

EB-2016-0152 Comments on the OPG responses to Sustainability-Journal's interrogatories

Filed: 2016-10-26

EB-2016-0152

Exhibit L

Tab 1.2

Schedule 18 SJ-001

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1 SJ Interrogatory #1

2

3 Issue Number: 1.2

4 Issue: Are OPG's economic and business planning assumptions that impact the
5 nuclear facilities appropriate?

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8 Interrogatory

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10 Reference:

11

12 OPG has assembled a plan that assumes that most of the elements will inevitably be
13 approved in the future even though most of those elements have not in fact been approved,
14 and there is a great deal of evidence to suggest that they should not be approved. Their
15 submission as it stands fails to deal with the most fundamental questions:

16

17 Is there a need in Ontario for refurbishment of the nuclear stations?

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20 Response

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22 OPG can only respond regarding the Darlington Refurbishment Program. The Ministry of
23 Energy, which is ultimately responsible for energy planning in Ontario, has endorsed the
24 DRP. Moreover, the Province has removed the question of the need for DRP from this
25 hearing by amending to O. Reg. 53/05 to add section 12 (v), which reads: "the Board shall
26 accept the need for the Darlington Refurbishment Project in light of the Plan of the Ministry of
27 Energy known as the 2013 Long-Term Energy Plan and the related policy of the Minister
28 endorsing the need for nuclear refurbishment."

Witness Panel: Overview, Rate-setting Framework

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Schedule 18 SJ-002

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Comments:

Ontario Regulation 353/15 states that the "Darlington Refurbishment Project" means the work undertaken by Ontario Power Generation Inc. in respect of the refurbishment, in whole or in

part, of some or all of the generating units of the Darlington Nuclear Generating Station.

The Ontario cabinet has approved the refurbishment of Unit 2 but has not as yet approved the work on Units 1, 3 or 4. OPG has already started the refurbishment of Unit 2 without waiting for a response from the OEB, and that construction will be half finished, and the costs will be nearly fully commuted, before the OEB issues its findings. The refurbishment of Unit 2 satisfies the regulatory requirements for the "Darlington Refurbishment Project" even if Units 1, 3 and 4 are not refurbished.

The Board is empowered to conduct a review of whether the OPG generation plans are in the public interest. As they stand those plans appear to neglect the potential for making better use of OPG's hydro facilities and they appear to overstate the need for nuclear power generation. The OPG plans assume that all four units have been approved for refurbishment, which is not the case, and they assume that the four units will be approved by the Board even if that construction is not in the public interest, which is an assumption that the Board may want to review.

1 SJ Interrogatory #2

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3 Issue Number: 1.2

4 Issue: Are OPG's economic and business planning assumptions that impact the nuclear
5 facilities appropriate?

6

7

8 Interrogatory

9

10 Reference:

11

12 OPG has assembled a plan that assumes that most of the elements will inevitably be
13 approved in the future even though most of those elements have not in fact been approved,
14 and there is a great deal of evidence to suggest that they should not be approved. Their
15 submission as it stands fails to deal with the most fundamental questions:

16

17 Is the nuclear option economically viable?

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20 Response

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22 Please see Ex. L-1.2-18 SJ-1.

Witness Panel: Overview, Rate-setting Framework

Filed: 2016-10-26

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Comments:

From the public's point of view the OPG is asking the wrong question. In effect the OPG is asking "Will you guarantee that we will recover 12.6 billion dollars if we try to refurbish four reactors in a cost-effective manner and if the OPC is permitted to run the Pickering station for an additional six years?"

From the public's point of view that is a terrible deal:

- * it obstructs the potential to use renewable energy alternatives that would be less expensive by many billions of dollars**
- * it blocks the potential for Ontario to meet the Paris Climate Change Agreement**
- * it contravenes the recently signed CETA Agreement, which requires that the standards like those for Tritium emissions be brought into alignment**
- * it will result in large amounts of nuclear waste being produced**
- * it perpetuates the hazards of operating nuclear power stations, including the release of thermal pollution and radionuclides**
- * it fails to deal with both the costs and the GHG emissions of the fossil fuelled stations that are operated by OPG and others**
- * it presents very large risks of delays, cost overruns, cancellation (as has happened in other countries), plant failures, etc.**
- * it aggravates an already serious problem in that high electricity costs are undermining Ontario's economy.**

1 SJ Interrogatory #3

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3 Issue Number: 1.2

4 Issue: Are OPG's economic and business planning assumptions that impact the nuclear
5 facilities appropriate?

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8 Interrogatory

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10 Reference:

11

12 OPG has assembled a plan that assumes that most of the elements will inevitably be
13 approved in the future even though most of those elements have not in fact been approved,
14 and there is a great deal of evidence to suggest that they should not be approved. Their

15 submission as it stands fails to deal with the most fundamental questions:

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17 Is the nuclear option compatible with the commitments to achieve environmental
18 sustainability?

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21 Response

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23 Yes. Over the period covered by this application, OPG's nuclear generating facilities are
24 forecast to produce about 188 TWh of baseload energy that is virtually free of greenhouse
25 gases or smog.

Witness Panel: Overview, Rate-setting Framework

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Tab 1.2

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Comments:

Two years ago Tolmie and Rosen showed how exergy storage systems could deliver 912 TWh of energy over the same period (compared to 188 TWh from OPG) but OPG has failed to explain how their much more expensive (and hazardous) alternative offers any advantages. The OPG "solution" assumes that Ontario will continue to use natural gas for peaking stations and for heating/DHW applications which will result in GHG emissions exceeding 100 million tonnes of CO2 (Ontario government figures misrepresent this total because they ignore delayed and fugitive emissions and use an incorrect GWP value for methane). The nuclear emissions and waste products add to the environmental burden from the OPG plan.

1 SJ Interrogatory #4

2

3 Issue Number: 1.2

4 Issue: Are OPG's economic and business planning assumptions that impact the nuclear
5 facilities appropriate?

6

7

8 Interrogatory

9

10 Reference:

11

12 OPG has assembled a plan that assumes that most of the elements will inevitably be
13 approved in the future even though most of those elements have not in fact been approved,
14 and there is a great deal of evidence to suggest that they should not be approved. Their
15 submission as it stands fails to deal with the most fundamental questions:

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17 All of the OPG nuclear stations are very old and will soon need to be replaced by new
18 stations, at a cost that is so high that it could bankrupt the province.

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21 Response

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23 OPG disagrees with this statement. The application presents the work and associated
24 funding required to refurbish the Darlington station and to extend the operation of Pickering.
25 Both these projects have been endorsed by the Province. The application does not seek
26 funding to construct replacement stations.

Witness Panel: Overview, Rate-setting Framework

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Comments:

Nuclear power is no longer competitive with other technologies for providing energy in both electrical and thermal forms. Both nuclear and renewable energy sources share a need for a means of storage that enables the energy systems to match supply and demand. Exergy storage provides that missing element for both the power grid and for heating/cooling systems but the Energy Ministry (and the IESO) have refused to consider the general adoption of exergy storage even though a crude version is widely employed in their own buildings (see the current IESO web site outline of their future plans). Hopefully the new review of the LTEP will correct that oversight.

The next round of nuclear stations will require more than just the replacement of the tubes so it will be much more expensive. A switch to a distributed source model will require a decade or more to implement and it will need to be phased in. The same is true for a mixed model in which nuclear and distributed systems vie for a dominant share of the market, but the time to open up the potential for phasing in new technologies is right now.

1 SJ Interrogatory #5

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3 Issue Number: 1.2

4 Issue: Are OPG's economic and business planning assumptions that impact the nuclear
5 facilities appropriate?

6

7

8 Interrogatory

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10 Reference:

11

12 OPG has assembled a plan that assumes that most of the elements will inevitably be
13 approved in the future even though most of those elements have not in fact been approved,

14 and there is a great deal of evidence to suggest that they should not be approved. Their
15 submission as it stands fails to deal with the most fundamental questions:

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17 The plan that has been proposed by OPG would obstruct Ontario's ability to implement
18 alternatives that would be more economically and environmentally viable.

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21 Response

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23 OPG disagrees with this statement. Both the Darlington Refurbishment Program and the
24 extended operation of Pickering have been endorsed by the Ministry of Energy following
25 consideration of alternatives.

Comments:

This OPG argument could be applied to every detail of the plan - that since the DRP has been "endorsed" by the Ministry of Energy the OPG is taking the position that everything in the plan has been pre-approved by the government so there is no role for the OEB or the public to play in the process. Although many alternatives to nuclear power have been proposed the Ministry of Energy has never been willing to openly discuss how it has made its choices. New technologies are now making it possible to switch to decentralized systems that will no longer require central monopolies like OPG/Bruce. For example, exergy stores could provide about 88% of the energy needs of our homes, with distributed hydro, wind and solar generators providing the balance. The reduction in the use of fossil fuels would be inversely proportional to the size of the market that is set aside for the current oligarchy. The OPG hearings do provide the public and the developers of the alternatives with a means of participation that is missing in the Ministry's own practices.

If the Board decides to approve the OPG plan for Unit 2 but defers decisions on the other three units then the current LTEP review that is underway will at least provide an opportunity for us to submit a case for phasing in a distributed energy system that will be less expensive, safer and much more environmentally acceptable. OPG should be encouraged to cooperate in opening up the market and might even participate by building energy storage facilities of its own, thus closing down its oil and gas-fired stations. There is also considerable scope for enhancing its own hydro stations. Ontario will need to update its policies to conform to the Paris and CETA Agreements and that will also take time, and will entail an effort to remove some of the current obstructions to change.

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