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July 31, 2007

Via Email
Original via Courier

Mr. R.J. Pellatt
Commission Secretary
BC Utilities Commission
Sixth Floor, 900 Howe Street, Box 250
Vancouver, BC V6Z 2N3

Dear Mr. Pellatt:

Re: FortisBC Inc. ("FortisBC") Naramata Substation Project No. 3698458

Please find enclosed for filing twenty copies of FortisBC's Undertakings (Exhibit B-12) from the July 24, 2007 Oral Public Hearing held in Penticton.

Sincerely,

(original signed by J. Martin)

David Bennett
Vice President Regulatory Affairs
and General Counsel

cc: Registered Intervenors

Undertaking 1 - Transcript Volume 1, page 86 (Andrew)

Please provide the translation between per acre and per square meter.

U1 Response: One acre is equivalent to 4,046.825 square meters.

Undertaking 2 - Transcript Volume 1, page 105 (Andrew)

Please provide consultation dates with local residents / landowners prior to the ALC Approval of the Arawana Road site.

U2 Response: FortisBC did not contact land-owners adjacent to the Arawana Road site prior to filing an application for non-farm use with the ALC. Such an application is a preliminary step in evaluating the suitability of a site. Unlike the process for removal of land from the ALR, the application for a Permit of Non-farm Use does not have a requirement for public consultation.

Undertaking 3 - Transcript Volume 1, page 119-120 (Andrew)

Please provide cost estimates that include the cost of helicopters and hand digging for the direct cross country transmission line routing.

U3 Response: The detailed construction costs (including helicopter usage cost) for the direct cross country transmission line route is provided in the table below.

	CONSTRUCTION PARAMETERS FOR THE DIRECT CROSS COUNTRY ROUTE	COST ($000)
1	**Preliminary Foundations**	
1.1	Excavation & Access	10.0
1.2	Pole Excavation (includes hand digging)	10.0
2	**Assembly & Framing**	
2.1	Framing Labour	6.0
2.2	Setting Labour	13.0
2.3	Safety & Grounding Labour	1.0
2.4	Travel & Non Productive Time	1.5
2.5	Supervision Labour	1.0
2.6	Anchoring Labour	2.0
2.7	Helicopter Costs	30.0
3	**Stringing, Terminations & Tying In**	
3.1	Stringing	24.0
3.2	Sagging & Tying	9.5
3.3	Switching Labour	1.5
3.4	Safety & Grounding Labour	1.5
3.5	Travel & Non Productive Time	2.0
3.6	Supervision Labour	1.0
4	**Right of Way & Land**	
4.1	Staking	1.5
4.2	Brushing, Clearing & Reseeding	5.0
4.3	Supervision Labour	13.0
5	**Materials**	
5.1	Conductor & Accessories	24.0
5.2	Poles	13.5
5.3	Allied Materials	18.0
5.4	Anchoring	2.0
5.5	Transportation, Loading & Overheads	4.0
6	**Engineering**	
6.1	Engineering	19.0
7	**Other Costs**	
7.1	Project Management	8.0
7.2	Traffic Control	5.0
8	**Subtotal Project Cost**	**227.0**
9	**Contingency (10%)**	**22.7**
TOTAL COST		**$249.7**

Undertaking 4 - Transcript Volume 1, page 142 (Miller)

Please confirm whether the BTY Group Market Inflation estimates (6% for 2007 and 5% for 2008) include both inflation and market escalation.

U4 Response: The estimates appear to include both inflation and market escalation.

Undertaking 5 - Transcript Volume 1, page 154 (Miller)

Please provide the summary of indirect costs for both the Arawana Road and the Fire Hall sites.

U5 Response: FortisBC has incurred approximately $1.1 million in preliminary and investigative costs as the Arawana Project progressed from the 2005 Capital Expenditure Plan to the present day. The actual costs and the year incurred are shown in the table below.

In reviewing the costs incurred, it is important to note the following:

1. The Arawana substation was one of the first new 63 kV substations proposed in an urban area as part of the 2005 - 2024 System Development Plan ("SDP"). It is apparent from current cost projections that the estimate prepared for the SDP submission was optimistic and did not properly reflect the effort required from a preliminary planning, engineering and site selection perspective. Basic assumptions made in the original estimate (namely that a substation site would not be difficult or expensive to obtain) have proven to be flawed.

2. FortisBC has stated previously (Exhibit B-2, Appendix A, page 5) that approximately 20 sites were evaluated on a preliminary basis, and that 7 sites were looked at in greater detail. As part of due diligence, the minimum tasks that were associated with each site that were evaluated on a preliminary basis (approximately 20 in total) included:

- Site visit with FortisBC lands agent and Project Manager;
- Preliminary review of distances to transmission and distribution facilities;
- Lands title search; and
- Preliminary engineering review.

Of the 7 sites that were looked at in greater detail, the following additional tasks were completed

- Further Engineering Review (including site visit) to confirm substation orientation of site, determine civil construction details, visual determination of existing soil conditions and possible limitations to the site from an engineering perspective;
- Discussions with land owners by FortisBC project manager and lands agent;
- Distribution Planning review to evaluate feeder options, and suitability of location from a planning perspective; and
- Review of each site by Lines Engineer to assess Transmission and Distribution lines routes

3. The preliminary costs incurred to date also include preliminary design of the substation components that would not be affected by the actual site location.

4. Once a preferred site was identified (originally the Kato property), FortisBC continued with preliminary civil design of this site prior to having purchased the property. The decision to proceed with the civil design in absence of title on the property was based on the assumption that the permitting and resulting sale of the Kato property would be successful.

5. When the opposition to the north section of the Kato property resulted in an amendment to the ALC application, civil design on the South portion of the Kato property was started.

6. Subsequent to the open house held June 1, 2006, FortisBC began a more detailed investigation into the feasibility of the Fire Hall site as a location for the substation. Given the limited size of the site, preliminary survey was completed, preliminary engineering and planning work was completed and numerous site visits were held by FortisBC staff.

In summary, the Preliminary Engineering and Investigative costs incurred to date were not anticipated at the time of the 2005 submission. The project has been active for over two years, and through that time FortisBC staff and consultants have been actively working to secure a suitable site. Decisions were made early in the process to advance engineering wherever possible to expedite the construction of the new substation and minimize the outage risks associated with operating through additional winter peak periods given the state of the existing transformer.

As noted above, the Arawana project was the first new 63 kV substation to be proposed from the 2005-2024 System Development Plan. Although the process to acquire land and evaluate sites resulted in high costs for the Arawana project, the lessons learned from the process have been applied to our other capital substation projects, and have been resulting in a more cost effective process.

	2005	**2006**	**2007**	**Total**
Planning	65.0	26.0	8.0	99.0
Engineering	449.5	210.0		659.5
Land	89.0		2.5	91.5
Project Management	84.5	80.0	10.5	175.0
Regulatory			78.0	78.0
	688.0	**316.0**	**99.0**	**1,103.0**

Undertaking 6 - Transcript Volume 1, page 155 (Miller)

Please provide the cost for the additional option of one overhead transmission line and two underground distribution feeders along the Arawana Road.

U6 Response: The cost of this option is similar to both the direct route and the Arawana Road route with overhead transmission, underbuilt distribution and one underground distribution feeder.

Option F – Arawana Road – This option would see the substation constructed at the Arawana Road site. The existing distribution feeder up Arawana Road would be removed and a single circuit 63 kV transmission line would be constructed within the Arawana Road right of way. A single express distribution circuit would be constructed underground from the Arawana Road site to Naramata Road, and a second underground circuit would be constructed with service connections to the existing homes and feeds along the Arawana Road route. Please see Option F in the table below.

	i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	x.
Appendix A6.1 Reference			Option C			Option A	Option B	Option D	Option E	Option F
Substation Site	**Fire Hall**	**Fire Hall**	**Arawana**	**Arawana**	**Arawana**	**Arawana**	**Arawana**	**Arawana**	**Arawana**	**Arawana**
Substation Screening		Aesthetic wall		Vegetation	Aesthetic wall					
Transmission Line			Direct O/H	Direct O/H	Direct O/H	Direct U/G	Arawana Rd U/G	Arawana Rd O/H	Arawana Rd Self Supporting	Arawana Rd O/H
Distribution Line 1			Underbuild	Underbuild	Underbuild	Direct U/G	Arawana Rd. U/G	Arawana Rd Underbuild	Arawana Rd Underbuild	Underground express
Distribution Line 2			Arawana Rd O/H	Arawana Rd O/H	Arawana Rd O/H	Arawana Rd O/H	Arawana Rd O/H	Arawana Rd U/G	Arawana Rd U/G	Underground with service connections
Total Costs Incurred to Date	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450
Substation Total	3,850	3,990	2,650	2,800	2,730	2,650	2,650	2,650	2,650	2,650
Transmission Line	50	50	250	250	250	800**	1,100	300	730	175
Distribution Line	50	50	100	100	100	100***	100***	150+	150+	150 (express u/g) 175 (u/g with connections)
Acquisition of Fire Hall Site	400	400	0	0	0	0	0	0	0	0
Disposal of Arawana Road Site	(500)	(500)	0	0	0	0	0	0	0	0
Lines rights of way	-	-	300	300	300	300	100++	100++	0	100++
Regulatory Costs	200	200	200	200	200	200	200	200	200	200
AFUDC	772	772	339	339*	339*	339*	339*	339	339	339
Forecast Total	7,272	7,362	6,289	6,439	6,369	6,839	6,939	6,189	6,519	6,239

* AFUDC is assumed to be equal for the purposes of comparison.

** Transmission route includes one distribution feeder.

*** Includes the cost to upgrade the existing distribution on Arawana Road.

\+ Allows for underground distribution feeder.

++ Costs estimated are to allow for acquiring anchoring easements where required.

Undertaking 7 - Transcript Volume 1, page 167 (Miller)

Please provide the construction schedule for both the Arawana Road and the Fire Hall sites.

U7 Response: This construction schedule applies to substation construction. Construction of distribution and transmission lines are expected to occur concurrently with substation construction, however, details cannot be provided until a final decision on line route and whether they are underground or overhead.

		Arawana Road	**Fire Hall**
1	Construction Contract Award.	March 08	January 09
2	Construction start	April 08	February 09
3	Civil site prep	April 08 (4 weeks)	February 09 (7 weeks)
4	Retaining Wall		End March 09 (3-4 weeks)
5	Footings poured	May 08 (2 weeks)	Mid April (2 weeks)
6	Erect structures and buswork	May 08 (3 weeks)	May 09 (3 weeks)
7	Transformer delivery/setup	July 08 (3 weeks)	July 09 (3 weeks)
8	Control Room and Site wiring	June to August 08 (7 weeks)	June to August 09 (7 weeks)
9	Connectivity to transmission and distribution lines	September 08 (2 weeks)	September 09 (2 weeks)
10	Construction end	September 08	September 09
11	Commissioning complete	October 08	October 09

Undertaking 8 - Transcript Volume 1, page 178 (Commissioner O'Hara)

Please provide more precise reconciliation between the original cost estimate and the new cost estimate allowing specifically for the fact that there was the reduction in the size of the transformer and the saving of about $200,000.

U8 Response: Please see the reconciliation requested in the table below.

ARAWANA ROAD SUBSTATION **Comparison of 2005 to 2007 estimates**	Total Estimated Cost per Section ***(2007)***		Total Estimated Cost per Section ***(2005)***		***Difference***	***Comments***
Line Costs	$367,300		$166,000		***$201,300***	Line costs for the Arawana estimate are higher due to the distance the site is located from the transmission line. The 2005 estimate assumed a station site in close proximity to the transmission line.
Civil and Site	$936,535		$571,000		***$365,535***	Difference in civil costs reflects higher labor rates and material costs
Buildings	$170,005		$152,967		***$17,038***	No change in scope, primarily material and labor rate escalation
Structures and Buswork	$267,651		$186,175		***$81,476***	No change in scope, primarily material and labor rate escalation (mainly increase in steel prices)
Station Equipment and Apparatus	$1,098,957		$987,300		***$111,657***	Equipment cost change is the result of increase in transformer cost realized through a competitive tendering process, offset by the removal of the requirement for high side breaker and associated equipement with the change in the transformer size.
Commuincations	$90,137		$84,653		***$5,484***	No change in scope, primarily material and labor rate escalation
P&C	$129,938		$128,726		***$1,212***	No change in scope, primarily material and labor rate escalation
Commissioning	$129,740		$115,000		***$14,740***	Minor revision to work required based on previous projects
Total Construction Costs		***$3,190,262***		***$2,391,821***		
Site Selection and Acquisition	$525,000		$125,000			Originally assumed a 0.5ha parcel at estimated price of $250,000/ha. Actual site size required in order to construct the substation with a 0.5ha footprint was a minimum of 0.9ha
Transmission Line ROW acquisition	$300,000		$0			
Total Land Costs		***$825,000***		***$125,000***		
Planning	***$99,000***		$10,000			Please see Undertaking 5
Preliminary Engineering	***$660,000***		$25,000			
Engineering (20%)	$387,000		$330,000			
Preliminary Project Management	***$308,000***					Includes work to negotiate a successful site for the project, contracts for transformer and other material purchases, public consultation process, etc. *(note - the original budget of $270,000 was expected to cover these preliminary costs)*
Project Management	$276,000		$270,000			
Regulatory Costs	$200,000					
AFUDC	$339,000		$94,000			
Total Eng. and Project Management Costs		***$2,269,000***		***$729,000***		
TOTAL		***$6,284,262***	***TOTAL***		***$3,245,821***	