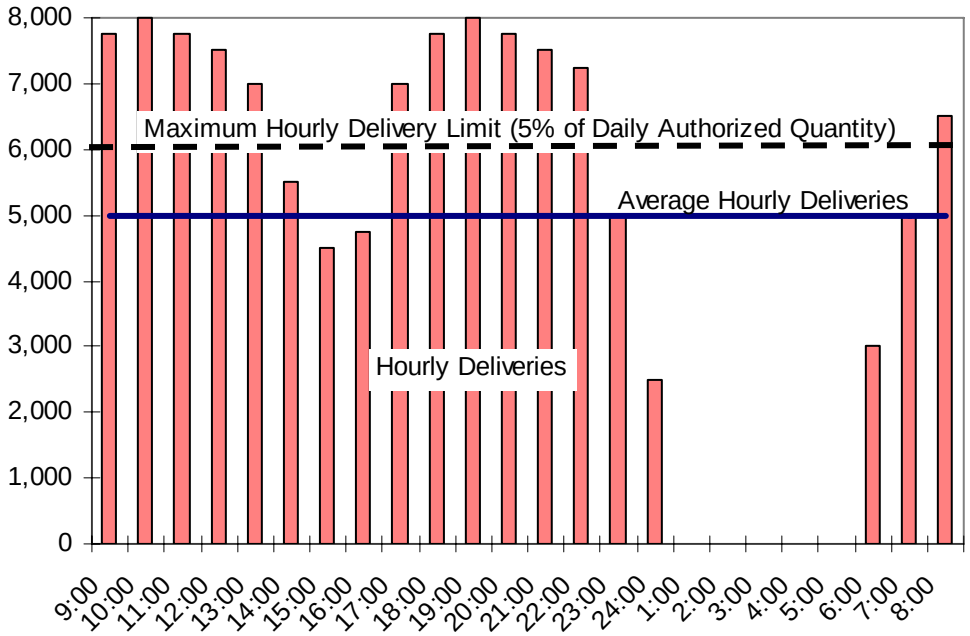
To address this issue, TransCanada is proposing that FT-SN service nominations not be a daily quantity, but rather be the expected flow rate.

Attribute 4: Hourly flow limit based on daily contract quantity

All shippers on the Mainline are currently limited to a maximum of 5% of their daily authorized quantity in any hour during the Gas Day. This limit allows shippers to move up to 120 % of their average hourly flow in any given hour. However, TransCanada understands that some new gas-fired generating facilities may want to operate in a manner that exceeds the 5% hourly flow limit. Figure 2.1 illustrates these circumstances. In this example, the FT shipper holds a contract of 120,000 GJ/d and nominates its full 120,000 GJ/d entitlement, or an average of 5,000 GJ/hour. However, the actual hourly operating pattern may be

as shown in Figure 2.1, with several hours of high takes during the day, followed by several hours of zero gas consumption at night. This operating pattern exceeds the 5 % hourly limit (5 % of daily authorized quantity = 5 % of 120,000 GJ/d = 6,000 GJ/hour) during several hours. Contracting for additional FT service would not change this situation, since the 5 % limit is based on daily authorized quantity and is not based on daily contracted quantity.

FIGURE 2.1: EXAMPLE OF HOURLY FLOW IN VIOLATION OF FT SERVICE MAXIMUM HOURLY FLOW ENTITLEMENT (GJ/HOUR)
Daily Authorized Quantity = 120,000 GJ



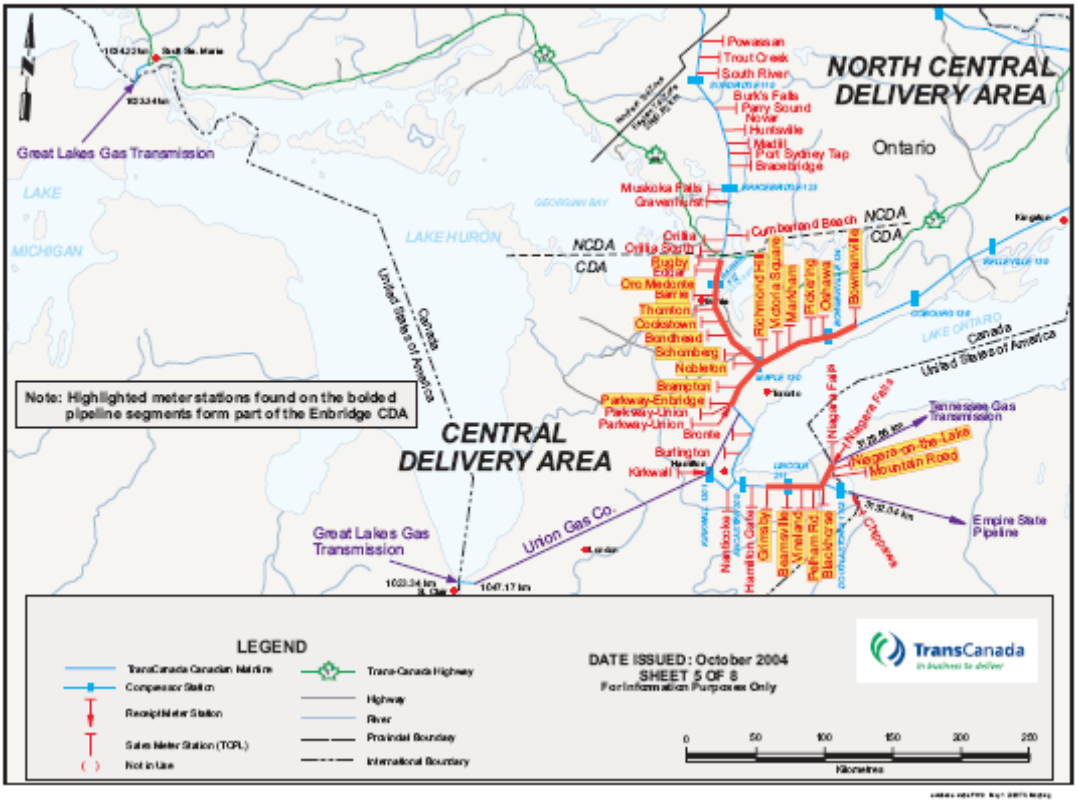
To address this issue, TransCanada is proposing that FT-SN service be limited to 5% of Daily Contract Demand, instead of 5% of Daily Authorized Quantity. This means that a shipper can obtain additional hourly flow rights by contracting for additional service.

Attribute 5: Separate Distributor Delivery Area

TransCanada understands that some of the new power generation facilities may be located in the Mainline's Enbridge Central Delivery Area (Enbridge CDA). As shown in Figure 2.2, the Enbridge CDA spans four very distinct parts of the Mainline: the Montreal Line from the Maple compressor station to Bowmanville, the Barrie line from the Rugby meter station south to the Maple compressor station, the Parkway to Maple Segment and the Niagara Region.

Under the current Delivery Area mechanism, shippers nominate to the Enbridge CDA as a whole, rather than to a specific meter station within the Enbridge CDA. This approach does not provide TransCanada with any information as to the exact location where a change in consumption may occur. This lack of information becomes critical in terms of responding to large flow changes at power generation facilities on short notice when such plants are in close proximity to significant residential and commercial heating loads.

Figure 2.2
Map of the Enbridge CDA



To address this issue, TransCanada is proposing that customers of FT-SN service would contract to a specific location that is distinct from any other meter and distinct from any existing Delivery Area. This requirement will ensure that TransCanada knows the exact location of a nominated FT-SN flow change and can adjust its system operations accordingly to meet the change in flows.

This approach is not a new one. The Nipigon Power, Calstock Power and Tunis Power facilities in Northern Ontario have all been established as separate Delivery Areas, with single meter stations within each Delivery Area.

Attribute 6: Flow Control

In order to protect the Mainline system from unauthorized takes in excess of a nominated flow rate, TransCanada will require that FT-SN service delivery locations have flow control valves that can be remotely operated by TransCanada's Gas Control. The large flow rates expected with these facilities, given their proximity to large residential/commercial heating markets, makes control of excess takes essential, particularly in the winter when heating requirements are peaking.

To determine the appropriate flow limits for the flow control valves, TransCanada cannot deliver FT-SN service to a meter station or Delivery Area with other types of Mainline services. This is due to the difference in nominations between FT-SN service and other services. FT-SN service nominations will be flow-rate nominations for the subsequent 15 minute period whereas nominations for other Mainline services are daily nominations which provide no information regarding flows over the subsequent 15 minute period. Mixing these different nomination types will make it impossible for TransCanada to determine the appropriate flow control limit to serve all of the services. For this reason, TransCanada will be unable to deliver other Mainline services at the same location used for FT-SN service.

Q10. What is the SNB service?

A10. SNB service is a proposed, cost-based, firm service that will facilitate the effective operation of FT-SN service by providing flexibility for balancing purposes. TransCanada will utilize Mainline compression and linepack to provide the flexibility as part of its response to the market need for variable consumption on short notice. The availability of SNB service will enhance the flexibility provided to FT-SN shippers by providing access to an alternative source of supply or market and by enabling effective nominations at up to fifteen minute intervals even if upstream pipeline systems have less frequent nomination windows.

The attributes of SNB service are summarized in Table 3.1.

Table 2.1 - SNB Service Attributes

Attribute	Availability
Availability of service	Must be linked to an FT-SN contract
Contract Quantity	Equals total size of SNB account Maximum equal to FT-SN contract demand
Intra-Day Reservation of Capacity by TransCanada	Yes
Renewal Rights	Yes
Term	Minimum one year
Toll	Individually assessed cost-based demand charge paid on total Contract Quantity
FT-Risk Alleviation Mechanism*	Not available
Assignments	Only with associated FT-SN contract
Nomination requirements	GJ/hour (same as FT-SN)
Maximum Hourly Entitlement	FT-SN hourly entitlement
Nomination windows	Up to 96 per day (same as FT-SN)

*FT-RAM expires on October 31, 2007.

Q11. How will SNB service work?

A11. SNB service is a balancing service that TransCanada will provide by using Mainline compression and linepack. An SNB account will be used to implement the service. The shipper will nominate for supply out of the SNB account or nominate gas into the SNB account as part of its FT-SN nomination, to ensure nominated receipts equal nominated deliveries. A nomination from the account reduces the account balance and has the physical effect of drafting the Mainline system linepack. A nomination into the account increases the balance and physically packs the system. A complete description of the attributes and operation of SNB service are included in Attachment IB.[2]

[2] Refer to Section 3.0 of TransCanada's Written Evidence section of TransCanada's Application to the NEB for approval of FT-SN and SNB services.

2.3 SUMMARY OF TRANSCANADA'S EVIDENCE ON ISSUE I

Q12. Please summarize TransCanada's evidence on Issue I.

A12. New gas-fired generation facilities will likely be constructed in or near the GTA in the near future. TransCanada understands that the operating characteristics and gas transportation requirements of these facilities may be significantly different from those of existing markets. These facilities are likely to run year-round and will not be equipped to burn alternative fuels when natural gas is unavailable.

TransCanada is proposing two new services: FT-SN and SNB. FT-SN will be responsive to the requirements of gas-fired electricity generators operating in the developing power market. SNB will make FT-SN more functional by providing access to an alternative source of supply, and by allowing nominations under an FT-SN contract even if a connecting service provider does not offer a nomination window at that time. Together these new services will help the Mainline serve the growing market for natural gas for electricity generation, thereby attracting new firm shippers and reducing tolls.

Q13. Does this conclude TransCanada's written evidence on Issue I?

A13. Yes.