APPrO UNDERTAKING NO. 1:

To provide answers to Board hearing team questions 9B and onward.

Response:

Please see attached.

Question 9 *Reference: Proposal 5, pp. 38-39*

B. Please clarify APPrO's position with regard to park and loans for ex-franchise customers. Please contrast this proposal with Union's DPBS proposal.

APPrO recommends that storage services—and storage-related services such as park and loan services—that are provided to both in-franchise and ex-franchise customers be enhanced to give the customer the flexibility to schedule injections and withdrawals (or parks and loans) at non-uniform hourly rates over the course of the day. For example, a power generator that plans to operate only during the sixteen peak electric hours should be able to schedule storage withdrawals for only the hours the plant is expected to operate, instead of being limited to scheduling withdrawals as a daily quantity flowing at a uniform hourly rate, or trying to adjust storage and transportation quantities using limited intra-day nomination windows. The same would apply to park and loan services. For example, a power generator could arrange to park gas with the utility over a weekend and schedule to have the gas returned during the few hours at the end of the Sunday gas day (i.e. 7 AM to 10 AM Monday, Eastern Time) for the Monday morning start-up of the plant.

APPrO's proposal is different from Union's DPBS proposal in several respects:

- The DPBS is not intended to be a service that is scheduled ahead of time, but is a service that would fill a very short term, and presumably unplanned, need to adjust the customer's supply of gas up or down.

- Union is offering to deliver or accept gas at any time of the day with fifteen minutes notice. The APPrO proposal would allow the customer to plan ahead, and would be compatible with any nomination schedule.

- Union is offering DPBS only at Parkway. APPrO expects that park and loan services with non-uniform hourly quantities would be available at all locations where the utility offers park and loan service.

Question 10 *Reference: Proposal 6, pp. 40-42*

A. APPrO states that "customers should have access to alternate receipt and delivery points through the nomination process" and APPrO describes prior approval issues.

Is APPrO proposing that access to alternative receipt points be considered for all 24 proposed nomination windows? What is meant by "prompt" prior approval by utilities? (e.g., within 2 hours after the nomination has been made?)

Yes, customers should be able to request a change in receipt and delivery points at any time. APPrO expects that the utility would be able to effect the change within the period provided for in the nomination schedule (e.g. two hours under the APPrO proposal), subject to the need to confirm the change with upstream or downstream transporters or storage operators. The word "prompt" is meant to convey the idea that the utility should

use reasonable efforts to approve and implement the change sooner if the customer requests, and the change can be confirmed by other parties.

B. How does APPrO propose to deal with the allocation of the incremental costs associated with this proposal?

APPrO is not convinced that there would be any costs in implementing this proposal. Indeed, by automating these requests through the utility's nominating system instead of treating all of these requests as a manual process, the utility may be able to reduce costs in the long run. To the extent that there are incremental costs, APPrO's position on the allocation of costs under all of its proposals is that the costs of system enhancements that benefit all customers should be shared, and incremental costs that benefit only a single customer or customer class should be allocated to that customer or customer class.

Question 11 Reference: Proposal 7, pp. 43-44

A. With the exception of the number of nomination windows, how is this proposal different from Union's F24-T and F24-S service proposals?

The biggest difference from Union's F24-T and F24-S proposals is that APPrO would not limit this option to just transportation service from Dawn to Parkway, but would also allow shippers to protect their firm capacity rights for intra-day nominations on other transportation segments under Union's C1 transportation service. Without this "firm all day" option it is simply not feasible for customers to use storage or balancing services on interconnecting pipelines such as Panhandle, MichCon, or Bluewater to manage their gas supply positions at Dawn on terms that are comparable with the services provided by Union Gas.

Union's proposal is intended to be used by ex-franchise customers, is limited in quantity, and will not be available until late 2007. APPrO proposes that this feature would be made available on all transportation segments and on all firm storage services, that it would be available to both in-franchise and ex-franchise customers, and that it would be implemented as soon as possible.

Note that if Enbridge offers firm unbundled storage service at Dawn, the APPrO proposal would apply to that service as well.

B. What is meant by "standard" service?

This refers to services with the existing scheduling priorities (i.e. "no-bump" service).

C. *Is it APPrO's understanding that if the transportation and storage capacity is firm, then it would displace capacity from interruptible to firm service customers?*

If firm transportation and storage customers choose to protect their intra-day scheduling rights by electing "firm all day" service, there may be some reduction in the transportation capacity and storage injection and withdrawal capability available for interruptible services if it is assumed that there is no change in the utility's facilities. However, we expect that this service option will be used primarily by new customers who will be served through the expansion of existing transmission and storage facilities. If the capacity reserved under a "firm all day" option is all new capacity, there will be no effect on the existing capacity available for existing interruptible customers. In the case of Union Gas, it is also important to note that the alternative for an in-franchise customer choosing unbundled service with a firm all day option is T1 service. Because the T1 service is a no-notice service, the transportation capacity and storage deliverability needed to serve these customers is reserved, just as it would be with the proposed "firm all day" option. Offering these customers the ability to contract for a firm unbundled service that is comparable to T1 service would have the effect on interruptible customers as having these same customers contract for T1 service.

How would that affect the charges paid by other firm customers?

APPrO is proposing that the charge for this option would be sufficient to compensate firm customers for any credits they would otherwise have received from the sale of interruptible services, using both existing and any incremental transportation capacity.

D. *Did the NAESB Gas-Electricity Interdependency Committee identify the barriers that prevented the Committee from developing a specific proposal? What were they? How can they be eliminated? What were the potential feasible solutions?*

The NAESB committee cited uncertainty concerning the effect of any change in nomination standards on existing gas nomination cycles and the need for additional coordination between the gas and electric industries as impediments to advancing a specific proposal at this time. The committee also stated that for certain of the issues it considered, including the issues of additional nomination windows and changes in no-bump standards, industry participants may prefer to develop regional solutions rather than work through the NAESB process. This is what is taking place in Ontario.

Question 12 Reference: Proposal 8, pp. 45-46

APPrO states that the Obligated DCQ should be eliminated immediately for new customers and phased out for existing customers.

A. Does APPrO's proposal require any change in light of the supplemental evidence filed by Union on this topic May 1, 2006?

No. Union's supplemental evidence only underscores the importance of addressing this issue in this proceeding.

B. Would an obligated DCQ at a location other than Dawn alleviate some of APPrO's issues? Please explain.

APPrO's principal concern is the obligation to purchase natural gas for delivery to Union during periods when gas is not being consumed for generation. Changing the location at which gas must be delivered does not address this problem.

C. Would contracting for an unbundled service address this issue? Please explain.

Contracting for the corresponding unbundled service would not necessarily address this issue because of the 22-day Parkway call-back provision in the U7 contract.

D. If there are costs associated with APPrO's proposal, who should pay for that?

The transition to a non-obligated DCQ should be done in such a way that the costs are minimized. To the extent that there are costs, however, it is APPrO's position that if certain customers elect to change their service obligations, this change should not impose additional costs on existing customers who do not elect to reduce or eliminate their obligated DCQ.

E. Do other jurisdictions have similar daily obligations for bundled service customers? Please explain.

APPrO is not aware of services in other jurisdictions where a transportation or distribution customer supplying its own gas is required to deliver gas to the transporter when gas is not being delivered to the customer by the transporter.

Question 13 *Reference: Proposal 9(a), p. 47*

A. *"Union Gas already allows contracts to be combined if the ownership is the same. This should be extended to non-affiliated shippers with common fuel management."*

If this was allowed, what is APPrO's view on who would be financially responsible for the credit exposure, and how would this be managed?

APPrO's position is that the shippers must have adequate financial assurances in place with the utility so that combining contracts for purposes of scheduling and imbalance management will not increase the credit risk faced by the utility.

Question 14 *Reference: Proposal 9(b), p. 47*

A. *"Imbalance trading allows shippers to net out imbalances between themselves."*

Does this already exist (e.g. title transfers)? Please explain. Who would be financially responsible for the credit exposure and how would this be managed?

Title transfers can be helpful to prevent imbalances from occurring if the imbalance exposure is identified before it occurs. If imbalances occur as a result of unexpected events, imbalance trading allows shippers with imbalances in opposite directions to net out their imbalances after the fact. There are no credit implications because the imbalance trade does not increase either shipper's payment obligation to the utility.

Question 15 *Reference: Proposal 9(c), p. 47*

"Union and Enbridge should allow transfers at common points such as Dawn and Parkway."

Please explain how this would work.

The APPrO is proposing that the inter-utility title transfers proposed by Enbridge be expanded to include locations other than Dawn. APPrO agrees with Enbridge that there are implementation issues that still need to be worked out.

Question 16 *Reference: Proposal 9(d), p. 47*

A. Are the title transfers in gas storage in other jurisdictions treated as administrative matters instead of a physical withdrawal or injection of gas? What fees do these jurisdictions charge for this service?

Title transfers to gas in storage are administrative transactions that avoid the need to inject or withdraw gas, either physically or on paper. APPrO has not investigated the fees that may be charged for these transactions in other jurisdictions.

B. Are there limitations for title transfers between storage customers? (e.g. "like for like")

APPrO has not undertaken an exhaustive survey of the practices of other jurisdictions, but did include tariff language used by Washington 10 Storage at page 47 of its pre-filed evidence. The standard APPrO endorses, and that Washington 10 appears to be using, is that title transfers should be allowed as long as the transaction does not have a negative effect on the storage operator's ability to provide service to other customers.

C. Is APPrO proposing a methodology for dealing with transfers that are not "like for like"?

Yes. The problem with a "like for like" requirement is that as more customers begin to contract for unbundled services, and storage operators are responsive to customers' needs and allow customers to select from a services with varying deliverability and ratcheting provisions, there will be fewer opportunities for customers to transact with other parties with identical contract parameters. APPrO supports the use of a more flexible standard under which title transfers are allowed unless there would be a negative effect on the provision of service to other customers.

Question 17 *Reference: Proposal 10*

In the case of over-subscribed transmission capacity, does APPrO believe that Union should be allowed to charge rate premiums over the duration of the long-term contract, or only for the short-term period until such capacity becomes available?

APPrO does not have a position on this issue, other than the statement that is included in its pre-filed evidence.

Question 18 *Reference: Proposal 11*

APPrO states that "the OEB should establish a process to review how well the services are meeting the need of gas-fired generators in 2008."

Given the short experience that generators would have with the services in 2008, please explain why APPrO is of the view that a review should take place at that time.

APPrO believes strongly that there must be an early opportunity to assess whether the utilities have implemented services that actually meet generators' requirements. Given the substantial amount of new gas-fired generation that is expected to be in operation by mid-2008, the potential costs of delaying remedial action if the required services are not available by that time are extremely high.

Question 19 *Reference: Section 4.2*

A. In Franchise Service – Is APPrO opposed to Union's proposed rate design and associated pricing for T1 customers? Please explain.

APPrO does not oppose Union's T1 rate redesign proposal, which is consistent with APPrO's proposal that the rates charged to large end users connected to transmission-level facilities should not include the costs of distribution mains. However, just tilting the T1 rate does not solve the problem. APPrO believes that its own proposals, which would allow customers connected to transmission pipelines to be served from transmission-level transportation services and allow utilities to negotiate rates and terms of service for firm transportation services are a better meet the needs of gas-fired generators and would be a better response to the issues raised by the Board in the GEC decision.

Question 20 *Reference: Section 4.4*

A. At what level would APPrO set the minimum DCQ for access to Rate 125? How would this be determined? Please explain.

APPrO recommends that the minimum DCQ for Rate 125 be set at 300,000 m3 per day. This level is consistent with a power generation facility that is large enough to warrant the type of active gas supply management that is contemplated under this rate schedule.

B. What criteria does APPrO recommend for establishing the MCI?

APPrO's concern is that Enbridge must establish clear guidelines that will govern the setting of the MCI to ensure that the imbalance provisions of Rate 125 are implemented in an objective, transparent, and non-discriminatory manner.

C. What would APPrO recommend as conditions of the OFO? Please explain.

APPrO recommends that utilities be required to provide customers with detailed information concerning the need for the OFO and the actions that the utility has taken, or will take, to minimize the impact of the OFO, both in terms of the duration of the OFO and the number of customers affected.

D. What cash out penalties does APPrO recommend to replace those suggested by Enbridge? How would these prevent gaming the system at the expense of Enbridge or other shippers/customers?

APPrO has not recommended specific penalty levels, but believes that Enbridge should be required to justify the reasonableness of the penalties it has proposed. APPrO's position is that penalties should be high enough to eliminate incentives to game the system at the expense of other customers, but should not be set at levels that are unnecessarily punitive.

Question 21 Reference: Exhibit A, p. 64

A. Does APPrO consider the Texas Eastern service best efforts?

APPrO's interpretation of the Texas Eastern tariff is that the pipeline's obligation to accept a change in scheduled quantities and receipt or delivery point(s) outside the minimum NAESB standard windows is firm. Implementation is contingent on confirmation with other parties, and the pipeline is not required to "bump" previously scheduled service. Since both of these conditions would also apply to a nomination submitted in one of the NAESB intra-day windows, the pipeline's obligation to schedule intra-day nomination changes outside these windows is equally firm.

B. Does APPrO consider the Panhandle waiver regarding notice requirements an assurance that the revised nomination will be accepted on a firm basis or is this only an obligation on the shipper to notify Panhandle on a timely basis of unexpected changes?

The Panhandle provision does not create a firm obligation to schedule a nomination change outside the NAESB windows, but is an example of contract language that provides for flexibility that exceeds the minimum NAESB standard.

C. Does APPrO consider the Vector section 2.7(b) a firm commitment to accept intraday hourly nominations? On what basis has APPrO concluded that?

Under the Vector MBA service, the pipeline will change scheduled quantities upon one hour notice at any time during the gas day. Because the MBA service is not itself a

transportation service, but is an imbalance management service that can be used with either firm or interruptible transportation contracts, the pipeline's obligation to schedule the change depends on the priority of the underlying contract. This interpretation is based on discussions with Vector Pipeline personnel.

Question 22 *Reference: APPrO's proposals*

A. What priority does APPrO place on their proposed services? Which ones are considered "must have" and which ones would be "nice to have"? How should the new services be sequenced? Which ones are dependent on other services first being introduced?

It is difficult for APPrO to prioritize its proposals, since it considers all of these measures to be important. The proposals are independent in the sense that there is no proposal that is contingent on another proposal being implemented first. However, the benefits of certain proposals, such as flexibility in scheduling alternate points, are enhanced by the implementation of other proposals, such as additional nomination windows.

Question 23

A. Could APPrO undertake a case that shows the 10 nomination windows proposed by Union?

In order to have ten nomination windows under Union's proposal, the customer would need to be an ex-franchise shipper delivering gas to Parkway using M12 transportation service and Union's proposed F24-T transportation service. We will assume that the customer is delivering gas to Union at Dawn, and transporting gas from Parkway to a point in the Enbridge CDA using TransCanada's proposed FT-SN service.

Case 4

Under the timing assumptions described in Exhibit B of APPrO's evidence, the customer would be able to use the additional F24-T windows to submit a nomination change by the 6:00 AM deadline. This change would become effective at 8:00 AM, allowing the customer to reduce its upstream deliveries into Union Gas and its deliveries at Parkway from the original scheduled quantity of 64,000 GJ to 58,667 GJ (see table below). With the plant consuming 52,000 GJ, this leaves an imbalance of 6,667 GJ, which would show up downstream of the Union system.

B. Could APPrO undertake to include a case that shows the 10 nomination windows, UPBS and DPBS proposed by Union?

Case 5

In addition to the assumptions described above, it is now assumed that the customer uses the proposed UPBS to schedule hourly deliveries at Parkway to match the expected consumption of the plant. With only the ten windows and without the ability to schedule non-uniform hourly receipts from the upstream transporter, the customer would again end up with deliveries of 58,667 GJ to Union at Dawn, leaving the same imbalance of 6,667 GJ as Case 4. However, based on APPrO's understanding of the Union and TransCanada service proposals, the customer could use the additional nomination windows on TransCanada, and Union's proposed DPBS, to keep the imbalance on the Union system. In this case the customer could inject 4,000 GJ into the DPBS at Parkway (assuming the balancing capacity was not already being used), leaving a positive imbalance of 2,667 GJ at Dawn.

CASE 4: OEB STAFF QUESTION 23(A)

F24-T Windows	Hour Ending	Day	Expected Consumption	Gas Supply Scheduled	Actual Consumption	Imbalance
Timely Nomination	13:00	Tues				
	14:00	Tues				
	15:00	Tues				
	16:00	Tues				
	17:00	Tues				
	18:00	Tues				
Evening Nomination	19:00	Tues				
	20:00	Tues				
	21:00	Tues				
	22:00	Tues				
	23:00	Tues				
	24:00	Tues				
	1:00	Wed				
	2:00	Wed				
	3:00	Wed				
	4:00	Wed				
	5:00	Wed				
	6:00	Wed				
	7:00	Wed				
	8:00	Wed				
	9:00	Wed				

10:00 Nomination	10:00	Wed				
Intra-day 1	11:00	Wed	4,000	2,667	4,000	
	12:00	Wed	4,000	2,667	4,000	
	13:00	Wed	4,000	2,667	4,000	
14:00 Nomination	14:00	Wed	4,000	2,667	4,000	
	15:00	Wed	4,000	2,667	4,000	
16:00 Nomination	16:00	Wed	4,000	2,667	4,000	
	17:00	Wed	4,000	2,667	4,000	
Intra-day 2	18:00	Wed	4,000	2,667	4,000	
	19:00	Wed	4,000	2,667	4,000	
	20:00	Wed	4,000	2,667	4,000	
	21:00	Wed	4,000	2,667	4,000	
	22:00	Wed	4,000	2,667	4,000	
23:00 Nomination	23:00	Wed	4,000	2,667	4,000	
	24:00	Wed	0	2,667	0	
	1:00	Thurs	0	2,667	0	
	2:00	Thurs	0	2,667	0	
	3:00	Thurs	0	2,667	0	
04:00 Nomination	4:00	Thurs	0	2,667	0	
	5:00	Thurs	0	2,667	0	
06:00 Nomination	6:00	Thurs	0	2,667	0	
	7:00	Thurs	0	2,667	0	
	8:00	Thurs	4,000	2,667	0	
	9:00	Thurs	4,000	0	0	
	10:00	Thurs	4,000	0	0	
Gas Day Totals (GJ)			**64,000**	**58,667**	**52,000**	**6,667**

CASE 5: OEB STAFF QUESTION 23(B)

F24-T Windows	Hour Ending	Day	Scheduled at Dawn	Scheduled at Parkway	DPBS Injection	Imbalance at Dawn
Timely Nomination	13:00	Tues				
	14:00	Tues				
	15:00	Tues				
	16:00	Tues				
	17:00	Tues				
	18:00	Tues				
Evening Nomination	19:00	Tues				
	20:00	Tues				
	21:00	Tues				
	22:00	Tues				
	23:00	Tues				
	24:00	Tues				
	1:00	Wed				
	2:00	Wed				
	3:00	Wed				
	4:00	Wed				
	5:00	Wed				
	6:00	Wed				
	7:00	Wed				
	8:00	Wed				
	9:00	Wed				
10:00 Nomination	10:00	Wed				
Intra-day 1	11:00	Wed	2,667	4,000		

	12:00	Wed	2,667	4,000		
	13:00	Wed	2,667	4,000		
14:00 Nomination	14:00	Wed	2,667	4,000		
	15:00	Wed	2,667	4,000		
16:00 Nomination	16:00	Wed	2,667	4,000		
	17:00	Wed	2,667	4,000		
Intra-day 2	18:00	Wed	2,667	4,000		
	19:00	Wed	2,667	4,000		
	20:00	Wed	2,667	4,000		
	21:00	Wed	2,667	4,000		
	22:00	Wed	2,667			
23:00 Nomination	23:00	Wed	2,667			
	24:00	Wed	2,667			
	1:00	Thurs	2,667			
	2:00	Thurs	2,667			
	3:00	Thurs	2,667			
04:00 Nomination	4:00	Thurs	2,667			
	5:00	Thurs	2,667			
06:00 Nomination	6:00	Thurs	2,667			
	7:00	Thurs	2,667			
	8:00	Thurs	2,667	4,000		
	9:00	Thurs	0	0		
	10:00	Thurs	0	0		
Gas Day Totals (GJ)			**58,667**	**56,000**	**4,000**	**2,667**

APPrO UNDERTAKING NO. 2:

To run example using Union's T1 rate, using parallel parameters, assuming the generator had 25,000 GJs of firm injection and withdrawal capacity and sufficient space in storage if they have a supply overrun, and sufficient gas in storage if they have a supply underrun.

Response:

The example on pages 20 and 21 of the APPrO evidence indicates:

> *Take a hypothetical 500 MW gas-fired generator situated in Enbridge's CDA that has a contract demand of 100,000GJ/d (4,167GJ/hr). Assume that as a result of the IESO's pre-dispatch schedule issued at 12:00 noon on the pre-dispatch day (Monday), the generator forecasts that it will consume gas for 18 hours, or 75,000 GJ, over the course of the day (10:00 a.m. Tuesday to 10:00 a.m. Wednesday) and proceeds to nominate, at the timely nomination window (Monday, 1p.m.)75,000 GJ over the gas day. Under this nomination, the rateable flow will effectively be 3,125GJ/hr (75,000 GJ/24) from 10:00 a.m. on Tuesday to 10:00 a.m. on Wednesday. Consider two scenarios:*
>
> ***a) Supply Underrun:*** *by 10:45 a.m. on Tuesday, the IESO has not dispatched the facility. The gas fired generator believes that it will not be dispatched for the remainder of the day.*
> ***b) Supply Overrun:*** *At 10:00 am on Tuesday, the IESO, responding to increased demands on the power system, issues revised dispatch instructions to the facility that will require it to increase its hourly consumption of gas over the day to 4,167 GJ/hr from 10:00 a.m. Tuesday to 10:00 a.m. Wednesday.*

Union's additional assumptions:

- Union T1 infranchise customer
- 25,000 GJ/d (1,042 GJ/h) firm injection/withdrawal capacity
- Sufficient space for a supply underrun
- Sufficient gas for a supply underrun

Note these calculations are based on APPrO's understanding of Union's tariff provisions.

This question does not have sufficient information to respond to the question without making further assumptions. These assumptions relate to:

- Determining if the customer is situated east or west of Dawn
- Determining if this is pursuant to the:
  - original T1 rate,
  - T1 rate as proposed by Union in Appendix I pages 1-5, or

  - One of the 4 supplemental T1 rate options proposed in Union's Supplemental evidence Exhibit B Tab 3 pages 1-8
- The details around the storage balancing options that are available to the T1 customer if under the supplemental T1 options

It will therefore be assumed that:

- The customer is east of Dawn
- It will be assumed that this relates to one of the 4 supplemental options as proposed by Union
- Union has not filed as yet any storage balancing information; therefore it will be assumed that the provisions are the same as those found in the Proposed T1 rate (Appendix I).
  (It is noted that Union is re-visiting its storage balancing arrangements and these arrangements have yet to be filed. If the volume of firm injection and withdrawal assumed in this example were derived from the proposed T1 tariff (ie firm deliverability equal to 1.2%), this would represent a space component for storage of 25,000 GJ/d / 1.2% = 2.08 bcf)

A) Supplemental T1 Option 1

Service summary

- Daily obligated supply at Parkway equal to 100% of the CD.
- The description of the service does not mention if it includes a no notice component, therefore it is assumed that this no notice feature is not part of this option.

a) Supply Underrun

- It will be assumed that the customer purchases gas under NAESB windows (as noted in the example) and has F24-S, and F24-T service from Union to transport the gas to Parkway
- At 10:45 assume the customer believes that it will not run and nominates under its F24-T contract at the 1400 hours nomination window to reduce its nomination from 3,125 GJ/h to 0 GJ/h effective 1600 hours, and under its F24-S contract increases its nomination from 0 GJ/h to 1,042 GJ/h.
- The customer would have firm injection rights of 1,042 GJ/h

Authorized injection volume 6h X 1042 GJ/h	= 6,252 GJ
103% of authorized volume	= 6,440 GJ
Deliveries of gas to Dawn 6h X 3,125 GJ/h	= 18,750 GJ
Unauthorized storage injection imbalance	= 12,310 GJ

Unauthorized overrun penalty	= $1.745/GJ
Overrun Penalty	= $21,481

- Since the customer purchased gas at Dawn, it will have obligations to continue to receive gas from the supplier under the NAESB windows. If it was allowed to adjust its nomination at the intra-day 1 window (the first NAESB window after 1045 hours), effective at 1800 hours, there will be additional overrun penalties incurred for continuing to deliver the gas to Union. This additional penalty would be:

Authorized injection volume - 2 hours X 1,042 GJ/h	= 2,084 GJ
103% of authorized volume	= 2,146 GJ
Deliveries of gas to Union 2 hours X 3,125 GJ	= 6,250 GJ
Unauthorized volume	= 4,104 GJ
Unauthorized overrun penalty	= $1.745/GJ
Further Overrun Penalty	= $7,161

- Total Penalty = $28,644

Note: this assumes that customer is able to reduce its purchases from its supplier, divert the gas or inject the remaining gas into storage effective 1800 hours (based on intra-day 1 window), if this does not occur then additional penalties would be occurred.

b) Supply Overrun

- At 10 am the generator in response to the demands on the system has to increase its hourly consumption to 4,167 GJ/h from 3,125 GJ/h
- Additional gas from storage 4,167 – 3,125 GJ/h = 1,042 GJ/h
- The generator would nominate the additional gas from storage at the 1000 hours nomination window, which is effective at 1200 hours
- During the period from 1000 hours to 1200 hours, the 1,042 GJ/h would be unauthorized overrun (since no gas was nominated for withdrawal from storage during this period, the authorized volume of 103% of 0 is 0 GJ)
- Unauthorized overrun (1000-1200 hrs) 2h X 1,042 = 2,084 GJ
- Unauthorized penalty = $1.745/GJ
- Unauthorized overrun penalty = $3,636

Note for the balance of the day the 1,042 GJ/h required from storage is within the 103% of the authorized firm withdrawal volume and therefore no further penalty will be incurred

B) Supplemental T1 Option 2

Service Summary

- Customer purchases M12 capacity equal to 100% of its CD
- Customer assigns the M12 capacity to Union
- Customer may purchase gas at Dawn on a non obligated basis
- Customer receives no notice service

a) Supply Underrun

• Purchases (1000 hours to 1800 hours) 8 X 3,125 GJ/h=	25,000 GJ
• Actual consumption	0 GJ
• Overrun injections	25,000 GJ
• 103% of authorized injection	25,750 GJ
• Unauthorized overrun injection	0 GJ
• Unauthorized storage overrun penalty	$1.745/GJ
• Total Penalty	$0

Note: this assumes that customer is able to reduce its purchases from its supplier, divert the gas or inject the remaining gas into storage effective 1800 hours (based on intra-day 1 window), if this does not occur then additional penalties would be occurred.

b) Supply Overrun

• Throughout the day customer purchases		75,000 GJ
• Actual consumption	24 h X 4,167 GJ/h	100,000 GJ
• Overrun storage withdrawal		25,000 GJ
• Authorized withdrawal entitlement		25,000 GJ
• 103% of authorized withdrawal		25,750 GJ
• Unauthorized overrun withdrawal		0 GJ
• Unauthorized storage overrun penalty		$1.745/GJ
• Total Penalty		$0

C) Supplemental T1 Option 3

Service Summary

- Customers deliver DCQ at Parkway on the days/hours that their plant is consuming
- This option requires the customer to match the hourly (or in increments of 15 minutes) deliveries at Parkway to the same hourly or 15 minute increment consumption at the plant.

Since this example assumes purchasing gas at Dawn there are insufficient nomination windows to balance every 15 minutes or every hour as required by Union, therefore APPrO does not see this service as being feasible at this time as the risk of being in a significant unauthorized overrun/underrun penalty and curtailment situation is too high. The only option a customer would have to supply gas to Union at Parkway to meet the terms of this example would be:

- Purchase Union's M12 service with its "bolt on" F24-T service and nominate pursuant to the windows listed in its evidence (Tab 4 page 10 of 44). The largest gap in these nomination windows is between the 1600 hours nomination window (effective 1800 hours) and the 2300 hours nomination window (effective 0200 hours), resulting in a potential gap of up to 10 hours to effect nomination changes. A generator could also purchase Union's DPBS for a 2 hour Park & Loan at Parkway reducing this gap to 8 hours.

These responses are based on the customer purchasing gas at Dawn and using F24-T and DPBS as noted above.

a) Supply Underrun

- At 10:45 assume the customer believes that it will not run and nominates under its F24-T contract at the 1400 hours nomination window to reduce its nomination from 3,125 GJ/h to 0 GJ/h effective 1600 hours.
- Deliveries from 1000 hours to 1600 hours

3,125 GJ/h X 6 h	= 18,750 GJ
Less: 2 hour DPBS 4,167 GJ X 2 h	= 8,334 GJ*
Net Imbalance	= 10,416 GJ
103% of customers contract rights	805 GJ**
Unauthorized Overrun Volume	9,611 GJ
Unauthorized Overrun Penalty	= $1.745/GJ
Penalty	= $16,771

* assumes that 2 hours remaining in DPBS

** it is assumed for purposes of this example that since the customer has to balance every 15 minutes, that the imbalance tolerance is 103% of the authorized volume in the 15 minute period

3,125 GJ/h *15 min/60min *103% = 805 GJ

- Since the customer purchased gas at Dawn, it will have obligations to continue to receive gas from the supplier under the NAESB windows. If it was allowed to adjust its nomination at the intra-day 1 window (the first NAESB window after 1045 hours), effective at 1800 hours, there will be additional overrun penalties incurred for continuing to deliver the gas to Union. This additional penalty would be:

Authorized injection volume - 2 hours X 1,041 GJ/h	= 2,082 GJ
103% of authorized volume	= 2,145 GJ
Deliveries of gas to Union 2 hours X 3,125 GJ	= 6,250 GJ
Unauthorized volume	= 4,105 GJ
Unauthorized penalty	= $1.745/GJ
Further Overrun Penalty	= $7,163

- **Total Penalty** **= $23,934**

Note: this assumes that customer is able to reduce its purchases from its supplier, divert the gas or inject the remaining gas into storage effective 1800 hours (based on intra-day 1 window), if this does not occur then additional penalties would be occurred.

b) Supply Overrun

- At 10 am the generator in response to the demands on the system has to increase its hourly consumption to 4,167 GJ/h from 3,125 GJ/h
- Assume that the generator increases its nomination from 3,125 GJ/h to 4,167 GJ/h at the 1400 hour nomination window effective 1600 hours and withdraws gas from storage. During this 6 hour period, the customer consumes gas from the DPBS

2 hour DPBS volume 2h X 4,167 GJ/h	= 8,334 GJ*
6 hours X (4,167 GJ/h – 3,125 GJ/h)	= 6,252 GJ
Remaining volume in DPBS	2,082 GJ

- No penalty would apply in this situation.

* assumes that 2 full hours of park & loan volume remaining in DPBS

D) Supplemental T1 Option 4

Service Summary

- This option is any combination of options 1-3

APPrO UNDERTAKING NO. 3:

To provide commentary on services provided by TCPL.

Response:

TransCanada has proposed two new services: Firm Transportation-Short Notice (FT-SN) and Short Notice Balancing (SNB)

FT-SN includes several features that should benefit power generators:

- Shippers nominate hourly quantities and can change nominations each 15 minutes.
- Capacity is reserved through the day, so that firm service is guaranteed to be available after the first nomination window.
- The maximum hourly delivery quantity that is tied to the shippers' contract quantity, not the average scheduled quantity for the day.

APPrO has concerns about other aspects of the TransCanada proposal:

- FT-SN service must be tied to a dedicated meter. TransCanada will not allow gas to be delivered to this meter using other mainline transportation services.
- Each FT-SN delivery meter is a separate delivery area. Enbridge has stated that this requirement may prevent the use of the FT-SN service by services connected to its integrated distribution system. TransCanada and Enbridge Gas Distribution must work together to resolve metering problems and ensure that FT-SN remains a viable option for generators who choose to contract for the service.
- Even with additional nomination windows, shippers need to have a reasonable amount of flexibility to vary hourly consumption over the course of the day. TransCanada has not proposed hourly balancing, but proposes to enforce hourly flow rates with physical flow control at the delivery meter. Shippers should be expected to use the additional nomination flexibility TransCanada proposes to deliver gas over the day to avoid end-of-day imbalances. Deliveries should only be constrained to the extent necessary to protect the pipeline system.
- Finally, unless Union Gas implements flexible transportation services to provide access to additional third-party services through the Dawn hub, the only short notice balancing options that would be available to FT-SN customers are the TransCanada SNB service and the Union's DPBS. Generators need additional competitive options.

APPrO UNDERTAKING NO. 4:

To provide curriculum vitae for panel members.

Response:

Please see attached

APPrO UNDERTAKING NO. 5:

To provide an example of how the level and volatility of electricity costs in Ontario will change, using the example of the current rate and service offerings available to gas generators as compared to the ideal rate and service offerings that gas-fired generators would like to receive from Ontario utilities.

Response:

Giving power generators the ability to manage fuel costs, and greater certainty about what these costs will be, will influence generators' bidding behavior, reducing the level and volatility of electricity prices. APPrO's proposals will improve generators' ability to manage fuel costs by providing access to additional sources of gas supply and balancing services. The proposals will provide greater cost certainty by, for example, increasing liquidity in intra-day gas markets. This will reduce the risk premium that generators would otherwise include in their electricity offer prices to allow for the possibility that the electric dispatch will require the generator to purchase more or use less natural gas than the generator had previously purchased in the day-ahead market.

APPrO UNDERTAKING NO. 6:

To produce link to standard contract.

Response:

http://www.ontarioelectricityrfp.ca/Docs/ConsolidatedCESContract.pdf

APPrO UNDERTAKING NO. 7:

Please reproduce the example on page 20 of APPrO's evidence with EGD's proposed Rate 125 under two scenarios.

The first scenario would consist of using Union's proposed six additional nomination windows, and the second scenario would consist of using APPrO's proposed 24 nomination windows.

In addition, please assume the following:

(a) that the status quo would be maintained with respect to the hourly flow rate;

(b) that capacity would be available from TransCanada in the aforementioned nomination windows, that is, the ten nomination and the 24 nomination windows; and

(c) that the default balancing service under Rate 125 are fully utilized.

Response:

For the purpose of this response, the cost of gas is assumed to be $10/GJ

The example on pages 20 and 21 indicate:

> *Take a hypothetical 500 MW gas-fired generator situated in Enbridge's CDA that has a contract demand of 100,000GJ/d (4,167GJ/hr). Assume that as a result of the IESO's pre-dispatch schedule issued at 12:00 noon on the pre-dispatch day (Monday), the generator forecasts that it will consume gas for 18 hours, or 75,000 GJ, over the course of the day (10:00 a.m. Tuesday to 10:00 a.m. Wednesday) and proceeds to nominate, at the timely nomination window (Monday, 1p.m.)75,000 GJ over the gas day. Under this nomination, the rateable flow will effectively be 3,125GJ/hr (75,000 GJ/24) from 10:00 a.m. on Tuesday to 10:00 a.m. on Wednesday. Consider two scenarios:*
>
> ***c) Supply Underrun:*** *by 10:45 a.m. on Tuesday, the IESO has not dispatched the facility. The gas fired generator believes that it will not be dispatched for the remainder of the day.*
> ***d) Supply Overrun:*** *At 10:00 am on Tuesday, the IESO, responding to increased demands on the power system, issues revised dispatch instructions to the facility that will require it to increase its hourly consumption of gas over the day to 4,167 GJ/hr from 10:00 a.m. Tuesday to 10:00 a.m. Wednesday.*

Note these calculations are based on APPrO's understanding of Enbridge's tariff provisions.

Penalty Summary

	Scenario 1	Scenario 2
a) Supply Underrun	$14,141	$6,788
b) Supply Overrun	$1,255	$1,255

Scenario 1

a) Supply Underrun

- It will be assumed that the customer purchases gas at the rate of 3,125 GJ/h under NAESB windows (as noted in the example) and has F24-T service from Union to transport the gas to Parkway and FT-SN capacity to Enbridge
- Customer reduces its nomination under the F24-T and FT-SN contracts at the 1400 hours nomination window effective 1600 hours
- Customer reduces its deliveries from supplier under the NAESB intra-day 1 window effective 1800 hours

- i) Rate 125 imbalance

  - Deliveries to Enbridge (1000 hrs to 1600 hrs)
    6 h X 3,125 GJ/h = 18,750 GJ

  - Consumption = 0 GJ
  - Imbalance = 18,750 GJ
  - Assume MCI is 60% of CD = 60,000 GJ
  - First 2% of MCI imbalance is at no add'l cost = 1,200 GJ
  - Tier 1 imbalance, up to a further 8 % of MCI = 4,800 GJ
  - Remaining Tier 2 imbalance, up to MCI = 12,750 GJ
  - Tier 1 imbalance charges at 0.88¢/m^3 (assume 1 GJ= 26.5 m^3)
    Imbalance 4,800 GJ X 26.5 m^3/ GJ X 0.88¢/m^3 = $1,120

  - Tier 2 imbalance charges at 1.06¢/m^3
    Imbalance 12,750 GJ X 26.5 m^3/ GJ X 1.06¢/m^3 = $3,581

  - The customer would also incur cumulative imbalance charges for at least a 1 day period. These imbalance charges would be: 1.9 ¢/m^3 X 18,750 GJ X 26.5 GJ/ m^3
    = $9,440
  - **Total Rate 125 Imbalance charges = $14,141**

Note that additional load balancing charges might apply if TCPL charges Enbridge LBA fees. Also it is noted that Tier 2 charges may be subject to further seasonal restrictions

and penalties. In addition, on OFO days, if the customer's imbalance worsens the system constraints, cash out penalties apply.

- ii) Dawn imbalance

    - Note, since the customer reduced its nomination effective 1600 hours for its deliveries to Enbridge, it still must continue to receive gas from the supplier until it can change its intra-day nomination effective 1800 hours. This would result in continued deliveries at Dawn of 2h X 3,125 GJ/h = 6,250 GJ
    - It is assumed that customer has a high deliverability storage account with Enbridge and no further imbalance charges would apply.

b) Supply Overrun

- Customer increases consumption from planned rate of 3,125 GJ/h to 4,167 GJ/h effective at 1000 hours
- It will be assumed that the customer purchases gas at the rate of 3,125 GJ/h under NAESB windows (as noted in the example) and has F24-T service from Union to transport the gas to Parkway
- Customer increases its nomination under the F24-T contract at the 1000 hours nomination window effective 1200 hours, note this assumes that the embedded generator is able to increase its nominations on TCPL under a FT-SN contract, this also assumes that the customer withdraws 1,042 GJ/h from storage between 1200 hours and 1800 hours
- Customer increases its purchases from supplier under the NAESB intra-day 1 window effective 1800 hours from 3,125 GJ/h to 4,167 GJ/h

- i) Rate 125 imbalance

    - Imbalance (1000 hrs to 1200 hrs) 2 X 1042 GJ/h = 2,084 GJ
    - Assume MCI is 60% of CD = 60,000 GJ
    - First 2% of MCI imbalance is at no add'l cost = 1,200 GJ
    - Tier 1 imbalance, up to a further 8 % of MCI = 884 GJ
    - Remaining Tier 2 imbalance, up to MCI = 0 GJ
    - Tier 1 imbalance charges at 0.88¢/m^3 (assume 1 GJ= 26.5 m^3)
      Imbalance 884 GJ X 26.5 m^3/ GJ X 0.88¢/m^3 = $206

    - Tier 2 imbalance charges at 1.06¢/m^3
      Imbalance 252 GJ X 26.5 m^3/ GJ X 1.06¢/m^3 = $0

    - The customer would also incur cumulative imbalance charges for at least a 1 day period. These imbalance charges would be: 1.9 ¢/m^3 X 2,084 GJ X 26.5 GJ/ m^3 = $1,049

- **Total Rate 125 Imbalance charges = $1,255**

- ii) Dawn imbalance

  - it is assumed that the 1042 GJ/hr required to access high deliverability storage is within the injection and withdrawal parameters noted above and no further penalty charges would be incurred.

    Note that additional load balancing charges might apply if TCPL charges Enbridge LBA fees. Also it is noted that Tier 2 charges may be subject to further seasonal restrictions and penalties. In addition, on OFO days, if the customer's imbalance worsens the system constraints, cash out penalties apply.

Scenario 2

a) Supply Underrun

- It will be assumed that the customer purchases gas at the rate of 3,125 GJ/h under NAESB windows (as noted in the example) and has F24-T service from Union to transport the gas to Parkway and FT-SN capacity to Enbridge
- Customer reduces its nomination under at the APPrO proposed 1100 hours nomination window effective 1300 hours
- Customer reduces its deliveries from supplier under the NAESB intra-day 1 window effective 1800 hours

- i) Rate 125 imbalance

  - Deliveries to Enbridge (1000 hrs to 1300 hrs)
    3 h X 3,125 GJ/h = 9,375 GJ

  - Consumption = 0 GJ
  - Imbalance = 9,375 GJ
  - Assume MCI is 60% of CD = 60,000 GJ
  - First 2% of MCI imbalance is at no add'l cost = 1,200 GJ
  - Tier 1 imbalance, up to a further 8 % of MCI = 4,800 GJ
  - Remaining Tier 2 imbalance, up to MCI = 3,375 GJ
  - Tier 1 imbalance charges at 0.88¢/m^3 (assume 1 GJ= 26.5 m^3)
    Imbalance 4,800 GJ X 26.5 m^3/ GJ X 0.88¢/m^3 = $1,120

  - Tier 2 imbalance charges at 1.06¢/m^3
    Imbalance 3,375 GJ X 26.5 m^3/ GJ X 1.06¢/m^3 = $948

  - The customer would also incur cumulative imbalance charges for at least a 1 day period. These imbalance charges would be: 1.9 ¢/m^3 X 9,375 GJ X 26.5 GJ/ m^3
    = $4,720

- **Total Rate 125 Imbalance charges = $6,788**

Note that additional load balancing charges might apply if TCPL charges Enbridge LBA fees. Also it is noted that Tier 2 charges may be subject to further seasonal restrictions and penalties. In addition, on OFO days, if the customer's imbalance worsens the system constraints, cash out penalties apply.

- ii) Dawn imbalance

  - Note, since the customer reduced its nomination effective 1300 hours for its deliveries to Enbridge, it still must continue to receive gas from the supplier until it can change its intra-day nomination effective 1800 hours. This would result in continued deliveries at Dawn of 5h X 3,125 GJ/h = 15,625 GJ
  - It is assumed that customer has a high deliverability storage account with Enbridge and no further imbalance charges would apply.

b) Supply Overrun

- Customer increases consumption from planned rate of 3,125 GJ/h to 4,167 GJ/h effective at 1000 hours
- It will be assumed that the customer purchases gas at the rate of 3,125 GJ/h under NAESB windows (as noted in the example) and has F24-T service from Union to transport the gas to Parkway
- Customer increases its nomination under the proposed APPrO nomination window at the 1000 hours nomination window effective 1200 hours, note this assumes that the embedded generator is able to increase its nominations on TCPL under a FT-SN contract,
- Customer withdraws 1,042 GJ/h from storage between 1000 hours and 1800 hours
- Customer increases its purchases from supplier under the NAESB intra-day 1 window effective 1800 hours from 3,125 GJ/h to 4,167 GJ/h

- i) Rate 125 imbalance

  - Imbalance (1000 hrs to 1200 hrs) 2 X 1042 GJ/h = 2,084 GJ
  - Assume MCI is 60% of CD = 60,000 GJ
  - First 2% of MCI imbalance is at no add'l cost = 1,200 GJ
  - Tier 1 imbalance, up to a further 8 % of MCI = 884 GJ
  - Remaining Tier 2 imbalance, up to MCI = 0 GJ
  - Tier 1 imbalance charges at 0.88¢/m^3 (assume 1 GJ= 26.5 m^3)
    Imbalance 4,800 GJ X 26.5 m^3/ GJ X 0.88¢/m^3 = $206

  - Tier 2 imbalance charges at 1.06¢/m^3
    Imbalance 252 GJ X 26.5 m^3/ GJ X 1.06¢/m^3 = $0

- The customer would also incur cumulative imbalance charges for at least a 1 day period. These imbalance charges would be: 1.9 ¢/m^3 X 2,084 GJ X 26.5 GJ/ m^3
  = $1,049

- **Total Rate 125 Imbalance charges = $1,255**

Note that additional load balancing charges might apply if TCPL charges Enbridge LBA fees. Also it is noted that Tier 2 charges may be subject to further seasonal restrictions and penalties. In addition, on OFO days, if the customer's imbalance worsens the system constraints, cash out penalties apply.