

November 16, 2007

BY COURIER (2 COPIES) AND EMAIL

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Ontario Energy Board
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Dear Ms. Walli:

**Re: Pollution Probe – Initial Submissions for Issues List
EB-2007-0707 – OPA – IPSP and Procurement Processes – Phase 1**

We are writing to provide Pollution Probe's initial submissions regarding the Issues List for this matter in accordance with the Ontario Energy Board's *Notice of Application*. As it remains unclear how the Board intends to proceed, Pollution Probe again submits that oral hearings will likely be necessary in light of the issues discussed below and in Pollution Probe's previous intervenor request dated November 6, 2007.

Summary

Pollution Probe submits that 10 additional issues should be explicitly added to the Issues List proposed by the Ontario Power Authority (the "OPA") given the nature and content of the OPA's application regarding the Integrated Power System Plan ("IPSP") and Procurement Processes. Pollution Probe's additional issues can be grouped into three broad categories:

1. Lower Cost/Lower Risk Options;
2. Coal Phase-out Issues; and
3. Procurement Issues.

The individual issues are detailed below, and Pollution Probe submits that these additional issues do not limit what may be raised through the broad nature of the OPA's proposed Issues List.

Detailed Additional Issues

1. Lower Cost/Lower Risk Options

Additional Issue #1: *Could the OPA meet Ontario's electricity service needs at a lower cost or with less risk (or both) by additional procurement from some or all of the following resources:*

- a) *demand response,*
- b) *energy efficiency,*
- c) *end-use fuel switching,*
- d) *renewable energy,*
- e) *combined heat and power,*
- f) *natural gas-fired combined-cycle generation, and/or*
- g) *conversion of some of OPG's coal boilers to natural gas?*

Pollution Probe submits that the OPA's proposed IPSP lacks balance when one examines it in detail. For example, the IPSP proposes to meet more than 50% of Ontario's electricity needs from only one supply source (i.e. nuclear generation). In addition, the IPSP proposes low levels of spending on conservation and demand management ("CDM") and distributed generation ("DG") relative to its proposed high levels of spending on large-scale centralized power plants and high-voltage transmission lines (even though CDM and DG may meet the same needs at a much lower cost and risk).

In addition, the OPA's underlying assumptions for proposed new or rebuilt nuclear reactors appear to be very optimistic relative to Ontario's historical experience and market data. For example, the IPSP's assumptions for nuclear generation with respect to its capital cost, its costs due to the return rate on capital (i.e. 4%), its capacity utilization rates and its economic life (i.e. 40 years) do not accord with either historical experience or current market data.

In light of these and other factors, Pollution Probe accordingly submits that the Board should actively explore whether Ontario can instead meet its electricity service needs at a lower cost or with less risk (or both) by aggressively pursuing additional CDM and alternative non-nuclear supply sources.

Additional Issue #2: *Could Ontario meet its electricity service needs between now and 2015 at a lower cost by reducing or eliminating the need for up to 1350 MW of new simple-cycle gas-fired generation capacity by:*

- a) *additional procurement from some or all of the following resources: demand response, energy efficiency, end-use fuel switching, renewable energy and combined heat and power;*
- b) *converting one or more of OPG's coal-fired units to natural gas; or*
- c) *any combination of the above?*

Pollution Probe submits that it is neither prudent nor cost effective for the OPA to procure 1350 MW of new simple-cycle gas-fired generation capacity that will be idle for most of the time (e.g. about 97.5% of the year in 2015). Pollution Probe accordingly submits that the Board should also actively explore whether Ontario's electricity service needs could instead be met at a lower cost by using the above-noted alternatives.

Additional Issue #3: Has the OPA misinterpreted the Government of Ontario's base-load supply directive?

Pollution Probe submits that the IPSP's definition of base-load is inconsistent with the intent of the Government's directive.

For contrast purposes, the OPA, in its *Supply Mix Advice Report* dated December 2005, previously defined a base-load plant as "[a] plant which is normally operated continuously and at a constant rate, to meet all or part of the minimum load of a system."¹ This definition is consistent with the OPG Review Committee's definition of base-load, which is "[t]he minimum continuous load over a given period of time,"² and, when one applies these definitions, Ontario's base-load generation requirement in 2006 accordingly was 11,621 MW.

However, for the IPSP, the OPA instead interprets base-load requirements to be all requirements that can be met by nuclear generation at a lower cost than natural gas-fired combined-cycle generation,³ which is allegedly about 19,000 MW.

Pollution Probe accordingly submits that the IPSP's definition of base-load is novel and inconsistent with the definition used previously (including by both the OPA and the OPG Review Committee) as well as the intent of the Government's directive.

The problems with IPSP's definition of base-load become apparent when one considers that, according to the IPSP's definition and the OPA's optimistic assumptions regarding nuclear generation (which Pollution Probe disputes as detailed above and below), a nuclear power plant with an average capacity utilization rate of 46% would be a base-load plant. In the alternative, even if one were to accept the OPA's novel definition of base-load, Pollution Probe submits that the OPA has miscalculated what would qualify as part of Ontario's base-load requirements by using erroneous assumptions for nuclear generation, including the assumptions with respect to capital cost, costs due to the return rate on capital, and economic life.

¹ Ontario Power Authority, *Supply Mix Advice Report* dated December 2005, at vol. 1, p. 98. Available online at http://www.powerauthority.on.ca/Report_Static/157.htm.

² OPG Review Committee, *Transforming Ontario's Power Generation Company* dated March 18, 2004, at p. 82 (Appendix D). Available online at http://www.energy.gov.on.ca/index.cfm?fuseaction=electricity.reports_opgreview.

³ See Exhibit D, Tab 3, Schedule 1, Attachment 1

Additional Issue #4: Could Ontario meet its base-load needs at a lower cost or with lower risk (or both) by additional procurement from some or all of the following resources:

- a) *combined heat and power,*
- b) *natural gas-fired combined-cycle generation, and*
- c) *hydro-electric power imports?*

Pollution Probe submits that there is an inherent need to determine whether aggressive procurement targets for non-nuclear base-load resources could meet Ontario's base-load needs at a lower cost or with a lower risk (or both).

While the Government's supply directive to the OPA established minimum targets for procurement from conservation and new renewable generation, it did not establish a minimum target for procurement from nuclear generation. In other words, the directive does not require the OPA to *necessarily* contract for additional nuclear resources. Nevertheless, the IPSP includes very aggressive procurement targets for nuclear generation on the basis of what Pollution Probe believes are very optimistic assumptions about new or rebuilt nuclear reactors. In addition, Pollution Probe submits that these optimistic assumptions do not correspond to Ontario's historical experience or market data. For example, Pollution Probe submits that the assumptions regarding:

- a) capital costs are low;
- b) costs due to the return rate on capital (i.e. 4%) are low;
- c) capacity utilization rates are high; and
- d) the economic life (i.e. 40 years) are high.

Pollution Probe thus submits that there is an inherent need to determine if more aggressive procurement targets for *non*-nuclear base-load resources are instead more appropriate.

Additional Issue #5: Are the IPSP's avoided cost estimates reasonable?

Pollution Probe submits that the OPA's avoided cost estimates in the IPSP appear to be very low since they are based on overly optimistic assumptions about the costs of new or rebuilt nuclear generation. For example (and as detailed previously), the OPA appears to be underestimating capital costs and the costs due to the return rate on capital for nuclear generation. In addition, the OPA appears to be overestimating the capacity utilization rates and economic life for nuclear generation. The result of these faulty assumptions is artificially low avoided cost estimates for nuclear generation, which in turn make CDM, renewable, combined heat and power and combined-cycle generation appear to be less cost-effective than they really are.

Additional Issue #6: Can Ontario's electricity service needs be met at a lower cost or with less risk (or both) by supplementing the IPSP with rate reform that brings the price of electricity closer to its true cost?

Pollution Probe submits that there is currently a significant gap between Ontario's electricity prices and the true cost of new electricity supply. Pollution Probe further submits that this significant gap discourages market-driven investments in conservation and new electricity supply, and thus reducing or eliminating this gap is potentially the single most important step that could be taken to promote a culture of conservation in Ontario. In addition, Pollution Probe submits that the results of reducing or eliminating this gap include the significant potential of reducing the OPA's need to procure both conservation and supply-side resources as well as potentially facilitating Ontario's movement to a truly competitive electricity market. Pollution Probe thus submits that the Board should actively explore whether Ontario's electricity service needs could be met at a lower cost or with less risk (or both) by supplementing the IPSP with rate reform that brings the price of electricity closer to its true cost.

2. Coal Phase-Out Issue

Additional Issue #7: Could Ontario achieve larger and faster reductions in its pre-2015 coal-fired electricity generation (in MWh), while ensuring adequate generating capacity and electricity system reliability, by:

- a) *banning non-emergency coal-fired electricity exports;*
- b) *dispatching natural gas-fired generation in advance of coal-fired generation;*
- c) *additional procurement from some or all of the following resources: demand response, energy efficiency, end-use fuel switching, renewable energy, combined heat and power and natural gas-fired combined-cycle generation; or*
- d) *any combination of the above?*

Pollution Probe submits that the Board should examine whether larger and faster coal-fired generation reductions than outlined in the IPSP can occur to allow for faster compliance with the Government's directive regarding the cessation coal-fired generation. If such reductions can occur, Pollution Probe further submits that the Board should examine how such reductions can occur.

According to the supply mix directive from the Minister of Energy dated July 13, 2006, the OPA must: "[p]lan for coal-fired generation in Ontario to be replaced by cleaner sources in the earliest practical time frame that ensures adequate generating capacity and electricity system reliability in Ontario." Furthermore, the Government of Ontario has set December 31, 2014 as the final legal deadline for a complete coal phase-out (although Pollution Probe notes that compliance with the Government's directive can and should occur before then if practical).

However, despite this directive, the IPSP appears to ignore whether banning non-emergency coal-fired electricity exports could permit Ontario to achieve significantly larger and faster coal-fired generation reductions in order to comply with the Government's directive in advance of the final deadline. Similarly, the IPSP appears to ignore whether dispatching natural gas-fired generation in advance of coal-fired generation could also permit Ontario to achieve significantly larger and faster coal-fired generation reductions. Accordingly, Pollution Probe submits that the Board should examine these two options in order to determine if they would allow for faster compliance with the Government's directive regarding the cessation of coal-fired generation.

Pollution Probe also submits that, in addition to the two previously noted options, there is a similar need to explore whether it is practical to achieve larger reductions in Ontario's pre-2015 coal-fired generation by additional procurements from more CDM, generation from renewable resources, and natural gas-fired generation.

3. Procurement Issues

Additional Issue #8: *Should the OPA's procurement processes for base-load generation:*

- a) deny a supplier the ability to pass on its capital cost overruns to the OPA;*
- b) subject a supplier to financial penalties if the supplier fails to achieve its in-service or production performance targets;*
- c) permit the OPA to terminate a contract if a supplier fails to achieve in-service or performance targets;*
- d) require suppliers to be fully responsible for all of their decommissioning and waste disposal costs;*
- e) permit hydro-electricity, combined heat and power, and natural gas-fired combined-cycle generation to compete with nuclear generation in procurement processes currently allocated for nuclear generation; or*
- f) any combination of the above?*

Pollution Probe submits that Ontario's nuclear fleet has been unfortunately plagued for decades by capital cost overruns and poor operating performance. Pollution Probe thus submits that the risks of poor generator performance should be shifted from ratepayers to nuclear generators to hopefully reduce the future likelihood that history will repeat itself.

Pollution Probe further submits that, in order to obtain accurate Ontario-specific market data on the true costs and risks of the various base-load options, all base-load supply options should be allowed to compete in supply procurement processes currently allocated for nuclear generation (i.e. by including other sources here, such as hydro-electricity, combined heat and power, and combined-cycle natural gas-fired generation, accurate and comparable market information can be obtained for *all* supply options). This market competition is important because, as noted previously, a substantial difference in opinion exists between Pollution Probe and the OPA on the economic costs

and risks of new or rebuilt nuclear reactors relative to other potential sources of base-load supply, and Pollution Probe submits that nuclear generators, not ratepayers, should fully bear and account for these costs and risks when they participate in a truly competitive procurement process.

Pollution Probe thus submits that a competitive procurement process open to multiple energy sources will almost certainly provide Ontario with base-load resources at a lower cost (in accordance with market principles) than a procurement process which arbitrarily excludes hydro-electricity, combined heat and power and combined-cycle natural gas-fired generation.

Additional Issue #9: Should the OPA implement, in a competitive and transparent manner, a process or processes to maximize the OPA's procurement of cost-effective demand response resources before the OPA seeks to procure new supply-side peaking resources?

Pollution Probe submits that it is reasonable to maximize the procurement of cost-effective demand response resources before seeking to procure supply-side peaking resources at a much higher cost.

Pollution Probe submits that, according to the Government of Ontario, demand response resources have a higher priority than supply-side peaking resources. Pollution Probe further submits that it is also reasonable to assume that a very significant quantity of demand response resources can be achieved at a substantially lower cost than the cost associated with new simple-cycle natural gas-fired generation that will be idle for most of the time (e.g. about 97.5% of the year in 2015 according to the OPA's proposed IPSP). As a consequence, the aggressive procurement of demand response resources could substantially reduce or completely eliminate the need for new peaking generation, and Pollution Probe submits that it is reasonable to maximize the procurement of cost-effective demand response resources before seeking to procure more expensive supply-side peaking resources.

Additional Issue #10: Should the OPA implement, in a competitive and transparent manner, a process or processes to maximize the OPA's procurement of cost-effective combined heat and power ("CHP") resources before the OPA procures additional nuclear generation resources?

Pollution Probe submits that it is reasonable to maximize the procurement of cost-effective CHP generation before Ontario starts to procure new or rebuilt nuclear generation.

Pollution Probe submits that a substantial quantity of potential CHP generation appears to exist which could meet Ontario's electricity service needs at a lower cost with lower risk and more quickly compared to the cost, risk, and time associated with new or rebuilt

nuclear generation. Pollution Probe further submits that the aggressive procurement of CHP is consistent with the Government's directive to "pursue applications that allow high efficiency and high value use" of natural gas. Pollution Probe thus submits that it is reasonable to maximize the procurement of cost-effective CHP generation before Ontario starts to procure new or rebuilt nuclear generation.

Conclusion

For the reasons detailed above, Pollution Probe submits that these 10 additional issues should be added to the Issues List for this matter. Pollution Probe also submits that, given the nature of the proceeding and the issues, oral hearings should be held to resolve any disputes between the parties regarding what issues should be on the Issues List.

Yours truly,

"Murray Klippenstein"
Per RL

Murray Klippenstein

MK/ba

cc: Ontario Power Authority by email to EB-2007-0707@powerauthority.on.ca