File: EB-2007-0050

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998,* S.O. 1998, c. 15, (Schedule B), (the "Act")

AND IN THE MATTER an Application by Hydro One Networks Inc. pursuant to section 92 of the Act, for an Order or Orders granting leave to construct a transmission reinforcement project between Bruce Power Facility and Milton Switching Station all in the Province of Ontario

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ARGUMENT
OF
THE INTERVENORS
THE FALLIS GROUP

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ARGUMENT
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THE FALLIS GROUP

The Fallis Group of Intervenors, ("these Intervenors"), make the following submissions in Argument with respect to the Application of Hydro One Networks Inc., ("HONI"), made under s. 92 of the Ontario Energy Board Act, (the "Act") for the project described in the Application, (the "Project") ;

PREAMBLE.

These Intervenors wish to re-confirm to this Board, at the outset, that their lands already sustain a 230KV transmission line built in the 1960's, and a 500KV transmission line built in the late 1970's. What is being asked of them, in this Application, is to suffer, by conscription, from yet a third transmission line on their own lands - as a further thank you to their lands, if you will, for already serving the electrical consumers of Ontario for over 30 years without any continuing consideration whatsoever after the initial easements were granted or expropriated.

The Intervenors are also electrical consumers and, along with the Ross Law Firm Group, now represent the largest group of landowner consumers at this hearing. [Powerline and its lawyers Borden, Ladner Gervais LLP., the largest original group of landowner /consumer Intervenors, mysteriously withdrew from these hearings just before the oral phase, and just as they withdrew before the commencement of the related and completed access hearings, (EB-2000-0051), held in July of 2007].

These Intervenors have continued to participate throughout in order to make sure that the Board has had before it an awareness of the issues and alternatives that have needed to be considered by the OEB. As the *Ontario Energy Board Act*, (the *"Act"),* was passed by the Legislature for the benefit of these and all other electrical consumers of Ontario **"to protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service"** these consumers therefore are entitled to look to this Board to make sure that their statutory entitlement to those benefits is upheld, as that mandate for measuring those benefits has been placed with the Board to determine. As the Legislature has given the Board the exclusive authority to receive, review and evaluate this s. 92 'Leave to Construct" Application to protect those interests of the electrical consumers of Ontario, these consumers must have confidence in the Board to make the right decision and to share with these consumers the analyses that the Board will make in its review of the preferred option of HONI and the reasonable alternatives presented to the Board during the course of these hearings.

These Intervenors and the electrical consumers of Ontario look forward to the decision of the Board after a full review of the evidence received in this Application. They wish to learn whether or not this Board will determine that HONI has provided the Board with sufficient cost/benefit analyses for each of the reasonable alternatives for the additional transmission of electrical power from the Bruce area to Milton in order for this Board to make a fully informed decision. Such decision should allow all electrical consumers in the Province to fully understand how each of the transmission alternatives compares with the preferred option of HONI.

Absent the supply by HONI of sufficient evidentiary information this Board should report back in its decision that HONI has failed to supply sufficient information on the reasonable alternatives to allow it to fully compare the preferred option of HONI with those reasonable alternatives, and that accordingly the Board is unable to approve the Application of HONI at this time.

These Intervenors therefore make the following submissions to the Board to assist the Board in making its ultimate determinations.

PART 'I'

PROCEDURAL ISSUES:

A. Project Categorization

A.1 Under Rule 5.2 of the OEB *'Filing Requirements for Transmission and Distributions Applications'*, [EB-2006-0170], ('Filing Requirements'), the Board is required to determine the "Project Categorization", which involves two stages of determination.

First Stage: The first stage of categorization requires the Board to classify the Project, into one of three specific classes: namely whether the Project is a 'Development', 'Connection', or 'Sustainment' project .

Second Stage: The second stage of categorization requires the Board to identify the project need as:

a. **"Non-discretionary"** – a "must do" project, the need for which

is determined beyond the control of the Applicant ("*Non-discretionary*"), or

a. "**Discretionary**"– the need is determined at the discretion of the Applicant ("*Discretionary*")

Project Classification:

A.2 Under Rule . 5.2.1 of the Filing Requirements these Intervenors submit that the Project does not fall within the class of "Connection' as described therein. They submit that the Project has attributes of the remaining two specific classes, "Development Project" and "Sustainment Project" as described therein. Rule 5.2.1 requires that in such a situation the Applicant, HONI, should identify the proportional make-up of the Project, and then classify the Project based on the predominant driver. The Application of HONI herein does not appear to make any such classification based on the predominant driver, notwithstanding the Rules.

A.3 The Application leans more to a "*Development Project*" description in Rule 5.2.1. as a project designed to provide "*an adequate supply capacity and/or maintaining an acceptable or prescribed level of customer or system reliability for load growth meeting increased stresses on the system;*" or "*enhancing system efficiency such as minimizing congestion on the transmission system and reducing system losses*" than the Application does to a "*Sustainment Project*" description in Rule 5.2.1 as a project designed *for maintaining the performance of the transmission network at its current standard or replacing end-of-life facilities on a "like for like" basis.*

A.4 These Intervenors submit that HONI does not appear to have fulfilled the requirement of Rule 5.2.1 to identify the proportional elements of the mixed classifications of this project, and then to classify the project based on the predominant driver.

A.5 These Intervenors submit upon an evaluation of the evidence received in this proceeding, this Board should determine this to be a "*Development Project*", being the predominant driver after reviewing the proportional elements of the proposed Project.

Project Need - "Discretionary" or "Non-Discretionary

A.6 The second stage of project categorization under Rule 5.2.2 of the Filing Requirements requires the Board to distinguish whether the project need is determined beyond the control of the Applicant ("Non-discretionary") or determined at the discretion of the Applicant ("Discretionary").

Non-discretionary projects may be triggered or determined by such things as:

- **Mandatory requirement to satisfy obligations specified by Regulatory Organizations including NPCC/NERC (the designated ERO in the future) or by the Independent Electricity Market Operator (IESO);**
- **A need to accommodate new load (of a distributor or large user) or new generation (connection);**
- **A need to address equipment loading or voltage/short circuit stresses when their rated capacities are exceeded;**
- **Projects identified in an approved IPSP;**
- **Projects that are required to achieve Government objectives that are prescribed in governmental directives or regulations;**
- **A need to comply with direction from the Ontario Energy Board in the event it is determined that the transmission system's reliability is at risk.**

Discretionary projects are proposed by the Applicant to enhance transmission system performance benefitting its users.

Projects in this category may include:

- **Projects to reduce transmission system losses;**
- **Projects to reduce congestion;**
- **Projects to build a new or enhance an existing interconnection to increase generation reserve margin within the IESO-controlled grid, beyond the minimum level required;**
- **Projects to enhance reliability beyond a minimum standard;**
- **Projects which add flexibility to the operation and maintenance of the transmission system**

'It is therefore expected that the applicant will provide a list identifying the key driving factors of the evidence justifying the project need, and the party (e.g. the applicant, the IESO, or the OPA) which has prepared the evidence to justify a given key driving factor'.

> **'In some cases, the need for a discretionary or non-discretionary project is driven by factors external to the Applicant, such as the need to satisfy an IESO requirement or to serve an incremental customer load. The factors driving the project must be identified, but the burden remains on the Applicant to support the claim of need.'**

A.7 These Intervenors submit that the Rules contained in the Filing Requirements require that the Board must determine whether the project need is determined beyond the control of the Applicant ("Non-discretionary") or is determined at the discretion of the Applicant ("Discretionary"). As the Rules recognize that a "Discretionary Project" may be driven by factors external to HONI, such as a need to satisfy a request by the OPA, or to satisfy a desire by the IESO to enhance the Safety Protection System ('SPS'), the Board must still make this determination.

A.8 The Applicant, HONI, was challenged by these Intervenors at the October 15-16, 2007 Technical Conference, and again during the Oral Hearings, to produce evidence to show that it was mandated and obligated to initiate the s. 92 Application for Leave to Construct the Project, under a '*direction*' made by a superior third party. HONI has yet failed to do so.

A.9 These Interveners submit that the onus remains with HONI to persuade the Board that HONI was mandated and obligated to initiate the s. 92 Application for Leave to Construct the Project. They further submit that the Board cannot now supply evidence or reason to find that HONI was directed to make this Application and that the Project need was determined beyond the control of the Applicant.

A.10 Mr. Chow, of the OPA, testified that the OPA did NOT have legislative authority to make a directive to HONI, and therefore it restricted itself to the words employed in its letter to Hydro One Inc., (see Transcript, Day 5, May 7th, Page 10. Lines 13 to 21, and Page 11, Line 16 to 24). .

A.11 The only document that HONI produced in this hearing in respect to a third party request was Pre-filed Exhibit B-6-4, Appendix 4, p. 2-4 , being a letter from Mr. Jan Carr, CEO of the

OPA to *"Hydro One Inc."* dated March 23rd, 2007, (*being a separate corporation that is neither a Party nor an Intervenor in this proceeding*), which '*urged*' Hydro One Inc. to make a s. 92 Application for Leave to Construct the Project

> "The Purpose of this letter is to **urge** Hydro One Inc. to initiate activities necessary to construct a new double-circuit 500 kV line between the Bruce Nuclear Power Complex and Hydro One's existing Milton double switching station located in the Town of Milton in the western part of the Greater Toronto Area (GTA) for in service by December 1, 2011".
>
> **(Emphasis added)**

At the end of that letter Mr. Jan Carr further stated to Hydro One Inc:

> **"If you choose to proceed with this project** as the project proponent, you will have the support of the OPA in the regulatory process for this project"
>
> **(Emphasis added)**

A.12 This letter constitutes *a request* by the OPA, to persuade Hydro One Inc. to make a s. 92 Application for Leave to Construct the Project, which letter contemplated that Hydro One Inc had a choice, namely *to proceed* or *not to proceed* with the project as the project proponent. THIS LETTER DOES **NOT** CONSTITUTE A "DIRECTIVE' which would then serve to make the project a "Non-Discretionary" project for Hydro One Inc. Furthermore this letter was **not even** directed or provided to the Applicant, HONI

A.13 The OPA has authority under sec 25.1(2)(5)(e) & (f) of the *Electricity Act, 1998*, S.O. 1998, chap. 15 to:

> **(e) to take such steps as it considers advisable to facilitate the provision of services relating to,**
>
> **(I) electricity conservation and the efficient use of electricity,**
>
> **(ii) electricity load management, or**
>
> **(iii) the use of cleaner energy sources, including alternative energy sources and renewable energy sources;**
>
> **(f) to take such steps as it considers advisable to ensure there is adequate transmission capacity as identified in the integrated power system plan.**

These sections are sufficient in law provide the OPA with appropriate and lawful authority to have issued a written directive to HONI to make a s. 92 Application for Leave to Construct the Project. The OPA has not done so.

A.14 These Intervenors submit that Mr. Chow, on behalf of the OPA ,was merely attempting to justify what the OPA had done and put it in the best light possible. Sec. 25.1(2)(5)(e) & (f) of the *Electricity Act, 1998* clearly gives the OPA sufficient authority to have directed HONI to make a s. 92 Application for Leave to Construct the Project and to be the Project Proponent.

A.15 The *Electricity Act, 1998*, was amended in 2004 to create the Ontario Power Authority as a statutory corporation (s. 25.1(1)). Its name serves to define its role. It is the ultimate Ontario authority to carry out the objects set out in s. 25.1(2). including:

> **(a) to forecast electricity demand and the adequacy and reliability of electricity resources for Ontario for the medium and long term;**
>
> **(b) to conduct independent planning for electricity generation, demand management, conservation and transmission and develop integrated power system plans for Ontario;**
>
> **(c) to engage in activities in support of the goal of ensuring adequate, reliable and secure electricity supply and resources in Ontario;**
>
> **(d) to engage in activities to facilitate the diversification of sources of electricity supply by promoting the use of cleaner energy sources and technologies, including alternative energy sources and renewable energy sources;**
>
> **(e) to establish system-wide goals for the amount of electricity to be produced from alternative energy sources and renewable energy sources;**
>
> **(f) to engage in activities that facilitate load management;**
>
> **(g) to engage in activities that promote electricity conservation and the efficient use of electricity;**

A.16 The powers imbedded in the OPA under s. 25.1(2) put it in charge of the supply of electricity in Ontario with lawful authority to engage in such activities to ensure the adequate, reliable

and secure supply of electricity and resources in Ontario. Included therein is the power to direct HONI to make a s. 92 Application for Leave to Construct the Project and to be the Project Proponent. It is hard to imagine a clearer authority.

A.17 The OPA, therefore having the power, under Part II.1 of the *Electricity Act, 1998*, to direct HONI to make a s. 92 Application for Leave to Construct the Project and to be the Project Proponent., did not do so. If the OPA wanted to direct HONI to make that application it was empowered to do so. However it made only a written request of Hydro One Inc. and nothing more, and it made no such request of HONI.

A.18 These Intervenors submit that this Board has no statutory power to retroactively supply a deemed direction to HONI on behalf of the OPA when such direction does not in fact exist. These Intervenors submit that the Board's only role in this issue is to evaluate what evidence has been presented to the Board on the issue of the 'discretionary' or "non-discretionary' decisions by HONI, and to make a decision based on that evidence.

A.19 HONI was, by the admission of its counsel, incorporated under the *Business Corporations Act*, of Ontario. No evidence was lead by HONI, and no evidence was produced under cross-examination that demonstrated that HONI ever received any written direction from any third party whatsoever to make a s. 92 Application for Leave to Construct the Project . Whatever may have been or may be HONI's relationship with Hydro One Inc., (also incorporated under the *Business Corporations Act*), no evidence by way of a written direction from Hydro One Inc. to HONI, nor a resolution of Hydro One Inc. to direct HONI to make such s. 92 Application for Leave to Construct the Project, was ever produced or introduced into evidence by HONI or by any third party.

The Application by HONI is a "Discretionary" Application:

A.20 The s. 92 Application of HONI for Leave to Construct the Project was made by HONI in its sole discretion, without any 'direction' from any third party. This Board has no choice but to make a finding in law that HONI has made a **'Discretionary'** application to this Board for the

Project, and that the Project is NOT **a "Non-Discretionary Project".** A "Non-Discretionary Project" is a "must do" project, the need for which is determined beyond the control of the Applicant. The fact that HONI has never been requested by any third party to make the Application, and the fact that the written request made by the OPA to Hydro One Inc. permitted Hydro One Inc. the choice as to whether or not to proceed as a project proponent, clearly signals that the Application by HONI was voluntary and not mandated, and that vis-a-vis HONI the project was and still is *"Discretionary"*.

Summary of Project Categorization:

A.21 These Intervenors invite the Board to conclude the Application Project to be a *"Discretionary Development Project"*

A.22 These words are NOT to be first determined by this Board only just to be "*adjectives*" to the overall Application. The Rules were designed to have purpose, and this Board should so find. The Rules do not specifically clarify the significance for the Board's making of such a determination. This Proceeding will now give this Board the opportunity to do just that.

A.23 These Intervenors submit that as the 'Development" project of HONI is "*Discretionary"* this Board must therefore have specific regard to its own objects in order to evaluate the Project Application. Had the Project been otherwise found to be "*Non-Discretionary*" this Board would have been inclined to weigh the "directive" of the OPA, had it been given, to have a tendency to supercede the cost of the project, and to supercede other more cost effective alternative transmission technologies in favour of the preferred option now sought by HONI.

A.24 These Intervenors submit that absent a classification determination that the Project is "*Non-Discretionary*", this Board can be true to its objects and can now look at the proposal through its usual filters, namely (s. 1(1):

1. **To protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service.**
2. **To promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity and to facilitate the maintenance of a financially viable electricity industry.**

A.25 These Intervenors submit that the Board is now able to evaluate the proposed Development Project through it regular filters, unencumbered by a limiting determination that the Project is "Non-Discretionary" had such determination been made. In short this Board can now ***"protect the interest of consumers with respect to prices and to promote economic efficiency and cost effectiveness in the transmission of electricity".***

A.26 These Intervenors invite the Board to make the above determination before it sets out on its next administrative tasks in this hearing.

B. PROJECT JUSTIFICATION

B.1 S. 5.3 of the OEB 'Filing Requirements' requires an Applicant to justify the Project. The Applicant's evidence in support of the need for the project is required, and can be supported by evidence of the IESO and/or the Ontario Power Authority;

- Where a proposed project is best compared to other viable transmission alternatives, including "doing nothing", and

- Where the Applicant lists benefits of avoiding non-transmission alternatives such as a peaking generation facility or a "must run" generation requirement, it is helpful for the Applicant to include corroborative evidence from the IESO or the OPA regarding the Applicant's quantitative evaluation of such a benefit. In any

event, this evidence is required to support the need for the project

B.3 However the Filing Requirements have not yet been sufficiently refined to contemplate a project application of this size and stature. One of the last major Transmission Lines in Ontario was chosen under a process that evaluated only routing choices in an application to the Consolidated Hearing Board under File No.85-03 rendered February 20th, 1987 in the *"Proposed Transmission Plan of Ontario Hydro for Southwestern Ontario"*.

B.4. Although this Board was created in 1960 it has only been involved with transmission construction applications since 1998 under the provisions of the *Ontario Energy Board Act*, 1998, Chap. 15. The Consolidated Hearing Board ("CHB"), was the judicial/administrative forum that previously considered transmission line construction issues under the *Environmental Assessment Act*, R.S.O. 1980, C.140, the *Expropriations Act*, R.S.O. 1980, C. 140, the *Niagara Escarpment Planning and Development Act*, R.S.O 1980 c. 316, and the *Parkway Belt Planning and Development Act*, R.S.O. 1980, C. 368 as a consolidated hearing.

B.5 Unlike the previous hearing process of the CHB this Board has declined to receive any evidence on any environmental or corridor alternate routing issues under the *Environmental Assessment Act* or the *Niagara Escarpment Planning and Development Act*, and has specifically refused a written request made of the Board to issue a summons to representatives of the underlying agencies, upon a reasoned request made by these Intervenors to this Board.

B.6 The CHB heard evidence under B# 85-03 on the technical aspects of the requirements of Ontario Hydro for the need for a new 500 KV Transmission Line to be able to transmit 6,400 MW of Power from the Bruce Nuclear Power Development ('BNPD') to the Ontario Grid on three alternative Transmission corridor routings for a new 500KV Line.

B.7. As the proceedings were combined, the CHB. used the wording of the 1980 *Environmental*

Assessment Act as a benchmark guideline in making its overall evaluations of that application of Ontario Hydro as it related to all Acts, namely s. 5(3)(b) thereof:

> **5(3) An environmental assessment submitted to the Minister pursuant to subsection (1) shall consist of,**
>
> **(a) a description of the proposed undertaking**
>
> **(b) a description of and a statement of the rationale for;**
>
> **(I) the undertaking**
>
> **(ii) the alternative methods of carrying out the undertaking, and**
>
> **(iii) the alternatives to the undertaking**

B.8 The CHB , at page 21 of its decision referenced a judicial interpretation made by the Divisional Court in a case, *Re Joint Board under the Consolidated Hearings Act and Ontario Hydro et al.* (1985) 51 O.R. (2nd) 65, in which that Court distinguished between the meaning of "*alternative methods*" and *"alternatives to the undertaking*". The Divisional Court found at p. 73 thereof that the distinction between those two meanings is crucial:

> **"No provision in the *Environmental Assessment Act* or the *Consolidated Hearings Act, 1981* gives the Joint Board jurisdiction to approve at the hearing an alternative to the undertaking whether identified by Hydro or not. Only the Proponent describes the undertaking proposed. The alternatives to the undertaking described by the Proponent are only for the purpose of assisting the Board in assessing the undertaking as proposed by in the light of possible alternatives. The Board has no jurisdiction to do anything but refuse to approve the undertaking if it considers that an alternative to the undertaking to be the preferable choice".**

and at P. 74 the Court continued:

> **"There is no specific provision in either the *Environmental Assessment Act* or the *Consolidated Hearings Act, 1981* which provides for the Board to approve a**

> **method of carrying out the undertaking. However the Board is given broad powers under sec. 12(1) of the *Environmental Assessment Act* to approve the undertaking subject to terms and conditions. We are of the opinion that those powers permit the Board to attach as a condition to its approval of the undertaking the acceptance by Hydro of any one of the methods of carrying out the undertaking originally identified by Hydro. Indeed, it could attach as a condition of approval the adoption by Hydro of a method of carrying out the undertaking never previously considered by Hydro. Hydro's option would then be to accept or decline the approval as qualified by the Board. The power given to the Board under sec. 5(3)and 5(4) of the *Consolidated Hearings Act, 1981* to defer matters and impose terms and conditions with respect to the matter deferred effects the same result. To hold otherwise would diminish the power of the Board to approve undertakings and curtail the utility of submissions by interested participants in the hearings."**

B.9 This case was appealed to the Court of Appeal which made no comment on these findings. Effectively the above reasoning has been approved by the Ontario Court of Appeal. The Joint Board accepted that decision as the law of Ontario, and the Joint Board thereupon made the following conclusion at p. 22 of its decision:

> **" Thus it can be seen that the Joint Board can approve either the undertaking or what it finds to be an alternative method. The proponent may or may not choose to implement the alternative method and indeed has the same option with regard to its undertaking (preferred method) since the Board's approval is, in essence, a licence or permission to proceed. And it is not mandatory in the sense that its decision must be carried out. However, whereas the proponent has the option of implementing an approved method, no such right extends to an alternative to the undertaking. Therefore, where a Joint Board finds an alternative to the undertaking to be preferable to the undertaking itself, it has only one course of action and that is to turn down the undertaking itself."**

B. 10 These Intervenors submit that this Board, similar to the Consolidated Hearings Board, ('Joint Board'), also has broad powers and to grant leave to construct an electricity transmission line, to make an interim Order, and to impose conditions on the issuance of any leave so granted, and to defer a final decision until after certain condition precedent events happen, such as approval for a route choice being approved by the Minister of the Environment and a development permit being issued to HONI by the Niagara Escarpment Commission.

B.11 These Intervenors submit that this Board must look at alternative technologies as part of its mandate ***'to protect the interest of consumers with respect to prices and to promote economic efficiency and cost effectiveness in the transmission of electricity."***

B.12 These Intervenors submit that the CHB in B # 85-03 effectively dealt with the same objects as this Board now proposes to deal with, and that the *"Hearings of Necessity"* otherwise held under the *Expropriations Act,* R.S.O. 1990 C. 26, wherein sec 7(5) provides that an inquiry officer shall be appointed:

> **". . . who shall inquire whether the taking of the lands or any part of the lands of an owner or of more than one owner of the same lands is fair, sound and reasonably necessary in the achievement of the objectives of the expropriating authority."**

B.13 A stated objective of the OEB is **"to protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service"**. The considerations of the Inquiry Officer under the *Expropriations Act* are anchored in the making of a determination as to whether the proposed Line, the preferred option of the proponent ,would be *'fair'* in the sense of price advantage to consumers, *'sound'* in the sense of adequacy, quality and reliability of the electrical system, and *'reasonably necessary in the achievement of the objectives of HONI'* in the sense that HONI submits and requests the Board to agree that the 500 KV line must be built to accommodate future forecast electrical generation from the Bruce area.

B.14 Simply put, the administrative considerations to be undertaken by this Board parallel similar considerations that the CHB had to consider in application B # 85-03, and, as such, those considerations appear to require this Board to look at reasonable technological alternatives.

B.15. This hearing appears to be a first in Ontario, if not in Canada, where there are technological alternatives to the building of a brand new 500 KV Transmission line in a new transmission

Corridor. Previously the alternatives to be considered by the CHB, and other administrative forums, were limited only to the choice of corridor routing alternatives.

B.16 What distinguishes this Application from previous similar applications is the fact that there are indeed serious reasonable technological alternatives that presently exist, and which have become and which are as much a constituent part of this hearing process, as the various route selection choices were to the CHB in # 85-03, being a decision made about the location of a major 500 KV transmission line built in Ontario in the late 1980's, about 20 years ago.

B.17 As the CHB has set the benchmark protocol for the evaluation of the *'undertaking'* of HONI, the *'alternative methods for the undertaking"* and the *"alternatives to the undertaking'* and which protocol evaluation methodology has been approved by the Divisional Court of Ontario and the Court of *Appeal of Ontario*, as a universal manner of appropriate evaluation then common to all four pieces of legislation,(which hearing processes were then consolidated), it is only now proper, fitting and lawful that those evaluation parameters be now applied by this Board in its evaluation of this Discretionary Development Project, the preferred option, as set out in the subject Application.

B.18 The ***California Public Utilities Commission, ("CPUC"),*** is presently involved with a similar 500 KV Transmission Line Project , (***San Diego Gas & Electric Company's Sunrise Powerlink Project,*** Applications A.05-12-014 and A.06-08-012), which involves a construction distance of approximately 100 miles of 500KV and 60 miles of 230KV. CPUC hearings for transmission lines normally involve a routing choice from several alternatives with reference to the *California Environmental Quality Act* ('CEQA'), and the *California Public Utilities Code*, ('*C. Code*'). These hearings have now been transformed into a proceeding that also now involves the consideration of the choices of technological alternatives for the CPUC, a factor that was not originally contemplated under its *C. Code*. The *CPUC* is now liberally interpreting the *C. Code* to allow it to be applied to new fact

situations involving consideration and choice of new alternative transmission technologies.

B.19 The operative extracted parts of the *C. Code* are set out below:

Rule 1001 **No . . . electrical corporation . . . shall begin the construction of . . . a line, . . . or of any extension thereof, without having first obtained from the commission a certificate that the present or future public convenience and necessity require or will require such construction**

Rule 1002.3 **In considering an application for a certificate for an electric transmission facility pursuant to Section 1001, the commission shall consider cost-effective alternatives to transmission facilities that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultra clean distributed generation, as defined in Section 353.2, and other demand reduction resources**

Rule 1003. **Every electrical . . . corporation submitting an application to the commission for a certificate authorizing the new construction of any . . . line, or extension, . . . , not subject to the provisions of Chapter 6 (commencing with Section 25500) of Division 15 of the Public Resources Code, shall include all of the following information in the application in addition to any other required information:**

(a) **Preliminary engineering and design information on the project. . . . , and the . . useful life of the . . . line, or extension.**

(b) **A project implementation plan showing how the project would be contracted for and constructed. This plan shall show how all major tasks would be integrated and shall include a timetable identifying the design, construction, completion, and operation dates for each major component of the plant, line, or extension.**

(c) **An appropriate cost estimate, including preliminary estimates of the costs of financing, construction, and operation, including fuel,**

maintenance, and dismantling or inactivation after the useful life of the . . . , line, or extension.

(d) A cost analysis comparing the project with any feasible alternative sources of power. The corporation shall demonstrate the financial impact of the . . line, or extension construction on the corporation's ratepayers, stockholders, and on the cost of the corporation's borrowed capital. The cost analyses shall be performed for the projected useful life of the . . . , line, or extension, including dismantling or inactivation after the useful life of the . . . line, or extension.

(e) A design and construction management and cost control plan which indicates the contractual and working responsibilities and interrelationships between the corporation's management and other major parties involved in the project. This plan shall also include a construction progress information system and specific cost control.

Rule 1003.5. Every electrical . . . corporation submitting an application to the commission for a certificate authorizing the new construction of a . . . line, or extension,, . . . shall include in the application the information specified in subdivisions (b), (c), and (e) of Section 1003, in addition to any other required information. The corporation may also include in the application any other information specified in Section 1003

B. 20 These Intervenors therefore submit that this Board should be as forward looking as possible and should adopt the reasoning of the Divisional Court of Ontario, as approved by the Court of Appeal of Ontario, to actively consider the technological alternatives that have been placed before your Board for its consideration, and to consider them in the same manner and with the same weight that the CHB considered the alternatives in File No. # 85-03.

B.21 These Intervenors submit that this Board should be prepared to consider all relevant alternatives in its evaluation review process.

B.22. These Intervenors submit that just because HONI has not provided an appropriate full canvas of the technological alternatives that are otherwise available to manage the transmission of the forecast power to come from the Bruce, including cost/benefit analyses thereof, that should not in any way diminish the Board's role to seek out and understand what those alternate technologies might otherwise be and to evaluate the cost/benefits thereof.

B. 23 What this Board fortunately still now has is *"time"* - *'time'* to allow this Board to demand from HONI , that it still cause the presentation, in an objective manner, of further cost/benefit analyses of all reasonable alternatives, with supporting justification for those estimates, time lines set forth and such additional detailed information that your Board may require to allow it to make a fully explained and final decision thereon.

B.24 Notwithstanding the suggestion by HONI that the EA process is fully in step with the OEB process, a stated fact which this Board has appeared to notionally accept as being correct, despite the representations of many Intervenors to the contrary, the EA Review team has advised that the EA review process will take 30 weeks from about April 1st, 2008 and that thereafter the Minister will make a decision, and which decision will not be handed down until at least November 15th, 2008 .

B.25 These Intervenors submit that there is every prospect that an appeal will be made to the *Environmental Review Tribunal* from the decision of the Minister within his 30 week review period as there are current challenges in respect of present HONI preferred corridor routing choices in respect of which HONI will not presently so agree.

B.26 Additionally theses Intervenors submit that the provisions of the *Niagara Escarpment Planning and Development Act* require a 'development permit' to issue to HONI before an entry can be made upon NEC controlled lands to construct a new 500 KV Line, and that this Board will not be able to render a final decision without such a development permit. Should

the NEC refuse to grant such a permit, this Board is powerless, under the *NEPDA* to finalize any interim Order it may otherwise have made, a process which Mr. Schneider of HONI indicated in evidence that was not even started and would not be submitted until the summer of 2008.

B.27 These Intervenors therefore further submit that as the objects of this Board require it, by Statute, **to protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service**, during the Board's evaluation of this Application, that such an evaluation cannot be considered complete without an examination by the Board of the project alternatives that are brought to the attention of the Board during the course of this hearing. (Certain of those alternatives proposed by HONI include at least 4 other corridor routing alternatives, set out in Exhibit "B", Tab 3, Schedule '1'). However the Intervenors have set out several and more cost effective technological alternatives for consideration by this Board. Each of those alternatives warrant the Board's considered evaluation through the filters of the above stated statutory '*objects* 'required of the Board by the Legislature of this Province.

PART 'II'

APPLICATION ISSUES

C. Transmission Project

Transmission Project Description

C..1 HONI made its Application to the Board on March 29th, 2007, and which is fully described in Clause 2 on page 1 of Exhibit A, Tab 1, of Schedule 1, in the Pre-filed Evidence of HONI.. The general location of the proposed 500KV Transmission Corridor is set out in Exhibit B, Tab B, Schedule 2. HONI indicated (in paragraph 6 of Page 3 of Exhibit A, Tab 1, Schedule 1). That the Application is supported by written evidence which includes details of the Applicant's proposal for a new transmission line reinforcement, and that the evidence was prepared allegedly consistent with the Board' Filing Requirements for Transmission and

Distribution Applications (EB-2006-0170). A Summary of the Pre-Filed Evidence was set out at Exhibit 'A', Tab 2, Schedule 1, p 1-5.

Transmission Alternatives Considered:

C.2 HONI set out, (at Exhibit B, Tab 3, Schedule 1), the various Transmission Alternatives considered by it.. HONI indicated that the OPA recommended some *near-term* measures on the Bruce to Hanover 230KV Line and the possibility of installing series compensation facilities on the 500 KV Line from Bruce to Longwood and Longwood to Nanticoke.

C.3 HONI described those projects as "Interim - Near Term" measures until a 500 KV line was built by December 2011 from Bruce to Milton.

C.4 HONI has stated that the Board's Filing Requirements, (EB - 2006-0170) & (Rule 5.3.2 on *Costs and Benefits Analyses* found on page 35 thereof), require the Applicant to present to the Board "*the smallest number of alternatives consistent with conveying to the Board the major solution concepts available to meet the same objectives that the preferred option meets"* and to *"compare the alternatives versus the preferred option along various risk factors.".*

C.5 However HONI failed to continue with the final words of that Rule which in the whole states as follows: and to *"compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project* "

C.6 If determined by this Board to be a "*Non-Discretionary*" Project, the Rules (5.3.2) require that:

> **"In the case of a non-discretionary project, the preferred option should establish that it is a better project than the alternatives. The Applicant need not include "doing nothing" as an alternative since this alternative would not meet the need."**

C.7 These Intervenors re-submit that if determined by this Board to be a "Discretionary" Project the Board, by lawful deduction, has the liberty and authority not to approve the Proponents preferred option, and as approved by the above mentioned Ontario decision, to recommend an alternative option based upon an evaluation of the project need and costs analyses of each of the other alternative options when compared to the preferred option.

C.8 With a "Discretionary" project the Board can determine not to approve the preferred option of the project proponent, merely on the price disadvantage to the consumers of that preferred option, alone, if the Board were to otherwise conclude that the ***adequacy, reliability and quality of electricity service*** of another alternative preferred by the OEB, was otherwise the same.

Examination of Other Alternatives Considered

C.9 HONI advised the Board, on page 3 of Exhibit B, Tab 3, Schedule 1, that the "Do-Nothing" Alternative was not considered as the Project was a "*Non-Discretionary Project*" . With due respect this was NOT a determination for HONI to make, but is for the Board to make, and in fact this issue was reserved to the Board on the Issues List. Such determination by HONI was, in the opinion of these Intervenors, calculated to diminish the role and jurisdiction of the Board to make such a determination.

C.10 HONI listed 5 other *Transmission Alternatives Considered'*, (on pages 4-6 of Exhibit B, Tab 3, Schedule 1) , the first four (4) of which were 4 different route choice transmission corridors, each starting at the Bruce and ending at four different locations (1) Essa in Simcoe County - 190 KM); (2) Kleinburg in York Region - 190 KM); (3) Crieff near Guelph in Wellington County - 150KM); and (4) Longwood near London - 190 KM, and on to

Middleport near Hamilton - 150KM). This Board, in its decision out-flowing Motions day in June of 2007, indicated that it would not consider route selection or alternatives, leaving that aspect of the overall process to the review processes of the *Environmental Assessment Act, (EA Process).*

C.11 These Intervenors suggest to this Board that their decision not to evaluate any route selection considerations, and deferring it to the *EA Process* leaves the consumers of Ontario stranded, without any advice about the costs associated with each such route alternatives, and the costs savings or excesses associated with each of those four route alternatives, as well as a determination as to whether or not the adequacy, reliability and quality of electrical service would be enhanced or lessened by any one of the alternate transmission route selection choices.

C.12 These Intervenors submit to this Board that neither EA Process nor the NEPDA Process generates any such similar evaluation of the cost comparison to consumers for the various alternatives considered for various route choice alternatives, nor for an evaluation comparison of the adequacy, reliability and quality of electrical service of each alternative.

C.13 These Intervenors submit that the previous process of project evaluation undertaken in the mid 1980's by the CHB was adjusted by legislation in the 1990's by separating the combined considerations into three categories, project need under the OEB Act; environmental issues under the *EA Act*, and land acquisition under the *OEB Act,* with associated land compensation damages determined under the *Expropriation Act.*

C.14 These Intervenors submit that it was never the intention of the Legislature of Ontario to permit the cost comparison evaluations between other alternatives to be considered by any forum other than the Board, nor to evaluate and consider the adequacy, reliability and quality of electrical services.

C.15 These Intervenors submit that the electrical consumers of Ontario are entitled to look to this Board to determine cost /benefit analyses for ALL reasonable alternatives to the preferred option of HONI, in order that those consumers may fully understand the rational of the Board and its cost/benefit analyses of these reasonable alternatives through the object filters of the Board, both as to alternative route choices and to alternative technology choices, particularly when no other statutory authority has been given the specific statutory mandate to look at those alternatives for the benefit of these consumers.

C.16. These Intervenors submit that they have been made to suffer an administrative unfairness as HONI has been allowed to submit to this Board four alternate transmission route considerations in Exh B Tab 3, Sched 1, with unsubstantiated statements within each alternative route description set out therein, as to what were the technical and/or cost reasons of HONI for objecting to and not selecting any of those other four route alternatives, and then for these Intervenors to be denied, in the oral phase of these hearings, an opportunity ask questions of HONI in respect to any of the other four route alternatives considered.

C.17 The Filing Requirement Rules (5.3.2) state that: **'the applicant is expected to also compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project".** HONI has not provided any such cogent details with respect to the 4 other route alternatives considered, and the Intervenors have been declined permission to cross examine on alternative route selection issues.

Alternative Technology Considered.

C.18 The only alternative technology considered by HONI was set out as item # 5 on Page 6 of Exh. B, Tab 3, Schedule 1, and was the construction a new 500 KV Transmission Line from Bruce to Milton, but conductored in Direct Current ("DC") rather than Alternating Current

("AC"). It consisted of only 11 lines on the page with a completely unsubstantiated cost estimate of $1.5 to $2 Billion dollar cost, or triple the estimated costs for the preferred option.

C.19 The *California Procedural Rules* make specific reference to the cost comparison that the Administrative Judge of the *California Public Utilities Commission* is required to make in reviewing the proponents preferred option to the alternatives. Rule 1002.3 & Rule 1003 (c) & (d) provide as follows:

Rule 1002.3 **In considering an application for a certificate for an electric transmission facility pursuant to Section 1001, the commission shall consider cost-effective alternatives to transmission facilities that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultra clean distributed generation, as defined in Section 353.2, and other demand reduction resources**

Rule 1003 Every electrical . . . corporation submitting an application to the commission for a certificate authorizing the new construction of any . . . line, or extension, . . . , not subject to the provisions of Chapter 6 (commencing with Section 25500) of Division 15 of the Public Resources Code, shall include all of the following information in the application in addition to any other required information

(c) An appropriate cost estimate, including preliminary estimates of the costs of financing, construction, and operation, including fuel, maintenance, and dismantling or inactivation after the useful life of the . . . , line, or extension.

(d) A cost analysis comparing the project with any feasible alternative sources of power. The corporation shall demonstrate the financial impact of the . . line, or extension construction on the corporation's ratepayers, stockholders, and on the cost of the corporation's borrowed capital. The cost analyses shall be performed for the projected useful

life of the . . . , line, or extension, including dismantling or inactivation after the useful life of the . . . line, or extension.

C.20 These *California Procedural Rules* are not dissimilar to Rule 5.3.2 of the OEB Filing Requirements which provide that **"the applicant is expected to also compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project."** The evidence in support of need as required by Rule 5.3.1 of the OEB Filing Requirements further provides as follows: **"The evidence will likely consist of written material prepared by the customer or agency specifically addressing the proposed project, and the customer or agency must be prepared to provide witnesses to support the filed evidence if an oral hearing is held. It is not sufficient for the applicant to state that the customer or agency has established the need for the project; the Board must be able to test that assertion"**

C.21. It would therefore appear that in the State of California the Administrative Judge must consider *'cost effective alternatives to the transmission facilities'*, while similarly in Ontario the OEB Rules similarly so provide that the Board *'must compare the alternatives versus the preferred option* in respect to *various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project'.*

C.22. In *California the Rules* require the Project Proponent to supply **"a cost analysis comparing the project with any feasible alternative sources of power"** while in Ontario the Rules provide that **" the applicant is expected to also compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project "** Both requirements are almost the same.

C.23 These Intervenors submit that this Board must therefore make a considered determination as to whether HONI has satisfied its obligations under the Rules to make the comparative financial analyses with respect to each alternative, including route alternatives, and including the preferred option, in order that this Board can be seen to have fully carried out their statutory mandate for the benefit of Ontario electrical consumers **"to protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service."**

D. The Phantoms of the Opera-tions:

Where were the Generators ?

D.1 Totally conspicuous by their absence were the Generators in this hearing who might otherwise benefit by any approval of this s. 92 Application. This hearing was about transmitting generated electricity from the Bruce Area to the GTA in an adequate, quality and reliable manner in the most cost effective way.. The Generators in the Bruce catchment area, (the Orange zone), included all of the present and potential wind generator owners, Bruce Power LPP, as lessee of the Bruce GSS facilities otherwise owned by OPG, and OPG, as owner of the Bruce GSS, and owner of the renewable hydro electric generation station at Eugenia, and the coal fired generators at Nanticoke on Lake Erie, (the "Generators").

D.2 None of those Generators requested to attend and give evidence before this Board in these proceedings, and never produced any direct evidence that was admitted by HONI into evidence, other than evidence produced through Intervenors, such as the Bruce "C" New Build application attached at **Tab "7"** to the Pre-filed evidence of the Ross Law Firm Group of Intervenors and the Fallis Group of Intervenors, Evidence (Part '2')..

D.3 The failure of any of the Generators to testify, whether by their design or neglect, or by the strategy of HONI, has left this Board with only '*hearsay*' evidence only about past generation histories, about forecast nuclear generation potential from each of the Generators, and specifically *hearsay* evidence of HONI and the OPA as to the forecast dates of Bruce Power LLP for the retirement and/or refurbishment of each of the present four nuclear units within Bruce 'B' namely Units 5, 6, 7 and 8.

D.4 The *'Bruce Power New Build Project, Environmental Assessment Project Description'* to the CNSC filed January 2007, and located at **Tab "7"** of the Pre-Filed Evidence, (Fallis & Ross Intervenor Groups (Part), contained a statement of Bruce Power on Page # 3, at Clause 2.4 wherein Bruce Power stated:

> **"As shown in *Figure 2*, once the refurbishment at Bruce "A" is complete in 2010, Bruce Power can be expected to generate up to 6,200 MW at the Bruce Power Site. The Bruce "B" Station, which generates 3,200 MW, could require a mid-life refurbishment commencing in 2014. In addition, one reactor at Bruce "A", (Unit 4) could also require refurbishment within the time of the Bruce "B" refurbishment. *Figure 2* shows that approximately 4,000 MW of generating capacity at the Bruce Power Site will require refurbishment or replacement by the middle of the next decade in order to maintain the site output at 6,200MW. The Project is designed to provide this electricity from a new 4,000MW nuclear power station. An environmental assessment of the effects of the continued operation of the Bruce 'B' station through approximately 2040 was completed in 2004 (Bruce Power, 2004)"**

D.5. *Figure 2* is found immediately following p. 5 of that *'Bruce Power Project Description'* and should be studied closely by this Board .It reveals the intention of Bruce Power to remove from service one of 5 nuclear units a year from Bruce 4-8 starting January 1, 2015 to January 1, 2019 which would be the subject of refurbishment if approved by the CNSC and by the Minister of Energy

D.6 From the evidence of the IAEA on the *Operating Experience of Bruce Units 1-8*, procured by Mr. Brill of SEA Limited after these Intervenors were stone-walled by HONI from receiving such historic generation evidence, (found aT Tab 2 of the pre-filed evidence of these Intervenors), the start dates of Grid Connection and dates of Long Term Shut down of each of the 8 Units was determined as well as the years of service of the 8 Units. That information is summarized as follows: *(See Appendix '1' attached hereto)*

	GRID CONNECTION	**LONG TERM SHUTDOWN DATE**	**YEARS IN SERVICE**
1	Jan 14, 1977	Oct. 16, 1997	20.75 years
2	Sep. 4, 1976	Sep 1, 1977	20.00 years
3	Dec 12, 1977	? , 1998	20.00 years
4	Dec 21, 1978	? , 1998	19.00 years
5	Dec 2, 1984	— 0 ----	23.50 years
6	Jun. 26, 1984	— 0 ----	24.00 years
7	Feb.22, 1986	— 0 ----	22.40 years
8.	Mar. 9, 1987	— 0 ----	21.25 years

* Unit # 3 was refurbished and restarted in 2004
** Unit # 4 was refurbished and restarted in 2003

D.7 As the IAEA is the world's nuclear authority and records all of the relevant information on 439 reactor units worldwide, excluding 6 in Taiwan, and one in North Korea, *(See Tab 2- The Pre-Filed Evidence of these Intervenors),* we submit that the Board must accept the IAEA evidence in preference to *hearsay* evidence produced under the duress of an Order of this Board, particularly when HONI did not attest to the accuracy of the historic information it produced, allegedly from Bruce Power LLP, and which information only went back to 1984 and not to the inception of each of the nine reactors, including the Douglas Point reactor.

D.8 The IAEA history discloses that Bruce "A" Units 1-4 had a working Life of about 20 years, and that Bruce "B" Units 5-8 now have a working life at present of about 21 to 24 years. In

other words Bruce "B: units appear now to be at the very end of their respective working lives, and according to Bruce Power require refurbishment, or replacement by a Bruce "C"

D.9 Bruce Power took from 1998 to 2003 to refurbish Bruce Unit # 3 (5 years). It started refurbishment in October 2005 for units 1 & 2 and plans to have it completed by 2010 or 5 years later.

D.10 If it takes 5 years to refurbish one nuclear reactor unit, then the earliest date the first Unit to go off line for refurbishment, according to Figure # 2 of the Bruce Rebuilt document, will be January 2015, (which would put the oldest Unit of Bruce "B" - Unit 5 at an age of 30 years (10 years beyond its expected working life)

D.11 That means that from January 1, 2015 until 5 years after the last refurbishment of the fifth Reactor, (most likely Unit #4 - first refurbished and re-started in 2004), that the 8 Units of Bruce "A" and "B" would not be all operational again until January 1, 2024.

D.12. For HONI, the OPA and IESO to say that 'Series Compensation' can only be considered an interim measure until the new Transmission line is built, mis-speaks the reality that Bruce Units 1-8 will only work together for 3 years before Bruce Units 4-8 start to be de-commissioned for refurbishment in 2015 according to Bruce Power LLP information.

D.13. These Intervenors submit that this Board cannot ignore the fact that on Monday June 16th, 2008 the Minister of Energy for Ontario announced that the Government of Ontario had selected the Darlington Site to build two new reactor units.

D.14 These Intervenors submit that the Bruce "B" refurbishment of Units 5-8 is most urgent and critical, ought now to commence as soon as possible, and that the apparent delay in that undertaking was to allow for the EA approval by the CNSC for start of the Bruce "C" New Build in 2010 and a 5 year construction period thereafter

D.15 These Intervenors submit that in reality the refurbishment steps for Bruce "B" Units 5-8 should start immediately, and that when Units 1 & 2 come on line the refurbishment of Bruce Units 5-8 should follow immediately thereafter, in an orderly fashion in order to avoid risk of catastrophic failure of any one of these 4 units due to the fact that they are now operating well beyond their anticipated 20 year life span. This refurbishment falls squarely under the objects of this Board **"to protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service"**.

D.16 These Intervenors submit that a reactor that is operated beyond its working life span is a risk to the quality and reliability of service, and if condemned by the NSCC for further use, or suffers a catastrophic event, *ignoring any associated health risk to station workers or the public*, the adequacy and quality of electrical supply and the cost of alternate electrical procurement will very much negatively effect the electrical consumers of Ontario who will be required to pay for that additional supply or suffer from power loss failures that could otherwise have been avoided with a previous planned and programmed de-commissioning.

D.17 These Intervenors submit that the '*hearsay*' evidence of Mr. Bob Chow, OPA Engineer, during cross-examination upon HONI's introduction of a chart presented to the Toronto Board of Trade by the CEO of Bruce Power, relaying to the Board what Bruce Power officials apparently told him as to the working life span of each of the Bruce "B" reactors, cannot possibly be relied upon by this Board as being sufficiently accurate to accept a further 5 year delay beyond 2015 before decommissioning would start and the 5 year refurbishment of each of Units 5-8 of Bruce "B" would begin. Only the evidence of the Bruce Power or a qualified expert in nuclear generation risks ought to be otherwise accepted by this Board, and no such evidence was presented to this Board by HONI, or through HONI. The electrical consumers of Ontario have every right to expect direct evidence from Bruce Power LLP and/or other knowledgeable experts that the adequacy, quality and reliability of their electrical services will not be imperiled by the attempt by Bruce Power to extend the working

life of each of their Bruce "B" reactors beyond the reasonable time limits before such logical de-commissioning takes place.

D.18 Bruce Power LLP leases the Bruce GSS facilities from OPG, which lease runs to 2018 and then ends, unless it exercises its option to renew the lease. Extending the time to start de-commissioning of those 4 Units could have the effect on its business decision as to whether or not to renew its lease with OPG, leaving all refurbishment costs to the Lessor, OPG, if Bruce Power LLP should choose not to exercise its option to renew. Again the electrical consumers of Ontario have been denied an opportunity to test these refurbishment issues under cross-examination of Bruce Power witnesses, as has this Board, by the failure of HONI to follow the Rules of this Board, (Rule 5.3.1), which requires specifically that: ***" It is not sufficient for the applicant to state that the customer or agency has established the need for the project; the Board must be able to test that assertion ".***

(Emphasis added)

D.19 Mr. Chow was unable to withstand the vigorous impeachment of that Bruce Power chart evidence introduced by HONI as an exhibit through him, as he was obviously uniformed or under-informed by *hearsay*, and was not authorized or sufficiently informed to address the inaccuracies of the overhead graph/chart. That Chart added the Bruce "C" New Build of 4,000MW to a Bruce "B" refurbishment of 3,400MW which, when added to Bruce "A" generation capacity of 3,000 would collectively, (Bruce 'A', Bruce 'B' and Bruce 'C' New Build), generate up to10,400 MW of the maximum 14,000 MW that the Minister restricted to be generated from all nuclear reactors in Ontario.

D.20 Mr. Chow was confronted with these facts and was unable to explain away the calculation that such a generation of 10,400MW from the Bruce Nuclear Facilities would leave only 3,600 MW to be generated from the combined Pickering "A', "B' and Darlington Nuclear facilities, (and now apparently additionally including two new Darlington reactors of 1,000 MW each), to accord with the Minister's nuclear generation limits of 14,000 MW, and which

3,600MW excess nuclear capacity is much less than the current MW generation production from either of those facilities.

D.21 The Overhead Power Point Chart of Bruce Power also set out refurbishment - return to service - dates for the 4 Units (5-8), but made absolutely no allowance for the 5 year lead time from de-commissioning of a unit to its completed refurbishment. Mr. Chow admitted under cross-examination that the Chart was inaccurate and he could not agree with the accuracy of information thereon.

D.22 Absence of accurate and well substantiated evidence should not be used to justify this Application by HONI. Rather such absence should be cause for this Board to decline to approve this '*discretionary development project*' for which and from whom Leave to Construct is sought from this Board..

D.23 These Intervenors wish to again remind this Board of the fullness of one of its main rules in 5.3.1 of the Filing Requirements:

> **"The evidence will likely consist of written material prepared by the customer or agency specifically addressing the proposed project, and the customer or agency must be prepared to provide witnesses to support the filed evidence if an oral hearing is held. <u>It is not sufficient for the applicant to state that the customer or agency has established the need for the project; the Board must be able to test that assertion</u>".**
>
> **(Emphasis added)**

D.24 This attempt by HONI, to launder a chart presented by Bruce Power LLP to the Toronto Board of Trade as an accurate statement by Bruce Power LLP that this Board ought to accept as a fact, underscores the very reason for the above Rule. The Board and the Intervenors were unable to test the assertions alleged to have been made by Bruce Power LLP, as presented through a witness of the OPA, Mr. Chow, who was unable to defend the information set out on that Chart. This Board should make a specific comment of concern in its reasons about

this overt attempt by HONI to launder *'hearsay'* material as cogent evidence in support of its Application.

D.25 These same remarks apply to the receipt into evidence by the Board of the internal letter between the Chair of the NPCC with an NPCC Committee Chair, Mr. Sabiston (also of HONI), who admitted in cross-examination that he did not have authority from NPCC to tender that internal letter to this Board, and that it was not received by him in his HONI capacity. Such evidence was effectively '*hearsay*' presented to this Board before the full Committee of NPCC has met to consider the recommendations contained therein, and which full Committee meeting is, apparently, unlikely to be held before the fall of 2008. HONI has attempted to elevate the latest internal letter communications between NPCC members to be NPCC policy, by having it introduced as an Exhibit in this hearing, (a process which, unless reconsidered by this Board will have been the equivalent of turning 'water into wine' - 'iron into gold, [an alchemist's dream !],).

D.26 These Intervenors submit that a new 500KV transmission line DOES NOT MAKE Bruce "B" Units 5-8 any more robust or youthful. They submit that the preferred option, the 500KV Transmission line, is being used as an effective smoke screen to deflect concern from the very real risk at the Bruce, namely the potential failure of any of the existing 4 nuclear reactors which are now well past their 20 year working life and which are being kept alive and working to justify a new 500 KV line by 2012, when those 4 Units (5-8) should NOW start to be decommissioned so that an orderly refurbishment can and should immediately get underway.

D.27 These Intervenors submit that series compensation, as more particularly described within the submissions of SON and Pollution Probe, should be undertaken NOW so that the orderly refurbishment of Units 5-8 at Bruce "B" can get underway, which will take 8-10 years to fully complete, and during which time generation capacity from the nuclear units at the Bruce GSS will be reduced to as low as 3,000 MW at the lowest point of generation during the refurbishment process.

PART 111

FAILURE TO FULLY CONSIDER ALL REASONABLE ALTERNATIVES

E. TECHNOLOGICAL ALTERNATIVES

Series Compensation - FACTS Technology:

E.1 HONI has indicated it would only consider "Series Compensation" as an ' Interim Measure" alternative until the in-service date of the completed preferred option, namely a 500 KV Transmission line between Bruce GSS and the Milton Transformer Station, which it wants to complete before December of 2011.

E.2 The costing of the Series Compensation steps recommended for completion as an Interim measure were not set out in the Pre-Filed evidence of HONI, (Exhibit B tab 4 Schedule 2). On May 1, 2008, (Day '1' Transcript), Mr. Pappas, in cross-examination, was able to extract from Mr. Sabiston of HONI, an admission to having prepared what he called a "*Working Paper" setting out costs for conceptual alternatives to the new Bruce transmission line*" eventually filed as Exh. 'J1.1, (page 1-2), on May 2nd 2008, (attached as Appendix '5' hereto).

E.3 On further cross-examination on Day'2' at Orangeville, (May 2nd, 2008), it was discovered that the "*Working paper*" was only prepared by Mr. Sabiston on April 24th, 2008 in response to Intervenor pre-filed evidence filed by April 10th, 2008. Items 1 & 2 on the above *"Working Paper"* estimated costs for " series capacitor installations" at $265 Million for the Bruce to

Longwood Line and $180 Million for the Nanticoke to Longwood line, a total of $445 Million. No break down justification comparisons, nor supporting estimates, whatsoever, were produced by HONI to substantiate these bald estimates by that HONI witness.

E.4 SON's expert has estimated that the installation costs for series capacitor installations to be 1/6th of the estimated cost of this project at $635 Million or under $120 Million, a very substantial savings indeed which will protect the consumer of Ontario from an untoward expenditure that would not be needed, as the series capacitor installations have been determined by SON's expert, and previously by the IESO, in its 2006 - 2015 *'10 year Outlook'*, to be capable of being installed, thereby avoiding the need for a new transmission line.

E.5 The Board's Filing Requirements mandate that **"the applicant is expected to also compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project"**

E.6 These Intervenors submit that this Board can only make but <u>one determination</u> in respect to this reasoned alternative, suggested initially by the IESO, by Pollution Probe, by Mr. Pappas, and also by SON, namely that series capacitor installations would fully substitute for the need of the new transmission line. IESO has never denied that such installations would satisfy transmission capabilities out of the Bruce.(See the IESO - *'10 year Outlook' - 2006*).

E.7 These Intervenors submit that this Board must find that HONI as Applicant <u>DID NOT</u> compare this series compensation alternative to the preferred option of HONI, and nor to compare the cost benefits analysis of each. These Intervenors submit that this Board is being requested by HONI to make a judgment decision on the Application in the absence of cogent financial information and sufficiently detailed technical information which HONI was, by

the Board Rules, mandated to provide to the Board but which HONI has failed to do so in a reasonable fulsome manner.

E.8 This Board should therefore decline to approve the Application of HONI at this time because of its determination that Series Compensation Installations are a reasonable alternative for consideration by the Board, of which HONI has been made aware since the technical conference of Oct 15-16, 2007, and about which the Board and the electrical consumers of Ontario have not been supplied by HONI with sufficient comparative information to allow the Board to make a full and complete determination thereon for the benefit of the consumers of Ontario who are entitled to receive the Board's written assessment evaluation on this reasonable alternative.

E.9 These Intervenors state that it is the prerogative of the Intervenors to raise and put forward to the Board additional reasonable alternatives to the preferred option of the Applicant, but it is for the Applicant HONI, not the Intervenors, by Board Filing Rules, to provide to the Board the technical information and costings in respect thereto, and this Board should clearly so state this in its reasons. The Intervenors are not privy to the specific confidential technical requirements which would have to be known by them to carry out costing estimates.

High Temperature Low Sag ("HTLS") Conductors:

E.10 The existing conductors used on the three existing 230 KV Transmission Lines and two 500 KV Transmission Lines which all evacuate power from the Bruce GSS are old type conductors, ASCR, which have been utilized in the past by the Hydro Electric Power Commission, and Ontario Hydro in the construction of those Transmission Lines. HONI proposes to use the same type of conductors for the new Lines, namely 585kcmil, (See Table 5m Exh. B, Tab 4, Sched. 2), which is the exact same conductor type used in the early 1990's by Ontario Hydro on its last three 500KV Lines, (in service dates July 1990 to November 1994)

E.11 The existing Thermal Limits (Temperature Rating) for those 5 lines were set out in Exh. C, Tab 4, Schedule 12, p. 4), as follows:

Line Voltage	Line Description	Conductor Type	Temp. Rating
230 KV	- Bruce to Hanover/Orangeville	ACSR	127 /104 Celsius
230 KV	- Bruce to Owen Sound	ACSR	140 "
230 KV	- Bruce to Detweiler	ACSR	150/120 "
500 KV	- Bruce to Milton	ACSR	127/127 "
500 KV	- Bruce to Longwood	ACSR	127/104/127 "

E.12 The problem with ACSR conductor technology is that this Conductor type has been utilized since 1907 and has a steel core which expands as the line heats up. The capacity of transmission lines is determined by its temperature Limits. If exceeded, conductor equipment can be damaged or destroyed. When a line heats up the metal expands and the line sags. Excess sag can cause metal to lose tensile strength due to annealing, after which it will not shrink back to its original length . (See United Nations Report - *'Multi-Dimensional Issues in International Electric power Grid Connections'* - 2005 - found at Tab2, Pappas Evidence Book 1, p. 2 - 3).

E.13 The NPCC requires its member transmitters and system operators to utilize *'good utility practices'* in carrying out its mandates in the delivery of electricity. Since the early 1970' s the installation of 'HTLS' conductors has been fully recognized throughout North America and other parts of the world as *'good utility practice"* in the transmission of electrical energy.

E.14 These 'HTLS 'conductors are manufactured by various companies such as Alcan and 3M and others and have very unique and advantageous properties that facilitate load congestion problems associated with old style ACSR technology which, in principle, is over 100 years old, and is still, in 2008, being proposed by HONI for a new 500 KV Transmission Line that Mr. Sabiston, (HONI Engineer), stated in his evidence should last 100 years.

E.15 The 'HTLS' conductor manufactured by Alcan consists of annealed aluminum steel supported with trapezoid cross section conductor wire (ACSS/TW), which is commercially available, can operate at 200 Celsius, carry 100% more current that ACSR, reduces line losses at normal loads, and can be handled as normal ACSR conductor wire.

E.16 3M manufactures an Aluminum Conductor Composite Reinforced, (ACCR), which costs from 5x to 8 x the cost of ACSR conductor, but increases the thermal capacity from 150% to 300 % and has thermal limits in the range of 240 Celsius, and can carry twice the capacity or more of a normal ASCR line which is now still proposed by HONI.

E.17 CTC's Aluminum Conductor Composite Core (ACCC) which is also configured into a trapezoid wire has an expected 3x to 5x cost increase over conventional ASCR conductor technology with a 100 % transmission capacity increase.

E.18 The facts described in E.14 - E.17 above are taken from the evidence filed at the hearing at Tab 1 of Book 1 of the Pappas Evidence, as filed, entitled *"San Diego Smart Grid Study Final Report"* dated October 2006 found at p. 48 therein.

E.19 Filed as Part One (1) of the Evidence of the Fallis Group of Interveners and the Ross Law Firm Group of Interveners was a two (2) Volume large binder set containing in excess of 1,500 pages containing all of the tests and results of the ACCR technology as submitted to various labs in North America fully testing and analyzing the ACCR technology in the early 2000 - 2005 period which were described by Mr. Brill in his testimony on June 11th, 2008. The Board however intervened during his examination in chief to indicate that it had already heard sufficient ACCR evidence earlier in the hearing and Mr. Brill was unfortunately not permitted to expand upon the advantages of that technology on transmission congestion issues, and the various installations of that ACCR technology throughout Canada and the U.S.A. which has allowed it to be recognized as a 'good utility practice'.

E.20 Suffice it to say, that the HTLS technology advantages, as presented in this Hearing, cry out for recognition by this Board, and ought to be described by this Board to the electrical consumers of this Province as a reasonable alternative, (and "good utility practice"), which this Board has determined to require to HONI to present cost/benefit analyses in order to compare it with the preferred option of HONI. Those HTLS technology advantages include the following:

1. The ACCR conductor weighs only 85% of the weight of equivalent ACSR conductors and therefore has lower weight and tensile constraints on steel lattice towers.

2. The HTLS conductor can be utilized on existing towers in existing corridors by re-conductoring the existing towers with new HTLS conductors, without any requirement for a new set of transmission towers, and thereby eliminating any further need for additional land acquisition for new towers, without the need of OEB or Environmental Assessment approvals, as the installations would only be considered maintenance not requiring leave by this Board or approval under the *Environmental Assessment Act*

3, 500 KV HTLS Conductors may also be capable of being strung on 230KV towers without risk of excess sag, or alternatively would not require taller lattice towers such as the existing 500 LV Line because of the low sag properties of the HTLS conductors, thereby resulting in substantial cost savings to consumers.

4. A conversion, in an orderly fashion over a long time, (10-15 years,) of existing ASCR conductors, to HTLS conductors, would expedite the resolution of congestion load problems and risks, as twice as much power as is presently evacuated and transmitted out of the Bruce could be carried out on the existing

tower networks, with an ability to transmit 100 % more energy on the present tower grid system.

E.21 These Intervenors submit that the HTLS conductors are an alternate technology that is recognized outside of Ontario, also utilized in British Columbia, [*see Supplementary Evidence of the Fallis Group of Intervenors - (Part 3)* , Section 2, p. 9-11, filed June 11th, 2008]. This conductor technology is recognized by the NPCC and other North American coordinating councils,and other electrical system operators in many other jurisdictions have fully recognized HTLS conductors as '*good utility practice*' which many have implemented and which the NPCC encourages to be utilized.

E.22 When HONI received the massive two Volume binders containing over 1500 pages of test reports on the 3M ACCR conductor technology, Mr. Pappas, on Day One (1) of these Hearings, on May 1st, 2008, extracted an admission from HONI Engineer panelist, Mr. Sabiston, (and an Undertaking J1.1 to produce the same), that HONI had done a study on ACCR technology, and that HONI had costed the conductoring on the Bruce to Longwood to Nanticoke 500 KV Lines at a total of $325 Million and that the total cost of all conceptual alternatives was $1.77 Billion.

E.23 Only on May 2nd, 2008 when J1.1 Undertaking was produced was it then determined that the Study consisted of one page, and was a totally unsubstantiated, subjective, cost estimate made by John Sabiston for HONI, prepared only on April 24th, 2008, estimating the cost of all conceptual alternatives, that were not fully known to and/or available to HONI until 6 days before, namely April 18th, 2008 the date of the filing of the Intervenors' evidence. That Undertaking is set out as Appendix "5" hereto..

E.24 These Intervenors submit that this one page sheet contains no useful information for this Board to consider as it is totally void of the quality of information required of HONI to be put before this Board under the rules of the Filing Requirements 5.3.1-2. which are mandated by the

Legislature of Ontario to this Board ***'to protect the interests of consumers as to price, and the adequacy, quality and reliability of electrical services'***

E.25 The Board's Filing Requirements further mandate that **"the applicant is expected to also compare the alternatives versus the preferred option along various risk factors including, but not limited to, financial risk to the applicant, inherent technical risks, estimation accuracy risks, and any other critical risk that may impact the business case supporting the proposed project.** Mr. Sabiston's figures amount to no more than a totally unsubstantiated estimate that should be given no more weight by this Board than hand written notes on the back of a pack of MacDonald Cigarettes.

E.26 These Intervenors repeat their earlier statements of purpose made to this Board, namely they wish to ensure that the fullness of alternatives be placed before your Board so that your Board may satisfy itself that sufficient information is available to allow the Board to make a decision for the benefit of the electrical consumers of Ontario to determine whether or not an Order should be made granting HONI leave to construct its own preferred option.

E.27 These Intervenors submit that if this Board were invited to make further comment on its eventual decision, after it is made, this Board should be able to offer comparison analyses of the various technologies so as to ***protect the interests of consumers as to price, and the adequacy, quality and reliability of electrical services.'*** If this Board does not have that information before it, then that omission from evidence and the consequences thereof must fall squarely on the shoulders of HONI which is otherwise required by Board Rules to provide that information to the Board in the first place. If the comparative information as to identified alternatives is found by this Board not to exist, then HONI has not fulfilled its mandate and this Board must deny HONI leave to construct its preferred option as sought by it under s. 92 of the OEB Act, and so advise the electrical consumers of Ontario in its decision.

E.28 Attached as Appendix '2' to this Argument is a Chart setting out Questions that these Intervenors submit that the electrical consumers of Ontario have the right to understand,

through the review process given to them through this Board, and that this Board should fully answer if the sec. 92 Application of HONI is approved by the Board.

E.29 The electrical consumers of Ontario are entitled to an adequate, reliable and quality electrical service delivered in the most cost efficient manner, and the Legislature has mandated the Board to ensure that entitlement for those consumers.

E.30 These Intervenors therefore submit that the electrical consumers of Ontario are entitled to understand which of the electrical transmission options are financially the most effective, to ensure ***the adequacy, quality and reliability of electrical service*** are maintained for their benefit.

PART IV

RENEWABLE ENERGY GENERATION

F. Renewable Energy:

Need to Inject Good Investor Business Practice to Government Owned Utility Operations

F.1 These Intervenors submit that as generated electrical power from Wind is as fickle as the wind itself, in the event of an SPS emergency, that wind generation must be immediately dispatched as generation rejection before any consideration is given to any other SPS measures to avoid a potential SPS Emergency. HONI stated otherwise through its IESO witness, Mr. Falvo, who said that wind energy would be dropped last as it was the cheapest energy available and ought to be kept to avoid more costly energy purchases. . These Intervenors suggest such logic contradicts the IESO's previous published statement that no new transmission lines are needed if Wind is not a factor.

F.2 Mr. Brill in his Testimony indicated that Florida Power and Light ("FPL") have devised a two-way communication system set up by contract with electrical consumers which allows FPL to immediately load shed 2,500MW of power to consumers which he described as *'load shedding'*, being the equivalent of electrical production from one power plant. He testified, (p. 501-2 of Day 14, June 11 Transcript), as follows:

> **"In Florida, it *('two way communication - smart metering')*, was actually used to prevent having to build an additional power plant. They looked at getting the amount of load up to say: We want to be able to drop up to a power plant's worth of load, which would prevent us having to build that power plant to meet peak demand. So it is a more cost effective way of dealing with the peak by not having to build a power plant to just meet that few hours of peak demand that you see on the system during high load times".**
>
> **(Emphasis added)**

F.3 These Intervenors submit that this cost effective Florida Power & Light concept of designing an equivalent way of dropping or shedding a power plant's worth of load instantly to avoid having to build a power plant to just meet that few hours of peak demand, has direct application to Ontario and must be considered by this Board in the context of the addition of wind energy generation from the Bruce Area.

F.4 As the IESO clearly indicated in its *10 Year Outlook* prepared for the period 2006 to 2015 that with certain technical changes at Nanticoke to make sure that reactive power was continuously available, that there is no need to install new transmission lines to evacuate electrical power from the Bruce Area. Mr. Falvo, of IESO, however indicated in his testimony in these proceedings that the IESO changed its opinion in that regard when it learned that the existing and forecast wind energy to be generated from the Bruce Area was forecast to be 1,700MW nameplate capacity, and that such forecast wind capacity was to be added 6,400MW of nuclear generated electrical power, for a total combined transmission capacity of 8,100 MW.

F.5 That statement by Mr. Falvo put this Application in its true light. The Preferred Option of HONI to construct the 500KV Line has everything to do with wind power generation and really nothing to with nuclear power generation. These Intervenors submit that the electrical consumers of Ontario are being asked to spend $635 Million to evacuate from the Bruce Area of the nameplate potential of 1,700 MW of forecast electrical wind power generation.

F.6 Florida Power and Light is an investor owned utility generating returns for its shareholders. It chose to implement two-way communications to instantaneously load shed up to 2,500 MW, being one power plant's worth of power to avoid building another power plant for a few hours of peak demand. If HONI, the OPA and the IESO were investor owned utilities answering to their shareholders, rather than to their engineers, these Intervenors submit that this Application to build a $635 Million dollar 500KV Transmission Line would not have been brought.

F.8 These Interveners submit that if HONI/IESO can load shed by cutting off the Melancthon Wind Farms from transmitting its renewable energy production for the many months it will take while the 230 KV re-tensioning of the Bruce to Orangeville Line is being carried out HONI/IESO can dispatch all wind power in the Bruce Area for the few hours of peak demand that occur in the Province during each year or during other emergency situations. This would then place the system in exactly the same place as if the 1,700 MW of wind energy from the Bruce Area were NOT a factor. That being the case the statement of the IESO in its 10 year Outlook (2006-2015) would continue to apply namely that no new transmission lines would be needed with adjustments made at Nanticoke.

F.9 As this Board is the public watch-dog to protect the interests of the electrical consumers of Ontario as to price, the savings to be achieved by immediately dispatching 1,700 MW of wind generated electrical power from the Bruce Area during the few hours of peak demand, or other

electrical emergency, at an overall cost savings of $635 Million, (less the cost of any other near-term measures or other electrical facilities installed), will achieve savings for the electrical consumers of Ontario of the equivalent of what excesses would not have been spent if an investor owed company had operated the Ontario transmission system for the benefit of its shareholders.

F.10 These Intervenors submit that the annual interest on $635 Million calculated at 5% per annum would generate $31.75 Million a year or the equivalent of a $33,400 annual reserve for each of about 950 wind turbines that it would take, while producing at nameplate capacity, to generate 1,700MW of electrical power. Considering that each wind turbine generates about 1.8 MW per hour at nameplate capacity, (assuming $110 per hour per MW return for each wind turbine), this represents over 168 hours of generation at nameplate capacity or one full week of generation. At an average generation of 20% of nameplate capacity this would represent 5 weeks of average generation.

F.11 These Intervenors submit that this Board should apply the investor based business model to its evaluation process of the need to build this $635 Million 500 KV Transmission Line. If dispatching 1,700 MW of wind power capacity under a few hours of peak demand, or during other emergencies could avoid the necessity of the expenditure of $635 for a new 500KV Transmission Line, particularly when other reasonable mitigating technologies do exist, and can be implemented at much less cost, then this Board ought to so determine to protect the electrical consumers of Ontario as to price, well knowing that the adequacy, quality and reliability of the electrical services to those same electrical consumers have been otherwise assured by the IESO in its 10 Year Outlook., without the application of other less costly mitigating technologies.

Minister's Directive to secure 2000MW of Additional Renewable Energy by 2015:

F.12 HONI has focused on the "*Directive*" of the Minister of Energy dated August 27th, 2007 to the OPA to assume responsibility for exercising the powers and performing the duties of the Crown in regard to the acquisition of up to 2,000MW of renewable electricity projects that are greater than 10MW in size.(See Tab #4 - HONI Cross-Examination Materials). HONI has represented or mis-represented this '*Directive*' in its cross-examination of Intervenor witnesses as 2000MW of electrical *"wind-generated"* energy.

F.13 Renewable electrical energy generation certainly includes wind, *but* it also includes other forms of renewable electrical energy generation, including new hydro electric generation, solar electric generation, and biomass electrical generation from both waste and wood pellet fuels.

F.14 OPG is presently actively negotiating for the replacement of coal as a fuel at Nanticoke, (a 4,000MW GS), by transforming fuels, gradually switching from coal to wood pellets as a renewable fuel which would satisfy the Ontario Government's intention to eliminate coal burning, and which, when finalized, would also allow for continued electrical energy at Nanticoke, satisfying the need of Bruce for reactive power to be available from Nanticoke to support maximum generation to be available from the Bruce GSS.

F.15 If Nanticoke can be preserved as a major electrical generating facility for the Ontario Electrical Grid this fact is entirely relevant to the considerations before this Board. Even a 50% mix of coal and wood pellet fuel consumption at Nanticoke would have the effect of generating 2000MW of new electrical power from renewable fuel, wood pellets, and would thereby fully satisfy the *Directive* of the Minister of Energy dated August 27th, 2007.

F.16 These Intervenors wish to remind this Board that both Bruce Power LLP and OPG refused to participate in the Interrogatory process, and refused to answer any questions asked of them by these Interveners, notwithstanding that both corporations are integrally part of the electrical generation in Ontario, and their absence and failure to participate in this hearing, (either by the initiatives of HONI ,or on their own decisions), serves only to make information gathering and scoping for these hearings, at the very least, much harder and at the very most, impossible.

F.17 These Intervenors state that the carving out of this Application from what otherwise would be, and ought to be, part of the full considerations of this summer's IPSP hearings for the 20 year Plan, serves only to frustrate the overall requirement for needed fulsome information for these hearings, and also otherwise needed for the fulsome conduct of the 2008 IPSP hearings, and the integrity of those hearings as well.

F.18 These Intervenors submit that the Minister of Energy has not, in his August 27th, 2007 *'Directive'* letter, allocated any particular part of the 2000 MW of additional renewable energy to wind, biomass, solar or hydro electric generation. HONI has however created an impression in these Hearings that renewable energy is all "*wind*", and seemingly that most of it must come from the Bruce Area.

F.19 The eventual transformation and refurbishment of Nanticoke GS to a biomass renewable fuel energy source could occupy all of the renewable electrical energy target potential as set by the Minister of Energy, at 2,000MW by 2015, and thereby would lessen or eliminate the need to necessarily build more transmission capacity out of the Bruce Area to satisfy renewable electrical energy forecasts that may otherwise not require that transmission capability.

F.20 The Melancthon Wind Farms, which will ultimately generate 200MW of power when fully developed, only connect to the 230 KV Transmission Line a distance of 6KM west of its

easterly terminus at Orangeville TS. Those 200 MW could just as easily terminate in the 230 KV Orangeville to Essa Line at or just north of the Orangeville TS, (7 KM of new connecting conductoring only required), and would not then be in the Bruce Area, and would thereby reduce the wind portion of renewable energy from the Bruce by 200MW, and overall generation to 7,900MW from 8,100 MW, and would still deliver generated power to the Ontario Grid.

F.21 HONI has scheduled a planned shut-down of the 230KV line this year to carry out re-tensioning of the 230 KV line as part of its near-term measures. Such shut-down leaves the Melancthon Wind Farms without any connection to the Grid. Not only are the labour and maintenance costs associated with this re-tensioning of the 230KV Bruce to Orangeville line a cost that is associated with the Preferred Option of HONI, but should a cost subsidy be paid by HONI/OPA to the generator owners of the Melancthon Wind Farms for loss of generation abilities due to this shut down of the 230KV line, (and to which the Melancthon Wind Farms power generation connects), this Board should make such a determination upon appropriate investigation. This is a cost that does not appear to ever have been disclosed to this Board by HONI but which, if so subsidized by HONI or the OPA, is a cost about which the electrical consumers of Ontario are entitled to be advised, and information about which this Board ought to now seek information thereon, and to report upon to those electrical consumers.

F.22 These Intervenors submit that if this Board determines that such costs are being incurred by the electrical consumers of Ontario, these costs should be considered a part of the near term measures and added to the overall cost of the Preferred Option of HONI.

PART V

G. RESIDUAL MATTERS

Expected Load Capacities for 230 & 500 KV Transmission Lines

G.1 Mr. Brill, in his testimony, indicated that the load capacities in respect of 230 KV and 500 KV Transmission Lines utilized by Florida Power & Light have the following transmission capacity ranges, expressed in MW. (See p. 552-553 of Day 14, June 11 Transcript):

> **"At Florida Power & Light our 500 kV lines are rated somewhere in the 3,000- to 4,000-amp range, which, is I think if you look at the . . . Megawatt range to compare to, that that gives you around a 2,500- to 3,400-megawatt thermal rating on (y)our *500 lines*, and our *230* lines, while I was down there working at Florida Power & Light, we had a 1,600- amp to about a 3,000-amp rating, which transmits to about 600 to 1,170 megawatts of capacity on the *230* line."**
>
> **(Emphasis added)**

G.2 Mr. Brill analyzed the HONI pre-filed evidence and other later material provided through HONI and determined that HONI's transmission capacity was indeed much less, namely:

> **MR. FALLIS: What did you understand from your review of the HONI evidence, as to the rating capacity, transmission capacity of the 230 and the 500 lines of Hydro One?**
>
> **MR. BRILL: Well, that they were roughly about 2,350 megawatts is the thermal rating on each of the *500* lines out of Bruce. Somewhere in the 300 to 408 range is the thermal limits for the *230* lines out of the Bruce area.**
>
> **(Emphasis added)**

G.3 Comparing FPL transmission capacities based on thermal limits for 500 KV ACSR Conductors lines suggests that HONI transmission Lines are 150MW to 1050MW less than the same type lines operated and utilized by FPL. If the design capacity of the HONI 500KV line is 3,000MW, as HONI promotes the new 500KV ASCR line to be capable of transmitting, then it is reasonable for this Board to inquire and determine whether such losses have been the result of the annealing of the existing 500KV Line from Bruce to Milton from operating in excess of the thermal limits on such Line, thereby reducing its transmission capacity.

G.4 If replacement of the existing double circuit 500KV ASCR conductor is a viable option for the Board to consider for the existing ASCR 500 KV Line from Bruce to Milton, the electrical consumers ought to be advised as to what the additional cost would be for re-conductoring that same line with HTLS conductor cabling when that ASCR line might be removed in any event.

G.5 Comparing FPL transmission capacities based on Thermal limits for 230 KV ACSR conductor lines suggests that these HONI transmission Lines operate at 300MW to 870MW less transmission capacity than the same type 230 KV Lines operated and utilized by FPL. If the design capacity of the HONI 230KV line is much greater, and in the order of the transmission capacity 230 KV Lines of FPL, then it is reasonable for this Board to inquire and determine whether such losses have been the result of the annealing of the existing 230 KV Line from Bruce to Orangeville from operating in excess of the thermal limits on such Line, thereby reducing their transmission capacity. The fact that the 230KV Lines to Orangeville are currently being re-tensioned is proof that they have been allowed to overheat and that the sags resulting from such overheating have caused permanent excessive sagging of the 230 KV ASCR conductors to such an extent that these 230 KV conductors have not returned to their original tensile strength and condition, thereby reducing their transmission capacity.

G.6 If refurbishment of the existing double circuit 230 KV ASCR conductor from Bruce to Orangeville is a viable option, and which HONI has committed to undertake this year, the Board might consider what would be the additional cost for re-conductoring that same 230 KV line with HTLS conductor cabling, and constructing new 230 KV transmission transfer capability only from Orangeville TS to Milton TS to move part of that power beyond Orangeville TS.

Reliability of Existing System with Proposed Reinforcement:

G.7 Mr. Brill examined the load data supplied by HONI and in the SEA Report (April 28, 2008), authored by him, he expresses a very real concern about the combining of 2 x 500KV lines and 1 x 230 KV Line in the same transmission corridor . At p. 10 of his Report he stated:

> **"This appears to contradict the reliability requirements for HONI's transmission system by placing such a large critical power flow through one single corridor. Load data reviewed indicates the existing lines in this corridor, *(1 x 230KV and 1 x 500KV)*, presently carry 60% of the existing generation output of the Bruce Area. The reliability could be at risk from an act of God, accidental, or intentional act, preventing the entire load flow from being carried through this corridor. There would be no other path to carry the loss of power from this corridor out of the Bruce Area"**
>
> **"HONI's interrogatory response to Pappas in Exhibit C, Tab 4, Schedule 12, Page 5 of 5, provides a chart that indicates that with the new Bruce to Milton line and 1000 MW of wind generation installed, the percent of load carried through this corridor approaches 84% of the output of the Bruce area. This increases the risk of an outage affecting this corridor and possibly creating an extensive outage across the Ontario area."**
>
> **" Another concern raised from this chart is that HONI's proposed load flow indicates that the Bruce to Longwood 500KV (B563L and 563L) lines will operate at less than 10% of their rated output. This raises questions on the load flow to the existing line and the justification of the proposed new line (*Chart attached to SEA Report as Attachment 3*)**
>
> **(Emphasis added)**

G.8 This evidence of Mr. Brill was never challenged or disputed and must be accepted by this Board as being a correct interpretation of the information provided by HONI. Placing 84% of generated electricity transmission capacity from the Bruce Area in one Corridor, (when the original planners of the system, Ontario Hydro, created 4 separate corridors, and specifically separated each of the 230KV lines from each other, and separated each of the 500 KV lines from each other), borders upon wanton reckless engineering putting system reliability in potential peril, and which may be the equivalent of again re-building the infamous collapsed Quebec City Bridge using the original plans. For Messrs Falvo, Chow and Sabiston to gloss over that fact, virtually ignore this aspect of reliability, in what appears to be an attempt to otherwise justify straight-line, parallel engineering, defies the most basic element of common reason. The additional extra cost of about 60 feet of land for 180 KM represents just over 818 acres of land. At $5,000 an acre this represents just over $4 million. System reliability is notionally being compromised to save $4M.over the 100 year life of the Line, representing $40,000 a year.

G.9 This Board has said that it will not concern itself with routing matters or alternative route selection leaving the route selection criteria to the EA process. These Intervenors note that one of the four objects that this Board is mandated to consider is 'system reliability'. _These Intervenors submit that '*Reliability*' is not the mandate of the Minister of the Environment under the EA process. The electrical consumers of Ontario are entitled to be provided with information through this Board's decision as to how the proposal of HONI to place 2 x 500KV lines and 1 x 230 KV line in the same overall transmission corridor, (and which will carry load approaching 84% of the output of the Bruce Area), can possibly be considered a 'design reliable system' when the Bruce to Longwood lines will then operate at less than 10% of their rated capacity.

G. 10 These Intervenors suggest that after the construction and transmission start-up of the new Bruce to Milton Reinforcement 500KV line,(if approved), for all practical purposes the Bruce to Longwood Line will be effectively moth-balled with a trickle transmission only, to await a new transmission later use proposal from Bruce Power LLP which may very well propose to use that vastly under-used 500KV line to transmit excess Bruce GSS generation capacity to the United States.

G.11 If correct, these Intervenors suggest the electricity consumer-ratepayers of Ontario,(who will have paid for a new 500KV Line to Milton TS), will also have effectively provided Bruce Power LLP with the opportunity, *available only to it*, to use the 500KV line to Longwood (previously paid for by the electric consumer-ratepayers of Ontario), for transmitting power to the U.S., for the benefit of Bruce Power LLP shareholders, which private company otherwise would have had to build such a inter-connect line to the U.S at their own expense. This may explain why Bruce Power LLP did not participate in these hearings so as to avoid questions being asked of their witnesses about that very real possibility.

Financial Penalties:

G. 12 Mr. Brill notes in the SEA Report; (p. 9), which he authored, that the website of HONI states that:

> **"Failure to place the Bruce to Milton Project in service by December 1, 2011, may prevent available generation capacity in the Bruce Area (about 2,225MW from wind turbine and nuclear power) from being connected to the Ontario Transmission Grid; ie, there would be "stranded generation"**

G.13 Mr. Brill noted in his report (p. 9-10), that HONI states that the Ontario Government will need

to pay a considerable amount as compensation to Bruce Power if the Bruce to Milton Project is not brought into service on time, and due to lack transmission capacity. Quoting again from the HONI website:

> **"Bruce Power will be required to forego their expected revenue resulting from its new generation capacity. Similarly, the contracts for 725MW of committed wind power would also require payment or some form of compensation if the new wind power generation cannot be used due to lack of transmission capacity."**

G.14 Mr. Brill then makes a very astute and poignant observation about these revenue penalties which may cut to the chase, and which may put this Board in a very real dilemma as to whether or not to be able to review the Application through all of its 4 mandated filters of concern, namely to protect consumers as to price, and the adequacy, reliability, and quality of electrical services. He observed:

> **"This statement implies that financial penalties may influence reasons for eliminating other alternatives and technologies in order to move quickly to potentially avoid paying for generation that provides no benefit to the ratepayers"**

G.15 These Intervenors submit that the failure of OPA to make a request of Hydro One Inc. for a new line until March 23rd, 2007 , a delay of over 1.5 years from that date it entered into a contract with Bruce Power LLP, in October, 2005, should not be a factor that this Board ought, in any way, to consider in its deliberations. The mandate of the Board to protect the electrical consumers of Ontario as to *'costs"* relates to the costs associated with the proposed transmission reinforcement project proposed, and to other alternatives including routings and technologies. The 1.5 year delay by the OPA in taking steps to initiate the transmission reinforcement, and the associated costs for such delay, whether through design, mistake, ineptness or negligence, is only a problem for the Ontario Government to resolve, as the sole

shareholder of that Crown corporation, the Ontario Power Authority.

G.16 These Intervenors submit that this Board should ignore the financial problems of the OPA and the financial penalties it may suffer as a consequence of its delays. That is a political problem, not a sec. 92 consideration for this Board. Should a rate increase be subsequently sought by the OPA as a result of penalty payments, this Board will have another opportunity to revisit this issue. This Application is, after all, a *'discretionary development project'* of HONI, and this Board should only look at the Application of the preferred option of the Applicant, HONI, through its usual and normal mandated filters.

G.17 These Intervenors submit that HONI is attempting to clothe itself in the financial problems of the OPA, and to mask their financial problems as being the financial problems of HONI, thereby urging this Board to effectively by-pass its own Rules and Procedures to approve this project by making an Order granting leave to construct the proposed Project.

G.18 These Intervenors submit that the electrical consumers of Ontario deserve much more and urge this Board to intervene on their behalf to financially protect their interests for all of the above reasons.

PART VI

H. COMMENTARY ON BOARD STAFF SUBMISSIONS

Niagara Escarpment Act Development Permit - Mandatory condition

H.1 These Intervenors note that the Board Staff may have overlooked the insertion of an additional clause in its Draft Order, should the Board, determine to otherwise make an Interim Order for

Leave to Construct.. The *Niagara Escarpment Planning and Development Act* makes the following statutory provision therein:

> **Development permits**
>
> **24. (1) Despite any other general or special Act, if an area of development control is established by regulation made under section 22, no person shall undertake any development in the area unless such development is exempt under the regulations or unless the development complies with a development permit issued under this Act. 1999, c. 12, Sched. N, s. 4 (9).**

H.2 The 2005 *Provincial Policy Statement* provides as follows:

> **4.9 Provincial plans shall take precedence over policies in this Provincial Policy Statement to the extent of any conflict. Examples of these are plans created under the *Niagara Escarpment Planning and Development Act* and the *Oak Ridges Moraine Conservation Act, 2001.***

H.3 HONI requires an NEC issued '*Development Permit*' before any development on designated Niagara Escarpment lands may take place. This *Permit* is just as mandatory as EA Approval under the *Environmental Assessment Act* before this reinforcement project can be undertaken by HONI on NEC regulated lands.

H.4 The Draft Order of the Board, if Leave to Construct is granted in this Application, should be so amended to also make specific provision for the condition of issuance of a *Development Permit* under the *Niagara Escarpment Planning and Development Act* before the Approval of this Board is made final by Order of this Board.

PART VII

I. ISSUES LIST

These Applicants, for the reasons set out above, answer the questions raised in the "Issues List" in the following manner: (The answers are set out in the same numeric list as they were established but without setting out the questions which have been well established and are well known to all parties, the Intervenors and the Board). . The

1.0 Project Need and Justification

1.1 The need for the project has not been established -

ANSWER: "NO"

1.2 The project does not qualify as a 'non-discretionary' project under the Board's *'Filing Requirements* for *Transmission and Distribution Applications'*

ANSWER: "NO"

1.3 All appropriate risk factors pertaining to the need and justification have not been taken into consideration

ANSWER: "NO"

1.4 The project is not suitably chosen and sufficiently scalable so as to meet all reasonably foreseeable future needs of significantly increased or significantly reduced generation in the Bruce area.

ANSWER: "NO"

2.0 Project Alternatives

2.1 All reasonable alternatives to the project have not been identified and considered

ANSWER: "NO"

2.2 Appropriate evaluation methodology has not been applied to all of the alternatives considered.

ANSWER: "NO"

2.3 For all considered alternatives the evaluation methodology did not and does not include a cost benefit comparison as well as a comparison of quantitative and qualitative benefits.

ANSWER: "NO"

2.4 (a) Appropriate evaluation criteria and criteria weightings have not been utilized in the evaluation process for alternatives and the the proposed project

ANSWER: "NO"

(b) Appropriate comparisons have not been carried out on all reasonable alternatives with respect to reliability and quality of electrical service including stability and transient levels, voltage performance and Loss of Load Expectation projections under normal and post-contingency conditions

ANSWER: "NO"

(c) The alternatives do meet the applicable standards for reliability and quality of electrical service.

ANSWER: "YES"

2.5 The proposal is absolutely not a better project than the reasonable alternatives.

ANSWER: "NO"

2.6 The projects rate impacts and costs are not reasonable for each of (1) transmission rates, (2) the station modifications, and (3) the Operating, Maintenance, and Administration requirements

ANSWER: "NO"

3.0 Near Term and Interim Measures

3.1 The near term and interim measures as outlined In the Application are not appropriate.

ANSWER: "NO"

3.2 The proposed near term and interim measures can be utilized longer than the suggested two to three year time frame.

ANSWER: "YES"

3.3 The near term and interim measures can be utilized for a period longer than proposed, and they, or a combination thereof, can be considered as an alternative to the double circuit 500KV transmission line for which HONI has applied.

ANSWER: "YES"

4.0 Reliability and Quality of Electricity Service

4.1 For the preferred option the project does not meet the requirements in the System Impact Assessment and Customer Impact Assessment.

ANSWER: "NO"

4.2 The project does not meet applicable standards for reliability and quality of electricity service.

ANSWER: "NO"

4.3 All appropriate project risk factors pertaining to system reliability and quality of electricity service have not been taken into consideration in planning this project.

ANSWER: "NO"

5.0 Land Matters

5.1 The forms of land agreements to be offered to effected landowners are reasonable as far as they go. However there should be an annual perpetual recognition payment paid additionally to Landowners of record on January 1st of each year with a commencement date on the 15th day of February in each year after the in-service date of the Line, if constructed, with cost of living adjustments thereto each year, payments to be paid on all an acreage basis for all transmission lines serving the electrical consumers of Ontario.

ANSWER: "OK" but needs substantial annual recognition payment to landowners

5.2 The question raised is as much a mystery today as it was when it was authored in September of 2007. The EA process has only progressed from August 3rd, 2007 to the point of approving the Terms of Reference, (ToR), in early April 2008, and the Minister of the Environment will hand down a decision 30 weeks later, (without conducting any hearing process whatsoever), leaving it to landowners to request a review before the *Environmental Review Tribunal*, a process that does not have a current timetable for conclusion.

This Hearing process is so far down the road towards a final decision conclusion before the EA process has even got off the ground. The two processes could NOT be more out-of-sync with each other - The processes are not in-step and could not be more out-of-step. *[Attached as Appendix No. # 4 hereto is copy, (poor quality fax) of the California Public Utilities Commission (CPUC) - Time Lines established for each of the CEQA and CPCN processes that may assist this Board in understanding how the synchronization of the two processes happens in California*]

What complicates the process even more is the fact that HONI made no disclosure to this Board of the necessity to obtain a "Development Permit" from the NEC under the *Niagara Escarpment and Planning and Development Act*, which Permit, if not granted will frustrate this entire proceeding and Application.

HONI has made a most cavalier Application, assuming a *"right of passage"*, without regard for orderly and proper process. The final EA decision is realistically probably a year away and with every probability of a long and protracted *Environmental Review Tribunal Hearing.*

(These Intervenors do indeed hope that the failure of process under this *Act* to allow the NEC senior planner to attend to explain to this Board the issues that this Application has upon NEC jurisdiction over the Lands which it is charged with protecting, will not have served to effect a schism between this hearing process and the planning processes under the NEPDA)

ANSWER:
"ABSOLUTELY UNSURE !"

6.0 Aboriginal Peoples Consultations

These Intervenors do not have sufficient information to offer meaningful comment.

7.0 Conditions of Approval

The Board will make an Order as it is mandated so to do.

A. This Board may order that Leave to Construct is NOT granted. No conditions need to be added to such a decision. However the decision should be constructive in nature so that HONI can take guidance from this Board on what alternative, if any, it may have considered approving, provided certain additional information had been provided to the Board which met minimum evidentiary levels to allow the Board to make a cogent comparative decision.

HONI should be granted leave to re-apply to this Board, if needed.

B. If this Board grants HONI leave to construct, such Order must be stated clearly to be conditional, and with referral back to this Board for finalization, but only after receiving:

1. Final approval under the *Environmental Assessment Act*, and all appeals therefrom have first exhausted, and

2. A Development Permit under the *Niagara Escarpment Planning and Development Act*, and all appeals therefrom have first exhausted.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 4th DAY OF JULY, 2008

PETER T. FALLIS

Counsel for the "Fallis Group of Intervenors"

PART VIII

APPENDICES

1. **Operating Experience History of Reactor** Units at Douglas Point and Bruce "1 – 8 " from 1977 to 2006 — 65 - 67

   (From information of he International Atomic Energy Agency – Vienna Austria Apr. 7/08)

2. **Chart setting out Questions for OEB** (E.28) — 68 - 69

3. **California Public Utilities Commission** (CEQA) — 70 - 77
   (California Environmental Quality Act)
   "Frequency Asked Questions - 8 pages.

4. **Time Line Comparison of the CEQA and CPCN** processes in California - (in-step process) — 78

5. "**Conceptual Alternatives to a New 500 KV Bruce Transmission Line**" — 79
   (Prepared by John Sabiston of HONI on April 24th, 2008)

OPERATING EXPERIENCE HISTORY OF REACTOR UNITS AT DOUGLAS POINT AND BRUCE "1 - 8" FROM 1977 TO 2006

(FROM INFORMATION RECORDS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY - VIENNA, AUSTRIA)

REACTOR	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
D. POINT	206	206	206	130	206	206	206	206										
BRUCE 1	740	740	740	740	740	740	740	740	848	848	848	848	848	848	848	848	848	848
BRUCE 2	740	740	740	740	740	740	740	740	781	848	848	848	848	848	848	848	848	848
BRUCE 3		740	740	740	740	740	740	740	775	796	848	848	848	848	848	848	848	848
BRUCE 4			740	740	740	740	740	740	788	848	848	848	848	848	848	848	848	848
BRUCE 5								854	805	860	835	860	860	860	860	860	860	860
BRUCE 6								822	805	835	837	837	837	852	860	860	860	860
BRUCE 7										838	837	846	860	860	860	860	860	860
BRUCE 8											844	837	842	860	860	860	860	860
* TOTAL MWe GENERATION CAPACITY	1,686	2,426	3,166	3,090	3,166	3,166	3,166	4,842	4,802	5,873	6,745	6,772	6,791	6,824	6, 832	6,832	6,832	6,832

* Based on Historic Records of the International Atomic Energy Commission (IAEA)created from IAEA Website on April 7th, 2008. **(Expressed in MWe)**

OPERATING EXPERIENCE HISTORY OF REACTOR UNITS AT DOUGLAS POINT AND BRUCE "1 - 8" FROM 1977 TO 2006

(FROM INFORMATION RECORDS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY - VIENNA, AUSTRIA)

REACTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
D. POINT												
BRUCE 1	848	848	848									
BRUCE 2	848											
BRUCE 3	848	848	848	848						750	750	750
BRUCE 4	848	848	848	848					769	769	750	750
BRUCE 5	860	860	860	785	785	785	790	790	790	790	790	806
BRUCE 6	860	860	860	860	785	785	790	790	790	790	841	822
BRUCE 7	860	860	860	785	785	785	790	790	790	790	790	806
BRUCE 8	860	860	860	785	785	785	790	790	790	790	790	790
* TOTAL MWe GENERATION CAPACITY	6,832	5,984	5,984	4,911	3,140	3,140	3,160	3,160	3,929	4,679	4,711	4,724

* Based on Historic Records of the International Atomic Energy Commission (IAEA)created from IAEA Website on April 7th, 2008, . **(Expressed in MWe)**

\\Peter1\storage (d)\A.COMMERCIAL\08 COM\Hydro Transmission Lines 2008\IAEA Historic Generation Chart 1997 to 2006 for the Bruce.wpd

OPERATING EXPERIENCE HISTORY OF REACTOR UNITS AT DOUGLAS POINT AND BRUCE "1 - 8" FROM 1977 TO 2006

(FROM INFORMATION RECORDS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY - VIENNA, AUSTRIA)

COMMENTS:

CHART FILED BY HONI AS Exhibit 'C' - Tab 4 - Schedule 12, p. 4 of 5, discloses that:

1. Until 1979, the 500 KV Line was not yet in service.
2. Until 1979 the only Transmission lines leaving BRUCE GSS were:
   - i. 230 KV - Bruce to Hanover/Orangeville - In service Nov. 26, 1963
   - ii. 230 KV - Bruce to Detweiler - In service Oct. 11, 1975
   - iii. 230 KV - Bruce to Owen Sound - In service Oct. 31, 1977
3. The 500 KV line from BRUCE to Milton first operated as a 230KV line to Belwood Junction to add capacity before construction of 500KV line to Milton was completed.
4. Before 1979, the generation capacity of : Douglas Point Unit and Bruce Units " 1 - 2" was 1,646 MWe in 1977 and
   Douglas Point Unit and Bruce Units " 1 - 3" was 2,426 MWe in 1978
5. Before 1979 Three (3) 230 KV Lines transmitted all of the net generation capacity available from the gross capacity of 2,426 MWe before any 500 KV Lines were built
6. In 1979 the 500 KV Bruce to Milton Line was operated as a 230 KV until April 1, 1983, and Douglas Point and Bruce '1 - 4' generated 3,166 MWe except for 1980 when they generated 3,090 MWe
7. From 1987 to 1995 the generation capacity of all 8 Units at the Bruce was as low as 6,745 MWe to a high of 6,832 MWe.

COST RELATED QUESTIONS FOR CONDUCTOR CHOICE	ASCR $(M)	ACSS ($M)	ACCR ($M)
1. What is the estimated cost the supply of sufficient 500 KV Conductor cabling for 180 KM running from The Bruce to Milton on the preferred route choice of HONI (f.o.b job site) - supported by cost estimate from manufacturer/supplier?			
2.What is the estimated cost for land acquisition for the proposed 500KV Transmission within the preferred route corridor choice of HONI?			
ASCR: **3.** What is the estimated cost of the steel for the Towers and separate cost for their erection, supported by cost estimates for the proposed 500 KV Transmission line? **3A.** What is the cost estimate of re-adjusting the existing 230 KV line from Bruce to Hanover to Orangeville **3B.** What cost will HONI/OPA/ and the electrical consumers of Ontario suffer during the re-adjustment of Bruce to Orangeville 230KV Line which will not bee in operation during 230 KV adjustment period in respect to locked in power potential from Melancthon Wind farm, (approx 100MW Nameplate capacity), which only connects to the Ontario Grid through that 230 KV Line approx. 6 km west of Orangeville			
ACSS: **4.** Need to determine comparative weight of ACSS conductor cable to compare with ACCR to determine if it can be installed on both 230 KV and 500 KV a can be utilized. If ACSS conductors can be installed on existing 230 KV Line to transmit 500KV of electricity, no additional land will be required.			

ACCR: **5.** What is the cost of reconductoring either the 500 KV Line from Bruce to Milton with ACCR conductor cabling or the 230 KV line from Bruce to Orangeville with new Towers from Orangeville to Milton only, including removing existing conductors and replacing with HTSL conductors			

FREQUENTLY ASKED QUESTIONS ABOUT THE CALIFORNIA PUBLIC UTILITIES COMMISSION'S CALIFORNIA ENVIRONMENTAL QUALITY ACT PROCESS

1. What is CEQA?

CEQA stands for the California Environmental Quality Act of 1970. CEQA is a California law that requires state and local agencies to consider potential environmental effects prior to approving new activities and to avoid or mitigate significant impacts whenever feasible. The basic purpose of the law is to: (1) inform decision makers and the public about the possible environmental effects of proposed projects; (2) identify ways that environmental damage can be avoided or reduced; (3) require changes in projects through the use of less damaging alternatives or mitigation measures when feasible; and (4) where the agency is approving a project despite remaining significant environmental effects, require the agency to explain why.

2. When does CEQA apply?

State and local agencies must comply with the requirements of CEQA whenever they consider approving any proposed action defined by CEQA as a "project". A project is an activity that requires the discretionary approval of a government agency, such as the grant of a construction permit, which may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

3. How does CEQA affect the CPUC's work?

The basic mission of the CPUC is to regulate investor-owned telecommunications, electric, natural gas, and water utilities operating in the State of California. This group of utilities includes big investor-owned utilities (IOUs) that you may be familiar with, such as Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company and AT&T. It also includes many smaller utilities, such as PacifiCorp and Sierra Pacific. The CPUC does not regulate municipally-owned utilities such as the Sacramento Municipal Utility District or the Los Angeles Department of Water and Power.

The CPUC oversees almost all large utility construction projects. It also considers approval of other types of utility activity that might have a significant impact on the environment. Most of the CPUC's CEQA obligations arise in the context of the CPUC's review of utility construction permit requests, where the CPUC is usually the "lead agency" for CEQA review purposes.[1] When a utility wants to construct something, such as a transmission line, it must generally apply for a permit from the CPUC, called a "Certificate of Public

[1] Note that where an investor-owned utility coordinates with a local government or municipally-owned utility, the CPUC may not be the lead agency for CEQA purposes. Instead, the CPUC may be a responsible agency that may coordinate in the development of the environmental documents.

Convenience and Necessity" or "CPCN."[2] Before the CPUC can rule on a utility's application for a CPCN, the CPUC must comply with CEQA by analyzing the environmental impacts of the proposed project.

4. How does the CEQA process work within the CPUC's CPCN process?

Whenever the CPUC considers whether or not to grant a CPCN application or any other project, the CPUC must (1) inform the public about the possible environmental effects of the proposed project; (2) identify ways that environmental damage that may be caused by the proposed project can be avoided or reduced; (3) require changes in the proposed project through the use of alternatives or mitigation measures when feasible; and (4) explain why the CPUC will approve a project despite remaining significant environmental effects, explain why.

When a utility files a CPCN application, the application must include a "Proponent's Environmental Assessment" (PEA) that describes the utility's view of the environmental impacts of the proposed project. Energy Division staff within the CPUC work with consultants to determine whether to issue a negative declaration, a mitigated negative declaration (MND) or an environmental impact report (EIR). Consistent with the requirements of CEQA, there are many opportunities for public participation and comment during the development of the CEQA strategy, alternatives to the project that may be studied, and the development and issuance of the draft and final environmental documents. A simple step-by-step explanation of this CEQA process, described within the context of a CPCN proceeding, is available at:

http://www.cpuc.ca.gov/static/energy/environment/cpcnprocess.doc.

A timeline that shows the relationship between the CEQA and CPCN processes is available at:

http://www.cpuc.ca.gov/static/energy/environment/document.pdf

As the step-by-step explanation and the timeline demonstrate, the CPUC's CEQA process occurs in parallel with the CPCN process and a CPCN cannot be issued until the CEQA process is completed.[3] After the CEQA process and a final environmental analysis are completed, the Administrative Law Judge (ALJ) overseeing the CPCN writes a draft decision based on the CEQA documentation and testimony from parties to the proceeding.

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[2] Depending upon the scale of the project, the utility may apply instead for a "Permit to Construct" or "PTC." For simplicity, this document refers to both CPCNs and PTCs together as a CPCN.

[3] Please note that where the CPUC is not the lead agency for CEQA purposes, the CEQA process may be completed by another agency prior to the utility filing its application for a CPCN.

It is important to recognize that the final CEQA analysis is an informational environmental document only. It does not make a recommendation regarding the approval or denial of the CPCN application, and it does not establish the route or location for the proposed project

(where relevant). The purpose of the final environmental document is to inform both the public and the decision makers of the environmental impacts of the proposed project and alternatives, and to identify, from a purely environmental perspective, a preferred route or location (where relevant). In making a final determination on the application, the Commission will consider many other non-environmental factors such as community values, historical values, the existence of recreational and park areas, whether the utility has demonstrated that the project is needed and whether the estimated cost of the proposed project is reasonable. The ALJ and the Commission consider the final environmental documents, along with alll these other issues, during the preparation of the decision on the CPCN application. Environmental concerns do not bind the Commission, and the Commission has the authority to issue a Statement of Overriding Consideration allowing other factors to take precedence over environmental concerns.

The Commissioners vote on the ALJ's draft or a commissioner's alternative decision at a Commission meeting. If the Commission approves a decision, the utility is either issued or denied a CPCN. When it receives a CPCN, the utility can proceed with the project, pending necessary approvals from other agencies.

5. What affect does CEQA have on proposed utility projects?

CEQA requires the CPUC to identify the significant environmental impacts of a proposed project, and if the project is going to be approved, to develop measures, where feasible, to avoid or reduce those impacts. At a minimum, CEQA requires an initial review of the project and its environmental effects to be identified and addressed. Depending on this initial analysis, a further and more substantial review may be required through either a mitigated negative declaration (MND) or an environmental impact report (EIR). Under CEQA, a proposed project may not be approved as submitted if feasible alternatives or mitigation measures are able to reduce the significant environmental effects of the proposed project. Thus, the environmental review of the proposed project must be completed prior to the agency's decision, in order to influence the proposed project's plans or design.

6. Which types of utility projects need to go through the CEQA process?

The CPUC regulates investor-owned telecommunications, electric, natural gas, and water utilities operating or wishing to operate in California. The CPUC must comply with the requirements of CEQA when it approves any requested utility action that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment. See the answer to FAQ No. 0, above, for further discussion on this issue.

7. What role can the public play in determining how a utility's proposed project is reviewed during the CEQA process, and whether or not a CPCN is granted?

The CPUC's CEQA and CPCN processes are two distinct processes that run in parallel to each other during the CPUC's consideration of the CPCN application.

The CEQA process was established based on the belief that citizens hold a privileged position in the public agency planning process and can make important contributions to environmental protection. Consistent with the requirements of CEQA, there are many opportunities for public participation and comment during the CEQA process, including public participation in the development of the CPUC's CEQA strategy and alternatives to the project that may be studied (this is the CEQA "scoping" process), and the development and issuance of the final environmental documents (public comments, both written and oral, are taken during the development of the draft and final environmental documents). A simple step-by-step explanation of this CEQA process, described within the context of a CPCN proceeding, is available at:

http://www.cpuc.ca.gov/static/energy/environment/cpcnprocess.doc.

As set forth in the step-by-step guide described above, the CPCN process is separate from the CEQA process. Participation in the CPUC's CPCN process requires formal intervention in the proceeding, and may involve the filing of expert witness testimony. Intervenor compensation is available to parties who wish to participate in the CPCN portion of the CPUC's decision-making process, provided they make a significant contribution to the proceeding that does not duplicate the work of other parties. Additional information about this process and the availability of intervenor compensation is available through the CPUC's Public Advisor's Office and at the following link:

http://www.cpuc.ca.gov/static/aboutcpuc/divisions/csid/public+advisor/publicparticipation.htm

See also the answer to FAQ No. 8, below regarding the assistance provided by the Public Advisor's Office.

8. Can I get assistance with determining the steps I need to take to have my voice heard through the CPUC's CEQA or CPCN processes?

The CPUC Public Advisor's Office provides procedural information and advice to groups and individuals who want to comment or advocate positions in the CPUC's formal proceedings. The Public Advisor's staff helps answer questions, locate information, or refer callers to the appropriate staff person. The Public Advisor's staff also attends community functions and assists the public in participating in CPUC proceedings, and town hall meetings, etc. You may contact the Public Advisor's Office at: CPUC Public Advisor, 505 Van Ness Avenue, Room 2103, San Francisco, CA 94102; or call (866) 849-8390 or (415) 703-2074; or e-mail public.advisor@cpuc.ca.gov. Additional information regarding the CPUC's Public Advisor is available at:

http://www.cpuc.ca.gov/static/aboutcpuc/divisions/csid/public+advisor/

FREQUENTLY ASKED QUESTIONS ABOUT THE CALIFORNIA PUBLIC UTILITIES COMMISSION'S CALIFORNIA ENVIRONMENTAL QUALITY ACT PROCESS

9. Who is responsible for CEQA compliance and enforcement?

It is each government agency's obligation to ensure compliance with CEQA. Where the agency fails to comply with CEQA, the public may enforce compliance with CEQA through the courts. Attorney fees and costs may be available to those who are successful in enforcing CEQA through the courts.

10. What is a Negative Declaration? How does that compare with a Mitigated Negative Declaration (MND)? How are those different from an Environmental Impact Report (EIR)?

The CEQA analysis of a project will result in either an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND), or a Negative Declaration (ND).

An Environmental Impact Report (EIR) is prepared when the public agency finds substantial evidence that supports a fair argument that the project may have a significant effect on the environment.

A Mitigated Negative Declaration (MND) is prepared for a project when the initial study identifies potentially significant effects on the environment, but: (1) revisions in the project plans or proposals would avoid the effects to a point where clearly no significant effect on the environment would occur; and (2) there is no substantial evidence that the project, as revised, may have a significant effect on the environment.

A Negative Declaration is prepared when an agency finds that there is no substantial evidence that a project will have a significant effect on the environment.

11. What is a "lead agency"? or Who prepares the environmental analysis?

Under CEQA, the lead agency is the California government agency that has the principal responsibility for carrying out or approving a project; the lead agency is the agency responsible for preparing the environmental study. The lead agency decides whether a Negative Declaration, MND, or EIR will be prepared, and determines the scope and content of that document. Where the CPUC is the lead agency on a project, the CPUC hires environmental consultants to assist in the preparation of the environmental studies.

12. What is a significant effect on the environment?

The CEQA Guidelines (14 California Code of Regulations) § 15382 define a "significant effect on the environment" as:

> a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

> An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Please see the answer to FAQ No. 13 for additional information on the issue of significant impacts.

13. If there is a significant environmental impact does that mean that the project can't be built?

No. When an EIR shows that a project would cause substantial adverse changes in the environment, the agency must respond to the information by one or more of the following methods: (1) changing the proposed project; (2) imposing conditions on the approval of the project; (3) adopting plans or ordinances to control a broader class of projects to avoid the adverse changes; (4) choosing an alternative way of meeting the same need; (5) disapproving the project; or (6) finding that changing or altering the project is not feasible and that the need for the project overrides the unavoidable significant environmental damage it will cause.

14. What role do the Department of Fish and Game and other state agencies (with relevant knowledge and jurisdiction) have in the CEQA process? or What is a Responsible or Trustee Agency?

In addition to the Lead Agency that prepares the environmental document, there are Responsible and Trustee Agencies. A Responsible Agency includes any public agency, other than the Lead Agency, which has discretionary approval power over the project. *See* CEQA Guidelines §15381. A Trustee Agency is a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. *See* CEQA Guidelines § 15386. Trustee agencies include: the California Department of Fish and Game, the State Lands Commission; the State Department of Parks and Recreation; and the University of California. The Lead Agency must include Responsible and Trustee Agencies in the development of the environmental document. This can include pre-application consultation, and must include sending the formal Notice of Project and draft EIRs to these agencies so that they can provide comments on the scope and content of the environmental document.

15. Does the CPUC ever share the lead with another agency to do a CEQA analysis?

Under CEQA, any agency other than the Lead Agency that has responsibility for carrying out or approving a project is known as a "Responsible Agency". A responsible agency should actively participate in the Lead Agency's CEQA process, review the Lead Agency's CEQA document, and use the Lead Agency's CEQA document when making a decision on the project.

16. Are electric and magnetic fields (EMFs) considered in the CPUC's CEQA process?

FREQUENTLY ASKED QUESTIONS ABOUT THE CALIFORNIA PUBLIC UTILITIES COMMISSION'S CALIFORNIA ENVIRONMENTAL QUALITY ACT PROCESS

The Commission first established EMF policies in D.93-11-013. In its recent review of EMF issues, the Commission stated in D.06-01-042 that, "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences." It affirmed in D.06-01-042 that the Commission's EMF policy is one of prudent avoidance, with application of low-cost/no-cost mitigation measures to reduce EMF exposure for new and upgraded utility transmission and substation projects. The Commission has adopted a benchmark of 4% of total project cost for low-cost EMF mitigation measures, with flexibility to allow expenditures above the 4% benchmark if justified by a project's unique circumstances. In D.06-01-042, the Commission stated that, as a guideline, low-cost EMF mitigation measures should reduce EMF levels by at least 15% at the utility right of way.

As a general rule, an EIR will provide information regarding EMF associated with a proposed project. However, it does not consider magnetic fields[4] in the context of CEQA and determination of environmental impact because there is no agreement among scientists that EMF creates a potential health risk, and there are no defined or adopted CEQA standards for defining health risk from EMF.

Under the Commission's rules, the utility must include, in its application, a description of the measures taken or proposed by the utility to reduce the potential exposure to EMFs generated by the proposed facilities (General Order 131-D, Section X.).

In D.06-01-042 the Commission directed the utilities to hold a workshop to develop standard approaches for EMF Design Guidelines that meet the Commission's low-cost/no-cost policies. This workshop was held in the spring of 2006 and the EMF Design Guidelines are a result of that workshop. The guidelines describe the routine magnetic field reduction measures that all regulated California electric utilities will consider for new and upgraded transmission line and transmission substation projects. The EMF Design Guidelines are available at:

http://www.cpuc.ca.gov/static/energy/environment/electromagnetic+fields/index.htm

Decision No. 06-01-042 is available at:

http://www.cpuc.ca.gov/static/documents/index.htm

[4] Because electric fields are shielded effectively by materials such as trees and walls, the emphasis in our consideration of EMF is on exposure to magnetic fields.

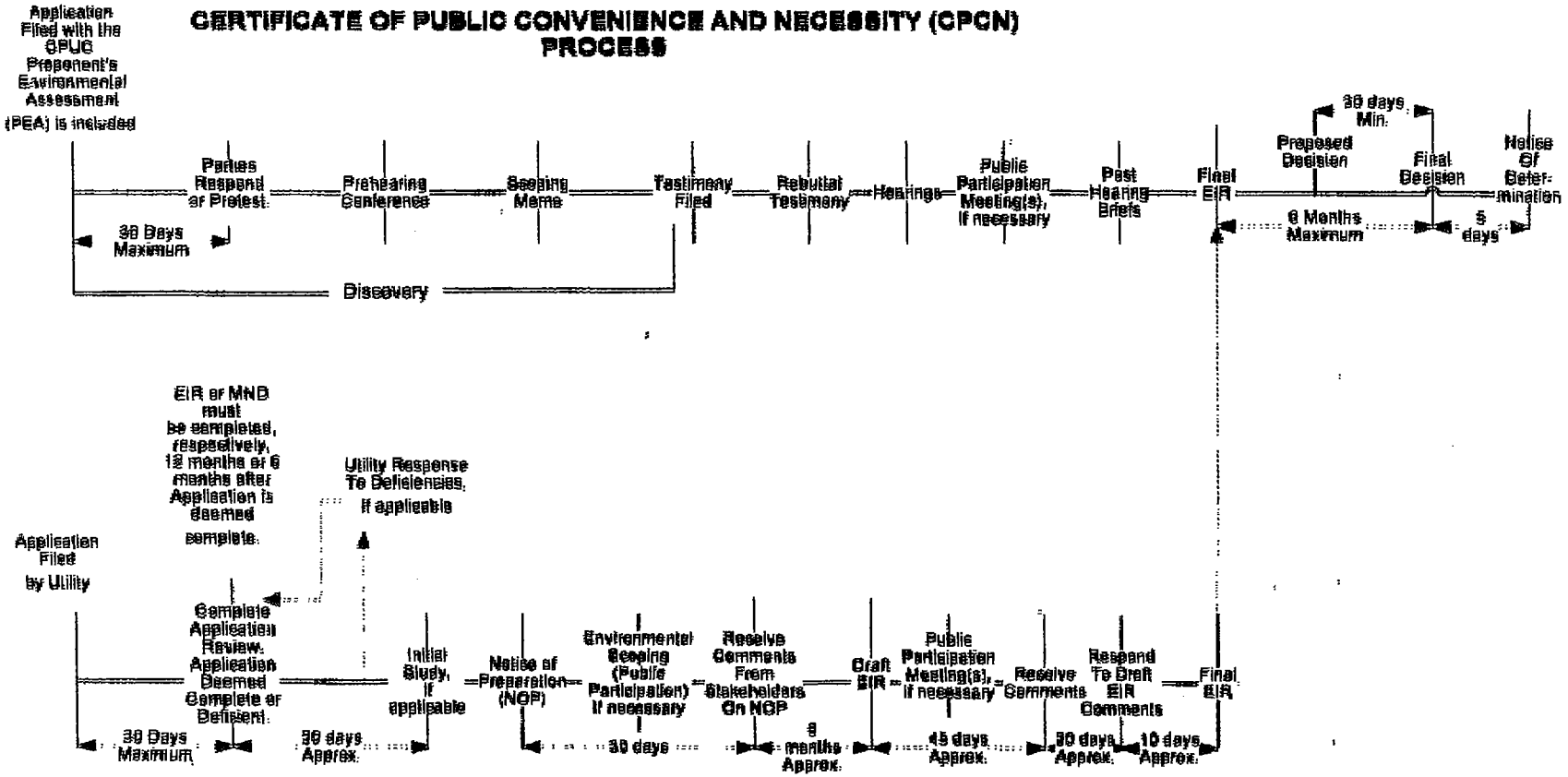
FREQUENTLY ASKED QUESTIONS ABOUT THE CALIFORNIA PUBLIC UTILITIES COMMISSION'S CALIFORNIA ENVIRONMENTAL QUALITY ACT PROCESS

17. How can I learn more about CEQA?

Additional information about CEQA, including the text of the law and the text of the CEQA Guidelines is available at:

http://ceres.ca.gov/ceqa/

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (CPCN) PROCESS



CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PROCESS

* This is a typical CPCN and Environmental Impact Report (EIR) CEQA timeline, however, the schedule may vary based on the complexity of the project.

October 2006

WORKING PAPER RE:
CONCEPTUAL ALTERNATIVES TO A NEW 500 KV BRUCE TRANSMISSION LINE
Reinforcing the Path Through Longwood using HTLS, SC & SVC's

Description of Conceptual Alternative	Cost Estimate ($ M)
Bruce x Longwood (B562L & B563L): Provide 2 x 70% 500 kV series capacitor installations rated at 4000 A, each one consisting of a 30% fixed series cap bank and a 40% Thyristor Controlled Series Capacitor (TCSC) bank. Install at a new station site near Grand Bend. Assume protection modifications at all terminal stations, protection and control and monitoring.	265
Nanticoke x Longwood (N582L): Provide 1 x 70% 500 kV series capacitor installation rated at 5,000 A continuous consisting of a 30% fixed series cap bank and a 40% TCSC installation. Install at a new station site near Tillsonburg. Assume protection modifications at all terminal stations, protection and control and monitoring.	180
Bruce x Longwood (B562L & B563L): Reconductor with a conductor that can achieve an ampacity at 35 degrees C, 4 km/h wind of at least 4,000 A continuous without requiring structure changes. This could be either quad 732 compact conductor if that conductor can achieve that rating, or a high temperature low sag conductor such as ACCR. Needs to be confirmed	220
Nanticoke x Longwood (N582L): Reconductor with a conductor that can achieve an ampacity at 35 degrees C, 4 km/h wind of at least 5,000 A continuous without requiring structure changes. This could be either quad 732 compact conductor if that conductor can achieve that rating, or a high temperature low sag conductor such as ACCR	105
Install the Following SVC's. Each SVC to consist of banks of Thryistor Switched Capacitors (TSC) with coupling transformers similar to the 350 MVAr TSC's recently estimated for business planning purposes at Nanticoke & Detwieler TS	
1. Longwood TS, 1 x 350 MVar and 1 x 150 MVAr connected at 500 kV	125
2. Nanticoke TS, 4 x 350 MVAr (2 connected at 230 kV & 2 at 500 kV) and 1 x 150 MVAr connected at 500 kV	310
3. Milton SS, 1 x 350 MVar and 1 x 150 MVAr connected at 500 kV. Assume two new 500 kV GIS breakers	150
4. Detweiler TS, 1x 350 MVAr connected at 230 kV	70
Reconductor the following 230 kV circuits with high sag low temperature conductor that can achieve an ampacity at 35 degrees C, 4 km/h wind of at least 2,000 A continuous with requiring structure changes. On circuits with taps, reconductor the main circuits only:	
1. W42L & W43L (Longwood x Buchanan)	25
2. W44LC & W45LC (Longwood x Buchanan x Chatham)	50
3. D4W & D5W (Detweiler x Buchanan)	35
4. M31W, M32W & M33W (Middleport x Buchanan)	65
5. T36B, T37B, T38B, & T39B) Trafalgar x Burlington	30
6. R14T, R17T, R19T & R21T (Richview x Trafalgar)	25
Install 30% fixed 230 kV series capacitor banks rated at 2,000 A continuous at new station sites located at the approximate mid-points of the following 230 kV circuits.	
1. W42L	10
2. W43L	10
3. W44LC (Longwood x Buchanan section)	10
4. W45LC (Longwood x Buchanan section)	10
5. D4W	15
6. D5W	15
7. M31W	15
8. M32W	15
9. M33W	15
GRAND TOTAL OF ALL ALTERNATIVES	1770
Note: Cost estimates are based on past similar projects and/or engineering judgement.	

April 24, 2008