Federal Court  Cour fédérale

Date: 20140514

Dockets: T-1572-11
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Citation: 2014 FC 463

Ottawa, Ontario, May 14, 2014

PRESENT: The Honourable Mr. Justice Russell

BETWEEN:

GREENPEACE CANADA,
LAKE ONTARIO WATERKEEPER,
NORTHWATCH AND CANADIAN
ENVIRONMENTAL LAW ASSOCIATION

Applicants

and

ATTORNEY GENERAL OF CANADA,
MINISTER OF THE ENVIRONMENT,
MINISTER OF FISHERIES AND OCEANS,
MINISTER OF TRANSPORT,
CANADIAN NUCLEAR SAFETY COMMISSION
AND ONTARIO POWER GENERATION INC.

Respondents

AND BETWEEN:

GREENPEACE CANADA
AND CANADIAN ENVIRONMENTAL
LAW ASSOCIATION

Applicants

and

ATTORNEY GENERAL OF CANADA AND
ONTARIO POWER GENERATION INC.

Respondents

REASONS FOR JUDGMENT AND JUDGMENT

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INTRODUCTION

[1] This judgment relates to two applications for judicial review under s. 18.1 of the *Federal Courts Act*, RSC 1985, c F-7 [Federal Courts Act] in relation to the Darlington New Nuclear Power Plant Project (Project) proposed by Ontario Power Generation (OPG). The first application challenges the adequacy of the federal environmental assessment (EA) conducted by a joint review panel (JRP or Panel) established under a March 2009 agreement between the federal Minister of the Environment (Minister) and the Canadian Nuclear Safety Commission (CNSC) pursuant to s. 40 of the *Canadian Environmental Assessment Act*, SC 1992, c 37 (CEAA or the Act). Because the assessment was concluded on August 25, 2011, the governing statute is the CEAA, which has since been repealed and replaced. The second application challenges a Site Preparation Licence (Licence) that was issued by the CNSC to OPG on August 17, 2012 under the *Nuclear Safety and Control Act*, SC 1997, c 9 (NSCA), following the completion of the EA and the Government of Canada's response to the Panel's Environmental Assessment Report (EA Report).

BACKGROUND

[2] In June 2006, the Ontario Minister of Energy directed OPG, which is wholly owned by the Province of Ontario, to begin the process of seeking federal approval for new nuclear power generation units at an existing site. This directive coincided with a Supply Mix Directive issued to the Ontario Power Authority, indicating that a combination of new and refurbished nuclear units would be needed to meet future base-load energy requirements in Ontario. The Government of Ontario later selected the existing Darlington nuclear site as the preferred site for the Project. In September 2006, OPG applied to the CNSC for a licence to prepare the Darlington site for the

construction of a new nuclear power generation facility involving up to four new nuclear reactors. The Darlington site is located in Bowmanville, Ontario, on the north shore of Lake Ontario, in the Municipality of Clarington, and is the location of the existing Darlington Nuclear Generating Station (Darlington NGS).

[3] Under the *Law List Regulations*, SOR/94-636 (Law List Regulations), an environmental assessment was required before the Licence could be granted. The Project proposed by OPG – which includes the construction, operation, decommissioning and abandonment of the proposed reactors and the management of the associated conventional and radioactive waste – also required other federal approvals that would trigger a CEAA assessment under the Law List Regulations, including authorizations under s. 35(2) of the *Fisheries Act*, RSC 1985, c F-14 (Fisheries Act) and s. 5 of the *Navigable Waters Protection Act*, RSC 1985, c N-22 (NWPA) (now titled the *Navigation Protection Act*). The CNSC requested that the Minister refer the Project for review by a joint review panel, which the Minister did in March 2008. The Panel was "joint" in the sense that it was to conduct an environmental assessment of the Project under the CEAA, and was also to function as a CNSC panel for the purpose of reviewing the Licence application.

[4] In September 2008, the Minister and the CNSC published drafts of the Environmental Impact Statement Guidelines (EIS Guidelines) for the Project and the Joint Review Panel Agreement (Agreement), including the Panel's Terms of Reference (Terms of Reference), for public comment. The EIS Guidelines provided direction to OPG on how to develop its Environmental Impact Statement (EIS) for the Panel's consideration, and the Agreement outlined

the framework for the establishment of the Panel and the conduct of the joint review. The final versions of these documents were published on March 12, 2009, after public comments were received and considered. Both documents stated that a range of designs were being considered and no decision had yet been made regarding reactor technology.

[5] On September 30, 2009, OPG filed its EIS, along with supporting documents and a revised Site Preparation Licence application. Since no specific nuclear reactor technology had been selected, OPG prepared its EIS based on what it called a "bounding approach" – also referred to as a "plant parameter envelope" (PPE) or "bounding scenario" approach – encompassing several possible reactor technologies. As described by OPG in its submissions to the Court, this approach involves identifying the salient design elements of the Project and, for each of those elements, applying the "limiting value" (the value with the greatest potential to result in an adverse environmental effect) based on the design options being considered. In theory, this results in a composite picture of the maximum expected environmental impact – the bounding scenario or PPE.

[6] Initially, three technology options were considered in developing the bounding scenario, referred to as the ACR-1000, US EPR, and AP1000 options. Later in the process, the Enhanced CANDU-6 (EC-6) reactor technology was added as an option, though it was not addressed in the EIS. OPG says the EC-6 option was added to the PPE model in July 2010 based on a letter from the CNSC to the Panel Chair. The letter explained that the PPE approach is meant to provide a generic "technology-neutral" EIS, and including the EC-6 technology in the Panel's review would provide flexibility at later stages of the Project and minimize the likelihood that another

EA would be required should the EC-6 technology be selected by OPG. The Panel requested additional information from OPG to facilitate its assessment of the EC-6 option. In October 2010, the Applicants objected to what they characterized as the late inclusion of the EC-6 design based on fairness and other grounds, but these objections were rejected by the Panel.

[7] The three member Panel was appointed on October 30, 2009. In November 2009, the Panel began its review of the sufficiency of the EIS. This included the consideration of comments and recommendations from the public, CNSC staff and other interested parties, including government agencies and departments, over the course of 11 months. These submissions included a letter from CNSC staff to the Panel secretariat dated November 2, 2009 stating that the EIS contained all of the information required by the EIS Guidelines and the regulations applicable to site preparation under the NSCA.

[8] The Panel made 284 requests to OPG for additional information related to the EIS, and 26 requests relating to the Licence application, based in part on the comments received. Technical briefing sessions open to the public were held at CNSC headquarters in December 2009 and June 2010. Comments on the sufficiency of the EIS were accepted up until October 8, 2010. The Panel concluded in December 2010 that the EIS and the supplementary responses from OPG contained sufficient information to enable the Panel to proceed to public hearings on the Project.

[9] These hearings were held over 17 days between March 21 and April 8, 2011. The Applicants participated as interveners during both the public hearings and the pre-hearing

proceedings. On the final day of the hearings, the Panel released a revised procedure for written comments, permitting hearing participants (other than OPG) to make final written submissions by May 17, 2011, and OPG to make final written submissions by May 22, 2011. On June 3, 2011, the Panel gave notice that it had obtained and made public all of the information needed to prepare its report, and closed the record for the EA.

[10] On August 25, 2011, the Panel completed the EA and submitted the EA Report to the Minister. The EA Report concluded that the Project is not likely to cause significant adverse environmental effects, provided the mitigation measures proposed and the commitments made by OPG during the review, as well as the Panel's 67 recommendations, are implemented.

[11] On September 23, 2011, the Applicants initiated the first of the judicial review applications under consideration here (T-1572-11), challenging the adequacy of the EA and the EA Report.

[12] Once an EA Report is submitted by a review panel, the responsible authorities prepare a Government Response, which is presented to the Governor in Council (Cabinet) for approval. "Responsible authorities" is a defined term referring in this case to federal departments or agencies that must make some decision or take some action in order for a project to move forward, and who are therefore responsible for ensuring the EA is conducted (see CEAA, ss. 2(1), 5(1)(d), 11(1)). In this case, the CNSC, the Department of Fisheries and Oceans (DFO) and Transport Canada are responsible authorities, and the Respondent Attorney General of Canada

(AGC) indicates that the Department of Natural Resources and Health Canada were also involved in drafting the Government Response.

[13] The Government Response was issued on May 2, 2012, stating that the Government had concluded that the Project is not likely to cause significant adverse environmental effects. The Act requires responsible authorities to take a "course of action" that is consistent with the Cabinet-approved Government Response (see CEAA, s. 37(1.1)(c)). On May 8, 2012, the responsible authorities announced their "course of action decision" (or Final Decision) stating that the responsible authorities may exercise any power or perform any duty or function with respect to the Project because they are of the opinion that it is not likely to cause significant adverse environmental effects.

[14] On August 17, 2012, the Panel, acting as a panel of the CNSC for the purposes of the Licence application, issued a ten-year licence to OPG to undertake a range of site preparation activities in relation to the Project.

DECISIONS UNDER REVIEW

[15] The EA Report, submitted by the Panel to the Minister on August 25, 2011, is 143 pages in length (plus appendices) and includes 67 recommendations directed to federal, provincial and municipal governmental authorities. The EA Report's overall conclusion was that "the Project is not likely to cause significant adverse environmental effects, provided the mitigation measures proposed and commitments made by OPG during the review and the Panel's recommendations are implemented": EA Report at p. 143.

[16] With respect to the use of the PPE approach, the Panel made the following observations at page 45 of the Report:

> The Panel accepts the use of a plant parameter envelope for environmental assessment purposes as an approach that allows the prediction of adverse environmental effects for a select group of reactor technologies. The Panel recognizes, however, that this is a departure from a more standard approach where the major components of a project are defined in advance of an environmental assessment.
>
> Additionally, the Panel notes that aspects of the plant parameter envelope were based on preliminary design information. As such, there will be a need for ongoing verification of the conclusions reached on the significance of adverse environmental effects.

[17] The Panel stated that if the Project is to go forward, the selected reactor technology "must be demonstrated to conform to the plant parameter envelope and regulatory requirements, and must be consistent with the assumptions, conclusions and recommendations of the environmental assessment and the Government response to [the EA Report]." The Panel noted that this will need to be evaluated by the responsible authorities once a reactor technology is selected, and will be required to be demonstrated as part of the Application for a Licence to Construct: EA Report at p. 11. If the reactor technology selected is fundamentally different than those assessed, the Panel stated, "then this review does not apply and a new environmental assessment must be conducted": EA Report at p. 143. This is reflected in Recommendation 1 of the EA Report, which reads:

> The Panel understands that prior to construction, the Canadian Nuclear Safety Commission will determine whether this environmental assessment is applicable to the reactor technology selected by the Government of Ontario for the Project. Nevertheless, if the selected reactor technology is fundamentally different from the specific reactor technologies bounded by the

> plant parameter envelope, the Panel recommends that a new environmental assessment be conducted.

[18] The Licence, which is valid from August 17, 2012 to August 17, 2022, authorizes OPG to undertake a range of site preparation activities, including clearing and grubbing of vegetation, excavation and grading of the site, installation of services and utilities, construction of administrative and support buildings, and other activities. It is supported by a Record of Proceedings, Including Reasons for Decision, comprising over 50 pages (Reasons for the Licence Decision). Those Reasons describe the matters to be decided and the conclusions of the Panel (acting as the Commission) as follows:

> 9. In considering the application, the Commission was required to decide whether the site is suitable for the construction of a nuclear generating station, in accordance with the regulatory requirements of the Class I Nuclear Facilities Regulations and the expectations set forth in CNSC Regulatory Document RD-346. The Commission was also required to decide, pursuant to subsection 24(4) of the NSCA:
>
> > a) if OPG is qualified to carry on the activities that the licence would authorize; and
> >
> > b) if, in carrying on those activities, OPG would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
> >
> > […]
>
> 13. Based on its consideration of the matter, as described in more detail in the following sections of this Record of Proceedings, the Commission concludes that OPG is qualified to carry on the activities that the licence will authorize. The Commission is of the opinion that OPG, in carrying on those activities, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance

> of national security and measures required to implement international obligations to which Canada has agreed…

ISSUES

[19] The issues raised in these judicial review applications can be summarized as follows:

(a) Did the Panel fail to comply with the requirements of the CEAA in conducting the EA by:

i. Failing to conduct an environmental assessment of a "project" as defined in the Act;

ii. Failing to consider the "environmental effects" of the Project as required by s. 16 of the Act;

iii. Failing to assess the need for, and alternatives to, the Project as required by the Act and the Panel's Terms of Reference;

iv. Failing to fulfill its information gathering, public consultation and reporting duties under s. 34 of the CEAA; or

v. Unlawfully delegating its duties under the Act?

(b) Did the Panel fail to comply with the requirements of the CEAA and the NSCA in issuing the Licence by:

i. Failing to ensure that an environmental assessment compliant with the CEAA was conducted prior to issuing the Licence; or

ii. Failing to comply with s. 24(4) of the NSCA by considering and granting the Licence in the absence of information specifically required by the relevant regulations?

(c) Did the Panel breach a duty of procedural fairness by preventing effective public participation in the joint review through its procedural rulings, or by relying on extraneous evidence in granting the Licence?

STANDARD OF REVIEW

[20] The Supreme Court of Canada in *Dunsmuir v New Brunswick*, 2008 SCC 9 [*Dunsmuir*] held that a standard of review analysis need not be conducted in every instance. Instead, where the standard of review applicable to a particular question before the court is settled in a satisfactory manner by past jurisprudence, the reviewing court may adopt that standard of review. Only where this search proves fruitless, or where the relevant precedents appear to be inconsistent with new developments in the common law principles of judicial review, must the reviewing court undertake a consideration of the four factors comprising the standard of review analysis: *Agraira v Canada (Public Safety and Emergency Preparedness)*, 2013 SCC 36 at para 48.

[21] There is no dispute that issues of procedural fairness are reviewable on a standard of correctness: see *Mission Institution v Khela*, 2014 SCC 24 at para 79; *Canadian Union of Public Employees (C.U.P.E.) v Ontario (Minister of Labour)*, 2003 SCC 29 at para 100; *Sketchley v Canada (Attorney General)*, 2005 FCA 404 at para 53.

[22] The Applicants submit that failure to comply with a mandatory requirement of the CEAA is an error of law reviewable on the correctness standard, and that this standard applies to the

question of whether the Panel in this case met its legal duties under the Act: *MiningWatch Canada v Canada (Minister of Fisheries and Oceans)*, 2007 FC 955 at paras 135-37 [*MiningWatch (FC)*], rev'd 2008 FCA 209, rev'd 2010 SCC 2; *Pembina Institute for Appropriate Development v Canada (Attorney General)*, 2008 FC 302 at paras 37, 41 [*Pembina Institute*]; *Alberta Wilderness Assn v Cardinal River Coals Ltd*, [1999] 3 FC 425 (TD) at paras 39-41 [*Cardinal River Coals*]; *Friends of the West Country Assn v Canada (Minister of Fisheries and Oceans)*, [2000] 2 FC 263 (FCA) at para 25 [*Friends of the West Country*]; *Prairie Acid Rain Coalition v Canada (Minister of Fisheries and Oceans)*, 2006 FCA 31 at paras 9-12; *Environmental Resource Centre v Canada (Minister of the Environment)*, 2001 FCT 1423, [2001] FCJ No 1937 (TD) at paras 154-59 [*Environmental Resource Centre*]; *Georgia Straight Alliance v Canada (Minister of Fisheries and Oceans) (sub nom Canada (Fisheries and Oceans) v David Suzuki Foundation)*, 2012 FCA 40 at paras 88-90, 96-106 [*David Suzuki*].

[23] The Respondents argue that, in substance, the Applicants are attacking the adequacy or "quality" of the evidence and the reasonableness of the conclusions based upon it, and the Court has cautioned against mis-characterizing such matters as issues of failing to comply with the requirements of the Act: *Pembina Institute*, above, at paras 38-40. They note that the Panel's consideration of the evidence, including conclusions about its adequacy or the significance of environmental effects, are to be reviewed on a reasonableness standard: *Pembina Institute*, above, at para 37; *Bow Valley Naturalists Society v Canada(Minister of Canadian Heritage)*, [2001] 2 FC 461 (FCA) at para 55 [*Bow Valley*]; *Inverhuron & District Ratepayers' Assn v Canada (Minister of the Environment)*, 2001 FCA 203 at paras 32-40 [*Inverhuron (FCA)*]; *Alberta Wilderness Assn v Express Pipelines Ltd* (1996), 137 DLR (4^{th}) 177, [1996] FCJ No

1016 (FCA) at para 10 [*Express Pipelines*]. They argue that the same is true with respect to questions of whether the Panel properly considered the need for, and alternatives to, the Project: *Grand Riverkeeper, Labrador Inc v Canada (Attorney General)*, 2012 FC 1520 at paras 27-40 [*Grand Riverkeeper*]. The Respondents point out that, while courts must ensure that the requirements of the CEAA are followed, they must defer to substantive determinations. A reviewing court is not to act as an "academy of science." Provided the statutory steps are followed, it is not for judges to decide what projects should be authorized: *Inverhuron (FCA)*, above, at para 36, citing *Bow Valley*, above.

[24] In addition, based on recent developments in the law on judicial review, the Respondents argue that, even in respect of many questions of law, the Panel's findings are entitled to deference: *Canada (Canadian Human Rights Commission) v Canada (Attorney General)*, 2011 SCC 53 at para 24; *Alberta (Information and Privacy Commissioner) v Alberta Teachers' Association*, 2011 SCC 61 at paras 33-34 [*Alberta Teachers*]. Similarly, they note that this Court has established in the context of a licence renewal application that the CNSC's interpretation and application of the NSCA is to be reviewed on a standard of reasonableness: *Fond du Lac Denesuline First Nation v Canada (Attorney General)*, 2010 FC 948 at para 42, aff'd 2012 FCA 73 [*Fond du Lac*].

[25] It is true that prior to *Dunsmuir*, above, this Court and the Court of Appeal consistently applied a standard of correctness when reviewing a review panel or other administrative decision-maker's interpretation of the CEAA and their duties under that Act (*Cardinal River Coals*, above; *Friends of the West Country*, above; *Bow Valley*, above, at para 55; *Environmental*

Resource Centre, above, at paras 138, 154; *Pembina Institute*, above, at paras 37, 41), and applied a standard or reasonableness when reviewing a panel's weighing of the evidence and substantive conclusions based on the evidence, such as whether a project is likely to cause significant adverse environmental effects (*Bow Valley*, above, at para 55; *Inverhuron (FCA*), above, at paras 39-40; *Pembina Institute*, above, at para 37). Thus, for example, interpreting the duty to consider the factors set out in s. 16 (*Environmental Resource Centre*, above, at paras 138, 152-154) and the statutory information gathering and reporting duties of a review panel set out in ss. 34(a) and (c) (*Cardinal River Coals*, above, at para 26) were seen as questions of law reviewable on a standard of correctness.

[26] In practice, it sometimes proved difficult to discern the difference between questions engaging a panel or decision-maker's interpretation of their duties under the CEAA on the one hand, and questions of the sufficiency or quality of the evidence before the decision-maker on the other (see *Cardinal River Coals*, above, at para 24; *Pembina Institute*, above, at para 39; *Express Pipelines*, above, at para 10). This is not surprising, since fulfilling a duty to "consider," to obtain "the information required," or to prepare a report setting out one's "rationale, conclusions and recommendations" is always a matter of degree; one could always go further in considering factors, gathering information, or setting out the rationale for one's conclusions.

[27] The post-*Dunsmuir* jurisprudence tends to reflect an appreciation of this fact. I do not doubt that there is an element of statutory interpretation involved in determining how far to go in gathering information, considering a particular factor, or reporting on one's rationale, conclusions and recommendations. But this is also a matter of judgment based on the facts and

circumstances of each particular case, and is a question upon which a review panel can be expected to bring its experience and expertise to bear: see *Grand Riverkeeper*, above, at paras 35-40; *Conseil des Innus de Ekuanitshit v Canada (Attorney General)*, 2013 FC 418 at paras 69-71 [*Conseil des Innus de Ekuanitshit*]; *Canadian Transit Co v Canada (Minister of Transport)*, 2011 FC 515 at paras 83-86, aff'd 2012 FCA 70 [*Canadian Transit*]. This is in keeping with the now firmly established principle that an administrative decision-maker interpreting its home statute or a closely related statute is entitled to deference: see *McLean v British Columbia (Securities Commission)*, 2013 SCC 67, [2013] 3 SCR 895 at paras 21-22 [*McLean*]; *Alberta Teachers*, above, at para. 34; *Dunsmuir*, above, at para 54. The Federal Court of Appeal has recently confirmed that the principle from *David Suzuki*, above, holding that this presumption of deference does not apply in the same manner to non-adjudicative decision-makers, has been superseded by later Supreme Court jurisprudence: see *Kandola v Canada (Minister of Citizenship and Immigration)*, 2014 FCA 85 at paras 30-42 (per Noel JA, Webb JA concurring) and para 86 (per Mainville JA).

[28] It may be that questions of law could arise under the CEAA or its successor legislation in relation to which, based on a contextual analysis, the presumption of reasonableness review would be rebutted and a standard of correctness would apply: see *McLean*, above, at para 22; *Rogers Communications Inc v Society of Composers, Authors and Music Publishers of Canada*, 2012 SCC 35, [2012] 2 SCR 283, at para. 16; *Dunsmuir*, above, at paras 58-61. However, I do not think any such questions arise here. While there is an element of statutory interpretation involved in answering issues a. i. through a. v, each is also a question of mixed fact and law that

engages the expertise and judgment of the Panel. As such, in my view, each of these issues is reviewable on a standard of reasonableness.

[29] Similarly, as I found in *Fond du Lac*, above, at para 42, "reasonableness is the appropriate standard upon which to review the [CNSC's] interpretation and application of the [NSCA]" in the course of its licensing decisions. As such, a standard of reasonableness applies in reviewing the Panel's (functioning as the Commission) decision to issue the Site Preparation Licence in this case, including issues b. i. and b. ii. above.

[30] For clarity, I would note that because the CEAA sets out specific duties and responsibilities for a review panel, a reviewing court must go beyond assessing whether a panel came to a reasonable conclusion. The Court must have regard for the duties set out in the Act, and ensure that the panel has complied with them. However, in doing so, a degree of deference is owed to the panel's judgment in terms of how to fulfill those responsibilities in a given case. They are duties that must be interpreted and carried out *reasonably* in the circumstances: see *Grand Riverkeeper*, above, at para 62.

[31] When reviewing a decision on the standard of reasonableness, the analysis will be concerned with "the existence of justification, transparency and intelligibility within the decision-making process [and also with] whether the decision falls within a range of possible, acceptable outcomes which are defensible in respect of the facts and law." See *Dunsmuir*, above, at para 47, and *Canada (Citizenship and Immigration) v Khosa*, 2009 SCC 12 at para 59 [*Khosa*]. Put another way, the Court should intervene only if the Decision was unreasonable in

the sense that it falls outside the "range of possible, acceptable outcomes which are defensible in respect of the facts and law."

STATUTORY PROVISIONS

[32] The following provisions of the CEAA are applicable in these proceedings:

Purposes	**Objet**
4. (1) The purposes of this Act are	4. (1) La présente loi a pour objet :
(a) to ensure that projects are considered in a careful and precautionary manner before federal authorities take action in connection with them, in order to ensure that such projects do not cause significant adverse environmental effects;	a) de veiller à ce que les projets soient étudiés avec soin et prudence avant que les autorités fédérales prennent des mesures à leur égard, afin qu'ils n'entraînent pas d'effets environnementaux négatifs importants;
(b) to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy;	b) d'inciter ces autorités à favoriser un développement durable propice à la salubrité de l'environnement et à la santé de l'économie;
[…]	[…]
(d) to ensure that there be opportunities for timely and meaningful public participation throughout the environmental assessment process.	d) de veiller à ce que le public ait la possibilité de participer de façon significative et en temps opportun au processus de l'évaluation environnementale.
[…]	[…]
Duties of the Government of	**Mission du gouvernement du**

Canada

(2) In the administration of this Act, the Government of Canada, the Minister, the Agency and all bodies subject to the provisions of this Act, including federal authorities and responsible authorities, shall exercise their powers in a manner that protects the environment and human health and applies the precautionary principle.

[…]

Factors to be considered

16. (1) Every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public that are received in accordance with this Act and the regulations;

Canada

(2) Pour l'application de la présente loi, le gouvernement du Canada, le ministre, l'Agence et les organismes assujettis aux dispositions de celle-ci, y compris les autorités fédérales et les autorités responsables, doivent exercer leurs pouvoirs de manière à protéger l'environnement et la santé humaine et à appliquer le principe de la prudence.

[…]

Éléments à examiner

16. (1) L'examen préalable, l'étude approfondie, la médiation ou l'examen par une commission d'un projet portent notamment sur les éléments suivants :

a) les effets environnementaux du projet, y compris ceux causés par les accidents ou défaillances pouvant en résulter, et les effets cumulatifs que sa réalisation, combinée à l'existence d'autres ouvrages ou à la réalisation d'autres projets ou activités, est susceptible de causer à l'environnement;

b) l'importance des effets visés à l'alinéa a);

c) les observations du public à cet égard, reçues conformément à la présente loi et aux règlements;

(d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and

d) les mesures d'atténuation réalisables, sur les plans technique et économique, des effets environnementaux importants du projet;

(e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.

e) tout autre élément utile à l'examen préalable, à l'étude approfondie, à la médiation ou à l'examen par une commission, notamment la nécessité du projet et ses solutions de rechange, — dont l'autorité responsable ou, sauf dans le cas d'un examen préalable, le ministre, après consultation de celle-ci, peut exiger la prise en compte.

Additional factors

Éléments supplémentaires

(2) In addition to the factors set out in subsection (1), every comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(2) L'étude approfondie d'un projet et l'évaluation environnementale qui fait l'objet d'une médiation ou d'un examen par une commission portent également sur les éléments suivants :

(a) the purpose of the project;

a) les raisons d'être du projet;

(b) alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;

b) les solutions de rechange réalisables sur les plans technique et économique, et leurs effets environnementaux;

(c) the need for, and the requirements of, any follow-up program in respect of the project; and

c) la nécessité d'un programme de suivi du projet, ainsi que ses modalités;

(d) the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

d) la capacité des ressources renouvelables, risquant d'être touchées de façon importante par le projet, de répondre aux besoins du présent et à ceux des générations futures.

Determination of factors

(3) The scope of the factors to be taken into consideration pursuant to paragraphs (1)(a), (b) and (d) and (2)(b), (c) and (d) shall be determined

Obligations

(3) L'évaluation de la portée des éléments visés aux alinéas (1)a), b) et d) et (2)b), c) et d) incombe :

(a) by the responsible authority; or

a) à l'autorité responsable;

(b) where a project is referred to a mediator or a review panel, by the Minister, after consulting the responsible authority, when fixing the terms of reference of the mediation or review panel.

b) au ministre, après consultation de l'autorité responsable, lors de la détermination du mandat du médiateur ou de la commission d'examen.

[…]

[…]

Assessment by review panel

Commission d'évaluation environnementale

34. A review panel shall, in accordance with any regulations made for that purpose and with its term of reference,

34. La commission, conformément à son mandat et aux règlements pris à cette fin :

(a) ensure that the information required for an assessment by a review panel is obtained and made available to the public;

a) veille à l'obtention des renseignements nécessaires à l'évaluation environnementale d'un projet et veille à ce que le public y ait accès;

(b) hold hearings in a manner that offers the public an

b) tient des audiences de façon à donner au public la

opportunity to participate in the assessment;	possibilité de participer à l'évaluation environnementale du projet;
(c) prepare a report setting out	c) établit un rapport assorti de sa justification, de ses conclusions et recommandations relativement à l'évaluation environnementale du projet, notamment aux mesures d'atténuation et au programme de suivi, et énonçant, sous la forme d'un résumé, les observations reçues du public;
(i) the rationale, conclusions and recommendations of the panel relating to the environmental assessment of the project, including any mitigation measures and follow-up program, and	
(ii) a summary of any comments received from the public; and	
(d) submit the report to the Minister and the responsible authority.	d) présente son rapport au ministre et à l'autorité responsable.

[33] The following provisions of the NSCA are applicable in these proceedings:

Licences	**Catégories**
24. (1) The Commission may establish classes of licences authorizing the licensee to carry on any activity described in any of paragraphs 26(a) to (f) that is specified in the licence for the period that is specified in the licence.	24. (1) La Commission peut établir plusieurs catégories de licences et de permis; chaque licence ou permis autorise le titulaire à exercer celles des activités décrites aux alinéas 26a) à f) que la licence ou le permis mentionne, pendant la durée qui y est également mentionnée.
[…]	[…]
Conditions for issuance, etc.	**Conditions préalables à la délivrance**
(4) No licence shall be issued,	(4) La Commission ne délivre,

renewed, amended or replaced — and no authorization to transfer one given — unless, in the opinion of the Commission, the applicant or, in the case of an application for an authorization to transfer the licence, the transferee	ne renouvelle, ne modifie ou ne remplace une licence ou un permis ou n'en autorise le transfert que si elle est d'avis que l'auteur de la demande ou, s'il s'agit d'une demande d'autorisation de transfert, le cessionnaire, à la fois :
(a) is qualified to carry on the activity that the licence will authorize the licensee to carry on; and	a) est compétent pour exercer les activités visées par la licence ou le permis;
(b) will, in carrying on that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.	b) prendra, dans le cadre de ces activités, les mesures voulues pour préserver la santé et la sécurité des personnes, pour protéger l'environnement, pour maintenir la sécurité nationale et pour respecter les obligations internationales que le Canada a assumées.
[…]	[…]

[34] The following provisions of the *Class I Nuclear Facilities Regulations*, SOR/2000-204 (Regulations) are applicable in these proceedings:

General Requirements	**Dispositions générales**
3. An application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations:	3. La demande de permis visant une installation nucléaire de catégorie I, autre qu'un permis d'abandon, comprend les renseignements suivants, outre ceux exigés à l'article 3 du Règlement général sur la sûreté et la réglementation nucléaires:
(a) a description of the site of the activity to be licensed,	a) une description de l'emplacement de l'activité

including the location of any exclusion zone and any structures within that zone;

visée par la demande, y compris l'emplacement de toute zone d'exclusion et de toute structure s'y trouvant;

(b) plans showing the location, perimeter, areas, structures and systems of the nuclear facility;

b) des plans indiquant l'emplacement, le périmètre, les aires, les ouvrages et les systèmes de l'installation nucléaire;

(c) evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed;

c) la preuve que le demandeur est le propriétaire de l'emplacement ou qu'il est mandaté par celui-ci pour exercer l'activité visée;

(d) the proposed quality assurance program for the activity to be licensed;

d) le programme proposé d'assurance de la qualité proposé pour l'activité visée;

(e) the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on;

e) le nom, la forme, les caractéristiques et la quantité des substances dangereuses qui pourraient se trouver sur l'emplacement pendant le déroulement de l'activité visée;

(f) the proposed worker health and safety policies and procedures;

f) les politiques et procédures proposées relativement à la santé et à la sécurité des travailleurs;

(g) the proposed environmental protection policies and procedures;

g) les politiques et procédures proposées relativement à la protection de l'environnement;

(h) the proposed effluent and environmental monitoring programs;

h) les programmes proposés pour la surveillance de l'environnement et des effluents;

(i) if the application is in respect of a nuclear facility referred to in paragraph 2(b) of the Nuclear Security

i) lorsque la demande vise une installation nucléaire mentionnée à l'alinéa 2b) du Règlement sur la sécurité

Regulations, the information required by section 3 of those Regulations;

nucléaire, les renseignements exigés à l'article 3 de ce règlement;

(j) the proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed; and

j) le programme destiné à informer les personnes qui résident à proximité de l'emplacement de la nature et des caractéristiques générales des effets prévus de l'activité visée sur l'environnement ainsi que sur la santé et la sécurité des personnes;

(k) the proposed plan for the decommissioning of the nuclear facility or of the site.

k) le plan proposé pour le déclassement de l'installation nucléaire ou de l'emplacement.

Licence to Prepare Site

Permis de préparation de l'emplacement

4. An application for a licence to prepare a site for a Class I nuclear facility shall contain the following information in addition to the information required by section 3:

4. La demande de permis pour préparer l'emplacement d'une installation nucléaire de catégorie I comprend les renseignements suivants, outre ceux exigés à l'article 3 :

(a) a description of the site evaluation process and of the investigations and preparatory work that have been and will be done on the site and in the surrounding area;

a) une description du processus d'évaluation de l'emplacement, ainsi que des analyses et des travaux préalables qui ont été et seront effectués sur l'emplacement et dans les environs;

(b) a description of the site's susceptibility to human activity and natural phenomena, including seismic events, tornadoes and floods;

b) une description de la vulnérabilité de l'emplacement aux activités humaines et aux phénomènes naturels, y compris les secousses sismiques, les tornades et les inondations;

(c) the proposed program to

c) le programme devant servir

determine the environmental baseline characteristics of the site and the surrounding area;	à déterminer les caractéristiques environnementales de base de l'emplacement et des environs;
(d) the proposed quality assurance program for the design of the nuclear facility; and	d) le programme d'assurance de la qualité proposé pour la conception de l'installation nucléaire;
(e) the effects on the environment and the health and safety of persons that may result from the activity to be licensed, and the measures that will be taken to prevent or mitigate those effects.	e) les effets sur l'environnement ainsi que sur la santé et la sécurité des personnes que peut avoir l'activité visée par la demande, de même que les mesures qui seront prises pour éviter ou atténuer ces effets.
[…]	[…]

ARGUMENT

Applicants

EA Report - T-1572-11

Failure to Comply with the CEAA

[35] The Applicants challenge the EA on a number of grounds. Their overall position is that in conducting the EA, the Panel failed to comply with the mandatory requirements of the CEAA and the Panel's own Terms of Reference. They say that, as a matter of law, the Panel failed to conduct an EA of a "project" within the meaning of the CEAA, and failed to consider the mandatory factors set out in s. 16 of the Act and the Terms of Reference. In addition, they say the Panel failed to comply with the legal duties imposed by s. 34 of the Act in relation to information-gathering, public participation and reporting, and unlawfully attempted to defer or delegate its s. 34 duties to other entities and agencies. The Applicants ask that the Court remit the

EA back to the Panel for further consideration in accordance with the legal requirements of the CEAA.

[36] The Applicants contend that the overall aim of the CEAA is to achieve sustainable development by integrating environmental considerations into federal governmental decision-making about projects. They characterize the Act as the federal "look before you leap" law, noting that s. 4(1) requires "careful and precautionary" consideration of projects and timely and meaningful public participation throughout the EA process, and s. 4(2) imposes a positive legal duty upon "all bodies subject to the provisions of this Act" to "exercise their powers in a manner that protects the environment and human health and applies the precautionary principle."

[37] The Applicants note that the Supreme Court of Canada has endorsed the precautionary principle (*R v Hydro Quebec*, [1997] 3 SCR 213 at para 86; *114957 Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town)*, 2001 SCC 40 at para 31 [*Spraytech*]; *Sierra Club of Canada v Canada (Minister of Finance)*, 2002 SCC 41 at para 84). Moreover, the Federal Court of Appeal has held that "the precautionary principle states that a project should not be undertaken if it *may* have serious adverse environmental consequences, even if it is not possible to prove with any degree of certainty that these consequences will in fact materialize" (emphasis added): *Canadian Parks and Wilderness Society v Canada (Minister of Canadian Heritage)*, 2003 FCA 197 at para 24 [*Parks and Wilderness Society*]; see also *Pembina Institute*, above, at paras 29-31. In the Applicants' view, the approach taken by the Panel in this case amounts to a "leap before you look" approach.

[38] The Applicants argue that it was not possible to conduct an EA that met the requirements of the CEAA when the reactor technology had not been chosen and other key Project components, such as the site design layout, cooling system option, used nuclear fuel storage option, and radioactive waste management option, remained unspecified. Although s. 11(1) of the Act provides that an EA is to be conducted as early as practicable in the planning stages of a project and before irrevocable decisions are made, the EA must also be conducted at a stage when it is possible to fully consider and determine whether the project may cause adverse environmental effects: *Friends of the Island Inc v Canada (Minister of Public Works)*, [1993] 2 FC 229 at paras 41, 47, 53-54, 99 [*Friends of the Island*].

[39] While the Project will require additional licences under the NSCA, the Applicants note that the federal EA at issue here is the only EA that will be carried out for the Project as a whole. Contrary to the Respondents' characterization of environmental assessment as an information-gathering and planning tool, the Applicants cite *Friends of the Oldman River Society v Canada (Minister of Transport)*, [1992] 1 SCR 3 at para 103 [*Oldman River*] for the proposition that it has "both information-gathering and decision-making" components and provides decision-makers "with an objective basis for granting or denying approval for a proposed development."

The PPE Approach

[40] The Applicants take issue in particular with the use of the "bounding scenario" or PPE approach described above in conducting the EA. They argue, first, that this has the consequence that the Panel did not review a "project" within the meaning of the CEAA, because the specific nature of the physical work to be undertaken was not identified. In the alternative, even if the

proposal reviewed was a "project," the adoption of the bounding scenario approach prevented the Panel from assessing the environmental effects of the Project as required by the CEAA.

[41] Since it is "projects" that must undergo EAs, the Applicants argue that the term is central to the statutory scheme. Subsection 2(1) of the Act defines a "project" as either: (a) an undertaking in relation to a physical work; or (b) an activity listed in the *Inclusion List Regulations*. Here, it is the first branch of the definition that is relevant. The Applicants say that, in order to be assessed under this branch, the Project must: (a) be a physical activity by humans; (b) be in the proposal stage and prior to construction actually starting; and (c) have identifiable, concrete characteristics and results: *Bennett Environmental Inc v Canada (Minister of the Environment)*, 2005 FCA 261 at para 77 [*Bennett Environmental*]; *Canadian Transit*, above.

[42] In order for there to be a "project," the Applicants say, a proponent must have identified the specific nature of the proposed physical work from start to finish, including the preferred means of carrying it out. This is in contrast to plans, policies and programs, which are broader and more vague and involve "various processes of reforming, adding, and subtracting different elements": *Canadian Transit*, above, at paras 34-35; Stephen Hazell and Hugh Benevides, *Federal Strategic Environmental Assessment: Towards A Legal Framework*, (1998) 7 JELP 349 at 371. When a proponent is still considering alternative means to carry out a project, there is not yet a specific "physical work" that can be practicably assessed in terms of its environmental effects. The point of the CEAA is not to assess a conceptual collection of options and alternatives, but to assess a specific project, described with a level of detail that permits meaningful review of potential environmental effects: *Friends of the Island*, above, at paras 41,

53, 99; *Canadian Transit*, above, at paras 53, 54, 139, 141. As the Court noted in *Friends of the Island* at para 53: "Public hearings on a generic proposal are not a substitute for a specific evaluation of the actual project which is planned to construct."

[43] In this case, the Applicants say, the EA was supposed to carefully assess the construction, operation and decommissioning of an identifiable new nuclear power plant. Instead, they argue, the EA Report defers or delegates the evaluation of a specific reactor design to bodies other than the Panel. OPG presented, and the Panel assessed, an over-generalized collection of conceptual options and vague site development choices to be made in the post-EA period, without further assessment under the CEAA. This amounts to a plan rather than a project. The Applicants note that the Panel itself found that key information about the Project was absent.

[44] The Applicants contend that by conducting an EA when the main components of the proposal remained at a conceptual level, the Panel and the public were prevented from meaningfully assessing the Project's specific environmental effects. Federal decision-makers still do not know: a) the particulars of the specific project to be implemented at the Darlington site; b) the full range of site-specific or cumulative environmental effects; or c) whether there are feasible mitigation measures over the Project's full lifecycle. The Panel's approach, and its conclusion that no significant environmental effects are likely – provided that sizeable information gaps are eventually addressed by other bodies and numerous to-be-determined mitigation measures are implemented – is the antithesis of the precautionary principle enshrined in s. 4(2) of the Act and endorsed by the Supreme Court of Canada.

[45] Even if there was a "project" within the meaning of the CEAA, the Applicants argue, it was an error for the Panel to accept and apply the bounding approach, and this error resulted in a failure to fully assess the environmental effects of the Project as required by ss. 15(3), 16(1) and (2), and 34(a) and (b) of the CEAA. Subsection 15(3) imposes a mandatory duty to subject all components of the "physical work" to EA scrutiny. Subsections 16(1) and (2) set out mandatory factors that must be considered in relation to these components, including their environmental effects: *MiningWatch (FC)*, above, at para 39; *Friends of the West Country*, above, at para 25; *Pembina Institute*, above, at paras 21, 33. Subsections 34(a) and (b) impose obligations on the Panel to gather, disclose and hold public hearings on the information required for an assessment of the factors set out in s. 16 of the Act and the Terms of Reference. This is a non-delegable duty that does not depend upon the success or failure of the proponent, public agencies or interveners to produce information: *Cardinal River Coals*, above, at paras 39-41. Not only was the use of the bounding approach in the present case a "departure" from the normal EA process, as acknowledged by the Panel, it resulted in a fundamental failure to fulfill the above-noted duties under the Act.

[46] The Applicants argue that s. 16 of the Act requires the Panel to first describe the environmental effects associated with various aspects of the Project, and then make findings about the significance of those effects, taking into account mitigation measures that are technically and economically feasible: *Cardinal River Coals*, above, at paras 54-56. The use of the bounding approach, and the failure to assess a specific reactor technology, undermined the Panel's ability to properly evaluate the Project's environmental effects. The Applicants point in particular to the following findings and observations in the EA Report:

> The Panel found that the assessment of potential environmental effects was qualitative in many respects because it was conducted without specific knowledge of potential releases. OPG explained that certain parameters of the bounding scenario, such as hazardous substance emissions and on-site chemical inventories, could not be developed until a specific reactor technology has been selected by the Government of Ontario. (page 39)
>
> […]
>
> In the absence of a choice of reactor technology for the Project, OPG did not undertake a detailed assessment of the effects of liquid effluent and stormwater runoff to the surface water environment. Instead, the proponent committed to managing liquid effluent releases in compliance with applicable regulatory requirements and to applying best management practices for stormwater. (page 65)
>
> […]
>
> In response to a Panel request for information on stored inventories of hazardous materials and sources, types and quantities of non-radioactive wastes predicted to be generated by the Project, OPG indicated that specific details regarding the chemicals to be stored and used on the site could not be provided before a reactor technology is selected for the Project. (page 78)
>
> […]
>
> The Panel accepts the adoption of a safety goal-based approach for the assessment of the consequences of an accident in a situation where there has not been a choice of reactor technology. The Panel notes, however, that once this choice has been made, the proponent must be required to complete an assessment of the offsite effects of a severe accident that could arise for the chosen technology. (page 124)

[47] The Applicants argue that, in light of these and other gaps in information, the Panel failed to meet its obligations under s. 16 of the Act. They say that the environmental effects of the following components of the Project were not fully assessed by the Panel:

(a) Specific reactor technology;

(b) Specific site design layout;

(c) Specific water cooling option;

(d) Specific used nuclear fuel storage option; and

(e) Long-term radioactive waste management option.

Decommissioning and Waste Management

[48] With respect to the decommissioning of the site and long-term management of nuclear waste, the Applicants argue that the Panel accepted an optimistic and non-precautionary prediction from OPG that "effective and practical mitigation options would be available when required in the future," contrary to this Court's previous direction that "vague hopes for future technology" or "the possibilities of future research and development" do not constitute proper mitigation measures under the CEAA: *Pembina Institute*, above, at paras 25-26, 69. The Panel acknowledged that there were a number of information gaps with respect to long-term radioactive waste management, but rather than requiring OPG to provide the necessary information, the Panel merely recommended that future study and analysis be conducted. In doing so, the Panel failed to consider whether the radioactive waste from the Project will have significant adverse effects, and whether there are any technically and economically feasible measures which would mitigate them. There was no factual basis for its conclusion that "radioactive and used fuel waste is not likely to result in significant adverse environmental effects."

[49] According to the Applicants, s. 34(a) and (b) of the Act do not permit the Panel to identify missing information and then simply recommend future studies and information

gathering to address these gaps after the EA has concluded. Parliament clearly intended that these steps take place, and be subject to public involvement, as part of the EA process itself: *Cardinal River Coals*, above, at paras 39-41. Unless and until these evidentiary gaps are filled, the Panel has not conducted an EA in accordance with the Act, and has not provided federal decision-makers with the evidentiary basis required to make an informed decision. The Panel therefore lacked the necessary jurisdiction under s. 34(c)(i) to make any recommendations to the Minister: *Cardinal River Coals*, above, at paras 40-41, 43, 51; *Alberta Wilderness Assn v Canada (Minister of Fisheries and Oceans)*, [1999] 1 FC 483 at paras 17-21.

[50] The Panel also failed to properly consider cumulative effects as required by s. 16(1)(a) of the Act, especially in view of OPG's intention to refurbish the existing reactor units at Darlington NGS. The Panel should have addressed the likelihood and significance of cumulative effects from the new and existing units at Darlington, including the effects of a severe "common cause" accident at the site: *Bow Valley*, above.

[51] The Applicants further argue that the Panel failed to properly consider the "need" for, and "alternatives" to, the Project. Paragraph 16(1)(e) of the Act allows the Minister to decide that these factors must be considered and, in this case, the Minister included them in the Terms of Reference. At best, the Panel gave these factors short shrift, simply accepting OPG's statement in the EIS that the need for the Project was to fulfill a Directive of the Ontario Minister of Energy to seek federal approval of new nuclear reactors. As a matter of law, the Applicants say, a provincial Minister or project proponent cannot bind the Panel in the exercise of its statutory responsibilities, and the Panel effectively declined its jurisdiction by treating the Directive as

dispositive of the issue of the "need" for the Project: *Innisfil (Township) v Vespra (Township)*, [1981] 2 SCR 145 at 173.

[52] Where a project poses environmental risks, the Applicants say, the proponent must present detailed evidence and analysis demonstrating that it is actually needed: *West Northumberland Landfill Site (Re)* (1996), 19 CELR (NS) 181 (Ont Jt Bd) at paras 88, 90; *Canadian Transit*, above, at paras 5, 27-28, 78, 111, 115-18. The Panel should have identified the functional purpose of the Project – supplying a portion of "base load" electricity for Ontario – and should have considered the need for and alternatives to the Project from that perspective. Instead, the Panel erroneously concluded that these were issues of provincial energy policy that were better left to future hearings before the Ontario Energy Board. The only evidence on the actual need for the Project was a brief and untested overview from the provincial Ministry of Energy, provided after the hearings concluded and without an opportunity for the Applicants to file responding evidence, contrary to the *audi alteram partem* principle.

Procedural Errors

[53] The Applicants argue that the alleged problems with the EA outlined above were compounded by procedural errors, including the Panel's refusal to: a) extend the public comment period on the EIS to allow the addition of the EC-6 design to be more fully addressed; b) allow cross-examination on evidence or answers to undertakings; or c) adjourn the public hearing so that gaps in the evidence could be filled and the relevant information publicly disclosed and carefully assessed by the Panel.

[54] These allegations are closely related to the Panel's rulings on a series of preliminary objections raised by the Applicants on the first day of the public hearings, with prior notice to the Panel that they would be raised. The Panel rejected each of these objections, first orally and then in written reasons which are attached to the EA Report as Appendix 3 (EA Report at pp. 163-168).

[55] The Applicants say that just before the close of the pre-hearing public comment period on the EIS, they learned that the EC-6 reactor technology would be added as a fourth option to be assessed within the EA. Since in their view this technology poses health and environmental risks that significantly differ from those arising from the three reactor designs addressed in the EIS, the Applicants objected to its late inclusion on fairness and other grounds. They argued that the EA process should be restarted or the deadlines for comments extended if the EC-6 design were to be included in the EA. The Panel rejected this argument, finding that the EA was intended from the beginning to be "technology neutral," and it had been known from the beginning that it would follow a plant parameter approach that would not exclude the eventual selection of technologies not included in the proposal or the EIS. The consideration of additional technologies such as the EC-6 did not amount to a change in the scope of the Project being considered. The Panel also found that the Applicants had sufficient time and notice to prepare, and opportunities for further submissions or additional hearing days would be provided if required to address this issue. The Applicants argue that this ruling was in error, and compromised their ability to participate effectively in the hearings.

[56] In these same reasons, the Panel rejected an argument that the hearings should be suspended in light of the Fukushima Daiichi accident in Japan, which occurred just 10 days before the start of the hearings, as any EA that did not include lessons learned from that crisis would be incomplete. The Panel noted that, as fully independent decision-makers, the Panel members could decide if new information related to those events was required, and would continue to review the Project until satisfied that they had all the relevant information for appropriate and informed decision-making. Similarly, the Panel rejected an objection that there was insufficient or inadequate information before the Panel on which to base an EA or a licensing decision, and that the absence of a technology decision deprived the public of the ability to participate. The Panel found that if it were able to proceed to the public hearing stage only when it had all the information required for the EA, this would effectively negate the need for holding a public hearing. The Panel also rejected a request from the Applicant Canadian Environmental Law Association (CELA) that the Panel receive information from OPG and the relevant agencies as sworn evidence, finding that it was not required to adopt the formal rules of evidence applicable to a civil or criminal trial. The Applicants argue that these rulings were in error, and deprived them of the ability to participate effectively in the EA process.

[57] In addition, the Applicants argue that after the close of the hearings, the Panel accepted further evidence from two participants – OPG and the Ontario Ministry of Energy – to which the Applicants were not provided an opportunity to file responding evidence. The impugned evidence consists of responses to Undertakings 75 and 76 regarding the need for and alternatives to the Project, which were admitted despite the objections of the Applicant CELA on procedural fairness grounds. They argue that this was contrary to the *audi alteram partem* principle.

[58] The Applicants argue that the Panel also violated the well-established administrative law principle of *delgatus non potest delgare*, which provides that a body to which a power is delegated under a statute cannot further delegate that power unless the statute explicitly or implicitly authorizes it to do so: Sara Blake, *Administrative Law in Canada*, 5th ed (Toronto: LexisNexis, 2011) at 143-46. While review panels do not decide whether projects should be permitted to proceed, Parliament has entrusted them with the important, non-delegable responsibility of assessing and reporting upon major projects so that responsible authorities can make informed EA decisions. Since the Act does not expressly empower review panels to delegate their obligations under s. 34, they must fully complete their duties before they can lawfully report to the Minister. While a Panel might be permitted to leave minor details of confirmation, monitoring or mitigation for other agencies to deal with where a project has otherwise been fully assessed, most of the Panel's recommendations in this case were aimed at generating critically important information to backfill significant evidentiary gaps. This level of delegation is not permissible: *Environmental Resource Centre*, above, at paras 154-59; *Pembina Institute*, above, at paras 20, 60-62, 67, 69.

Site Preparation License T-1723-12

[59] The Applicants argue that the CNSC committed three fundamental and reviewable legal errors when it decided to issue the Licence: 1) it failed to ensure that the mandatory prerequisites under the CEAA had been satisfied in the EA of the Project before making its Licence decision; 2) it failed to comply with the mandatory requirements of the NSCA and the associated Regulations, in that it failed to make adequate provision for the protection of the environment

and the health and safety of persons. It also failed to ensure that OPG's application for the Licence contained required information regarding the environmental and health effects that may result from the activity to be licensed, as well as the measures that will be taken to prevent or mitigate those effects; and 3) the Panel breached its duty of procedural fairness to the interveners who participated in the public hearings on the Project by relying on extraneous documents not on the record.

Legal Prerequisites

[60] The first of these arguments asserts that an EA in conformity with the CEAA is a legal prerequisite to the issuance of the Licence, and that this prerequisite was not satisfied in this case. This argument is based on the same errors that were alleged in relation to the EA Report itself, as outlined above.

Failure to Comply with Mandatory Requirements

[61] The second argument asserts that the CNSC failed to fulfill the requirements of s. 24(4) of the NSCA by failing to subject the Project to scrutiny under the NSCA and its Regulations. In other words, regardless of the Court's conclusions regarding the requirements of the CEAA and whether they were met in the conduct of the EA in this case, the Applicants argue that s. 24(4) of the NSCA and the associated Regulations require that a detailed assessment of the Project occur, including the facility design and reactor technology involved, before a site preparation licence can lawfully be issued. They base this argument on the language of s. 24(4), and the requirements set out in ss. 3 and 4 of the *Class I Nuclear Facilities Regulations*, set out above, regarding the details that must be included in a licence application. They argue that since OPG

has not identified a specific reactor technology for the Project, the required information was not provided and the CNSC lacked jurisdiction to consider the application or grant the Licence.

Procedural Fairness

[62] Finally, the Applicants argue that the Panel breached a duty of fairness by relying upon two documents generated after the close of public hearings – the Fukushima Task Force Report, dated October 2011, and the associated CNSC Action Plan, dated March 2, 2012 - in coming to its decision on the Licence. They argue that the Panel also relied on documents cited in the CNSC's Licence Condition Handbook that existed only in draft form or not at all during the hearings. These documents were not tendered as exhibits during the public hearings held by the Panel, and were thus not subject to notice or comment opportunities by the Applicants or other interveners. Had this been done, the Applicants say they would have voiced serious concerns regarding the Task Force Report and CNSC Action Plan and the Panel's reliance on them, including the continued inadequacy of the risk assessment performed by OPG and the fact that the Action Plan could not fill the gaps in Project-specific information left by the EA.

[63] The Applicants argue that, based on the factors set out in *Baker v Canada (Minister of Citizenship and Immigration)*, [1999] 2 SCR 817 [*Baker*], the decision to issue the Licence is one that attracts a high degree of procedural fairness. They say the decision-making process is close to a trial model, in that s. 40(5) of the NSCA mandates public hearings, s. 24(4) requires the Panel to make many findings of fact, and intervening parties will often invest significant time and resources: *Baker*, above, at para 23. Moreover, the statutory scheme provides no avenue of appeal, and the Licence decision carries great importance to the Applicants as it constitutes the

first step toward constructing new nuclear reactors on the Darlington site without, in their view, a valid EA. They say this result is antithetical to their longstanding work in the area of energy and nuclear power planning and risk management. Further, the Applicants had a legitimate expectation that only evidence on the public record would be relied upon because this is the "regular practice of administrative decision-makers": *Baker*, above, at para 26.

Respondents

EA Report – T-1572-11

[64] While each of the Respondents – OPG, the CNSC and the Attorney General of Canada – have filed separate submissions, there is substantial agreement and overlap among their positions.

[65] All of the Respondents argue that the EA process and Report were fully compliant with the CEAA and there is no basis upon which the Court should interfere. They say the use of the "bounding scenario" approach was appropriate, and the Applicants' argument that the Panel improperly delegated its authority misunderstands the nature of environmental assessment, which is fundamentally an information gathering and planning tool. They note that the Project will be subject to further regulatory approvals that will involve consideration of environmental effects, including a requirement for licences from the CNSC at each phase of its development. In their view, it was appropriate for the Panel to take this full regulatory context into account in formulating its conclusions and recommendations.

[66] The Respondents argue that conducting the EA prior to the selection of a specific reactor technology is consistent with the requirement to conduct the assessment as early as practicable in the planning process and before irrevocable decisions are made (see CEAA, s. 11(1)). In substance, they say, the Applicants are attacking the Panel's conclusions about the sufficiency of the evidence, not its compliance with legal duties under the Act. The Panel's conclusion that there was sufficient information to conduct the EA is entitled to deference. Provided the record contains information on which the Panel could rationally base its conclusions, the Court should not intervene.

Separate Scoping Decision – Collateral Attack

[67] The Respondents argue that the decision to proceed with the EA prior to the selection of a reactor technology and based on the bounding approach was a separate scoping decision made by the Minister with the release of the EIS Guidelines and the Panel's Terms of Reference on March 12, 2009. It was open to the Applicants at that time to challenge this scoping decision through judicial review, but they did not do so and the time for such a challenge has long passed: *Citizens' Mining Council of Newfoundland and Labrador Inc v Canada (Minister of the Environment)* (1999), 163 FTR 36 (FC) at paras 47-49; *Hamilton-Wentworth (Regional Municipality) v Canada (Minister of the Environment)*, 2001 FCT 381 at para 60, aff'd 2001 FCA 347; *City of Ottawa v Canada (Human Rights Commission)* (*sub nom Desormeaux v Ottawa-Carleton Regional Transit Commission*), 2004 FC 1778 at para 68. The Applicants' argument that the Panel erred by failing to assess a "project" as defined in the CEAA amounts to an improper collateral attack on the scoping decision made by the Minister. Parties must avail themselves of their remedial options in a timely manner and, should they fail to do so, they

generally are not permitted to bring collateral attacks on final decisions: *R v Wilson*, [1983] 2 SCR 594 at 599; *Boucher v Stelco Inc*, 2005 SCC 64 at para 35.

There Was a Project to Assess

[68] The argument that the proposal assessed was not a "project" as defined in the CEAA is in any case without merit, the Respondents argue. There is a "project" under the first branch of the definition in s. 2 of the Act if there is some "undertaking" in relation to a "physical work." Since construction, operation, decommissioning and abandonment were all proposed here and are specifically included as examples of undertakings in s. 2(1) of the Act, and since the proposed reactors are physical works, the definition of a "project" is clearly met: see *Bennett Environmental*, above, at para 77; Canadian Environmental Assessment Agency, *Canadian Environmental Assessment Act – An Overview*, December 2011 (Updated) at p. 8 and Canadian Environmental Assessment Agency, *Glossary* (2006) at pp. 20, 26 (Respondent's Record (CNSC), Vol. 5, Tabs 4J and 4K).

[69] The Respondents point out that this conclusion is also supported by the scheme of the Act. Subsection 11(1) requires federal authorities to ensure that an EA is conducted as early as practicable in the planning stages of a project, before irrevocable decisions are made. The CNSC argues that it is preferable to identify environmental concerns before a final design is selected, and to use the EA process as a planning tool: *Friends of the Island*, above, at para 41; *Quebec (Attorney General) v Canada (National Energy Board)*, [1994] 1 SCR 159 at para 74. The case law recognizes that environmental assessment is "an early planning tool": *Pembina Institute*, above, at paras 33-34.

The Bounding Approach

[70] In *Canadian Transit*, cited by the Applicants, the Court had no difficulty concluding that a project existed and was relatively well-defined even though three bridge design options were under consideration at the time of the assessment: *Canadian Transit*, above, at paras 50-51. Similarly, in *Inverhuron & District Ratepayers' Assn v Canada (Minister of the Environment)* (2000), 191 FTR 20, 34 CELR (NS) 1 (TD) [*Inverhuron (TD)*], aff'd in *Inverhuron (FCA)*, above, both the Federal Court and the Federal Court of Appeal upheld a decision of the Minister of the Environment approving a project to develop a dry storage facility for spent nuclear fuel where the environmental impacts were considered based upon alternative designs that were under consideration.

[71] *Friends of the Island*, cited by the Applicants, is distinguishable on its facts. While the Court there found that a general assessment comparing three concepts for crossing the Northumberland Strait (two bridges and a tunnel) did not satisfy the requirements of the Environmental Guidelines Order that preceded the CEAA, the assessment in that case expressly stated that it was not fully considering potential environmental implications, and emphasized that an assessment of the specific designs must be undertaken: *Friends of the Island*, above, at para 41.

[72] The Applicants' argument that an EA must involve a detailed analysis of a specific technology is not supported by the case law. There is no one prescriptive method for conducting an EA; it must simply be conducted at a time and in a manner that results in consideration of the

factors outlined in the Act: *Inverhuron (FCA)*, above, at paras 54-57. The focus is on whether the environmental implications of a project can be "fully considered": *Friends of the Island*, above, at para 41. This may mean the consideration of reference designs with alternatives, a PPE approach, or any other approach that achieves this goal.

[73] The use of a "reference design" in conducting an EA – which the Respondents submit is no different from the bounding approach at issue here – was specifically approved in *Inverhuron*: *Inverhuron (TD)*, above, at paras 46-56; *Inverhuron (FCA)*, above, at paras 54-56. The Federal Court stated at para 55:

> …[T]o the extent that the challenge to the Minister's decision arises from the use of a reference design which does not correspond to the final design choice, the challenge must fail. As long as the statutory factors are considered, it is not a ground of review that they were considered by comparison to a reference design rather than by themselves. To the extent that the applicant's case is that the process is flawed because the design studied is not the design approved, which is in effect an attack upon the use of a reference design for purposes of conducting an assessment, it must fail. The choice of methodology is a matter within the competence of the responsible authority and as long as it results in consideration of the factors which the legislation requires to be considered, the Court cannot intervene.

According to Sexton JA in *Inverhuron (FCA)*, the relevant question was whether the EA report "provided the Minister with a rational basis for arriving at her decision that the project was not likely to cause significant adverse environmental effects," and the reference design approach used in that case met this requirement: *Inverhuron (FCA)*, above, at paras 57-58.

[74] In the present case, while the Panel would have found it "easier" to evaluate the environmental effects of the Project had only one technology and design been presented, it concluded that it could carry out its duties under the Act while considering multiple technologies based on the bounding approach: EA Report at p. 11. This approach assumed the worst case scenario for every environmental effect, and it is reasonable to assume that if the maximum effect can be adequately mitigated, lesser effects can be as well. Moreover, should a proposal arise that is beyond the scope of what has been assessed, a new EA would be required.

Compliance with Section 16 of the Act

[75] The Respondents reject the argument that the Panel failed to consider the environmental effects of the Project as required by s. 16 of the Act. They say the record shows that the Panel took into consideration all of the required environmental effects, including radioactive and used nuclear fuel waste and cooling technology. While the Applicants do not agree with the Panel's conclusions, it was reasonable for the Panel to conclude that the Project is not likely to cause significant adverse environmental effects, provided the mitigation measures proposed, the commitments made by OPG and the Panel's recommendations are implemented. Courts have recognized that information about the probable or possible future environmental effects of a project can never be complete or eliminate all uncertainty. Assessing these effects is a predictive exercise that involves a large measure of opinion and judgment. The Panel's conclusions about the adequacy and completeness of the evidence regarding future effects and their significance are entitled to deference: *Inverhuron (FCA)*, above, at para 5; *Express Pipelines*, above, at paras 10-12. Given the predictive nature of environmental assessment, the Act recognizes the importance

of follow-up mechanisms in addressing a project's effects: *Pembina Institute*, above, at paras 22-23.

[76] Contrary to the Applicants' assertions, the Respondents CNSC and OPG argue that the record shows the following:

(a) There was evidence before the Panel regarding liquid effluent and stormwater runoff and it was able to conduct the EA in this regard;

(b) OPG's responses provided sufficient evidence regarding the sources, types and quantities of non-radioactive waste to be generated by the Project to allow the Panel to conduct the EA in this regard;

(c) The issue of long-term management of radioactive waste was fully canvassed before the Panel, which concluded based on the evidence that there would be no significant adverse environmental effect; and

(d) The Panel did conduct an assessment of the off-site effects of a severe accident.

[77] While OPG did not provide an analysis regarding the cumulative effects of a "common cause" severe accident involving both the new and existing reactors at the site, the Panel recommended that the CNSC require such an analysis prior to construction.

[78] Regarding the requirement in s. 16(1)(d) of the Act that the Panel consider mitigation measures, the Respondent CNSC argues that uncertainty is not fatal and that future uncertain mitigation measures can be appropriate, even in cases where the technology required to mitigate future adverse environmental effects has yet to be developed. This is consistent with the ongoing and dynamic nature of environmental assessment: *Pembina Institute*, above, at paras 57-58.

[79] With respect to the Panel's consideration of the "need for" and "alternatives to" the Project, the Respondents submit that the scope of a review panel's consideration of the factors set out in s. 16 of the Act is a discretionary decision made by the Minister, and is outside the discretion of the Panel: CEAA s. 16(3); *Friends of the West Country*, above, at paras 25-27; *Inverhuron (TD)*, above, at paras 51-52; *Express Pipelines*, above, at paras 11-12. The EIS Guidelines required the need for and purpose of the Project to be identified from OPG's perspective, and stated that "the alternatives to the project need not include alternatives that are contrary to Ontario's formal plans or directives," since "an assessment of provincial energy policy is not within the terms of reference of this joint review panel": EIS Guidelines at p 17. The Panel would be entitled to come to the same conclusion on its own, since it has discretion to determine the parameters of the review required, and the CEAA is not intended to be used as a back door means of economic regulation: *Grand Riverkeeper*, above, at paras 53-54; *Sharp v Canada (Canadian Transportation Agency)*, [1999] 4 FC 363 (FCA) at paras 24-28 [*Sharp*]. The Terms of Reference required OPG to prepare the EIS in accordance with the EIS Guidelines. In any case, the Respondents say, the Panel heard from the Ontario Ministry of Energy twice regarding the need for, and alternatives to, the Project, and was provided with additional

evidence on these issues through responses to undertakings. The Applicants also had an opportunity to provide evidence regarding possible alternatives to the Project.

[80] In the end, the Respondents argue, it was reasonable for the Panel to base its conclusions on the "need for" and "alternatives to" the Project from the perspective of the proponent in light of the directives issued to it by the Ontario government, and to conclude that there were other more appropriate venues for public input regarding Ontario's energy policy.

No Unlawful Delegation

[81] Regarding the Applicants' position that the Panel unlawfully delegated its duties under the Act, the Respondents argue that this argument must be rejected because it is inconsistent with the scheme of the Act and would improperly narrow the discretion of panels to conduct their reviews and recommend mitigation as appropriate. Accepting the Applicants' view that only "minor" or "secondary" matters can be deferred to be dealt with by other agencies would involve the courts in a detailed consideration of the substantive scientific and technical evidence before a panel: *Canadian Transit*, above, at paras 7-9. The Federal Court of Appeal addressed a similar argument in *Express Pipelines*, above, and found as follows:

> [14] Finally, we were asked to find that the panel had improperly delegated some of its functions when it recommended that certain further studies and ongoing reports to the National Energy Board should be made before, during and after construction. This argument misconceives the panel's function which is simply one of information gathering and recommending. The panel's view that the evidence before it was adequate to allow it to complete that function "as early as is practicable in the planning stages ... and before irrevocable decisions are made" (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel's exercise is predictive and it is not surprising that the statute specifically envisages the possibility of "follow up"

> programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.

[82] The Respondent AGC argues that an EA is a "planning tool" that provides "a process for integrating environmental considerations into planning and decision-making": *Oldman River*, above, at para 103. As the Court observed in *Pembina Institute*, "[t]he adequacy and completeness of the evidence must be evaluated in light of the preliminary nature of a review panel's assessment": *Pembina Institute*, above, at para 23. The CEAA is "a sophisticated legislative system for addressing the uncertainty surrounding environmental effects," and mandates early assessment coupled with the flexibility of follow-up processes capable of adapting to new information. This "dynamic and fluid" process means that "perfect certainty regarding environmental effects is not required": *Pembina Institute*, above, at para 34. The Panel's duties do not extend to the elimination of uncertainty surrounding project effects.

[83] The Respondents point out that recommendations for follow-up programs to verify the accuracy of the EA and determine the effectiveness of mitigation measures are specifically authorized by s. 34(c) of the Act. They are also consistent with the principle of "adaptive management" embraced by the CEAA, which "responds to the difficulty, or impossibility, of predicting all the environmental consequences of a project on the basis of existing knowledge," and "counters the potentially paralyzing effects of the precautionary principle on otherwise socially and economically useful projects": *Parks and Wilderness Society*, above, at para 24; *Inter-Church Uranium Committee Educational Co-operative v Canada (Atomic Energy Control Board)*, 2004 FCA 218 at para 49 [*Inter-Church Uranium Committee*].

[84] The Respondents note that each of the five phases in the lifecycle of a nuclear power plant (site preparation, construction, operation, decommissioning, and abandonment) requires a licence from the CNSC. Each of these licence applications involves a public hearing process, and the CNSC must be satisfied before issuing each licence that OPG "will… make adequate provision for the protection of the environment": NSCA, s. 24(4)(b). The Project will also be expected to comply with other federal, provincial and municipal regulatory requirements provided they do not conflict with the NSCA and its associated regulations. The Respondent AGC argues that it was appropriate for the Panel to take this regulatory context into account, as this contributes to the efficiency and effectiveness of the EA process. Subsequent permitting processes will effectively manage certain Project effects, through the oversight of regulatory bodies with specific expertise. Reliance on this regulatory context is both compatible with the function and practical purpose of an EA as a planning tool, and consistent with s. 37(2.1) of the Act, which allows a responsible authority to take into account mitigation measures whose implementation the responsible authority can ensure, or that it is satisfied will be implemented by another person or body.

[85] In essence, the AGC argues that the Panel viewed subsequent permitting processes, whether federal or provincial, as mitigation measures, and was entitled to do so: *Canadian Transit*, above, at para 183; *West Vancouver (District) v British Columbia (Ministry of Transportation)*, 2005 FC 593 at para 104 [*West Vancouver*]; *Inter-Church Uranium Committee*, above, at paras 47 and 49; *Pembina Institute*, above, at para 24. The Panel need not describe mitigation measures with exacting detail. Rather, it is sufficient to describe general mitigation measures the details of which will be resolved in the future, particularly when dealing with an

industry with a well-established set of "known" mitigation measures: *Pembina Institute*, above, at para 24; *Union of Nova Scotia Indians v Canada (Attorney General)*, [1997] 1 FC 325 (TD) at paras 66-67 [*Union of Nova Scotia Indians*]; *West Vancouver*, above, at para 102.

No Procedural Errors

[86] The Respondents submit that the Applicants' arguments regarding procedural errors are also without merit. They argue that:

- The addition of the EC-6 technology to the options being assessed was outlined in a letter from the CNSC to the Panel Chair available on the Environmental Assessment Agency's public web site on July 30, 2010, well before the public comment period on the EIS closed on October 8, 2010, and discussed in subsequent correspondence between the Panel and OPG (see CNSC letter to Panel Chair dated July 30, 2010, OPG letter to Panel dated August 17, 2010, Panel letter to OPG dated August 20, 2010, and OPG letter to Panel dated August 30, 2010, Respondent's Record (OPG), Vol. 14, Tabs A72, A77, A73, and A78 respectively);

- The Panel's decision not to extend the comment period and to proceed to public hearings was reasonable;

- The Panel was not required to permit cross-examination, particularly since the NSCA requires proceedings to be dealt with as informally and expeditiously as circumstances and the rules of fairness permit;

- The denial of the Applicants' request to adjourn the hearing to allow for the collection of "information missing from the record" was also reasonable, because the hearings themselves are intended to perform an information gathering function; and

- While the Applicants claim that OPG and the Ontario Ministry of Energy provided evidence after the conclusion of the hearings to which the Applicants did not have the opportunity to respond, the evidence in question (responses to certain undertakings) was made available through the Registry more than a month before the deadline for participants to file final comments, and the Applicants had a full opportunity to respond to it (see list of documents from Canadian Environmental Assessment Registry (07-05-29525), Respondent's Record (OPG), Vol. 1, Tab 5 at p. 149; Transcript, Applicant's Record, Vol. 6, Tab 5V, pp. 2285-2288; Revised Procedure for Written Final Comments, Respondent's Record (OPG), Vol. 13, Tabs A59 and A60). Where, as here, there are no specific rules laid down by statute or regulation, the tribunal controls its own procedure, subject to the rules of fairness: *Prassad v Canada (Minister of Employment and Immigration)*, [1989] 1 SCR 560 at 568-69 [*Prassad*].

Site Preparation License T-1723-12

Compliance with Statutory Scheme

[87] In the Respondents' view, the Applicants' argument that the Panel failed to comply with s. 24(4) of the NSCA and the associated Regulations ignores the statutory scheme. There were two statutory prerequisites before the Panel could issue its licensing decision, the Respondents argue. First, under s. 37 of the CEAA, the responsible authorities' response to the EA had to be approved by the Cabinet before a responsible authority could exercise any power with respect to

the Project. Second, s. 24(4) of the NSCA prevents the CNSC from issuing any licence unless it is of the opinion that the applicant will make adequate provision for, among other things, the protection of the environment and the health and safety of persons.

[88] The first requirement was met when the Cabinet approved the responsible authorities' response to the EA. The CNSC (here, the Panel) was not required to take further steps to investigate the nature of the EA that the Cabinet approved.

[89] The second requirement was also met. To satisfy s. 24(4), the CNSC must evaluate the record and form a view as to whether the licence applicant will comply with the statutory criteria. Here, the Panel examined the record and provided 50 pages of reasons supporting its conclusion that OPG will make adequate provision for the protection of the environment and the health and safety of persons. The Panel accepted that OPG had provided sufficient information to satisfy the regulatory requirements. This is an exercise of discretion that is entitled to deference from this Court.

[90] The Respondents reiterate that the Licence is one of five that OPG will be required to obtain over the life of the Project, and state that the initial licensing process, up to and including the licence to operate, is expected to last approximately nine years. At each licensing stage, OPG will be required to provide, and the CNSC and other regulatory authorities will review, further design and operational details. The public will have an opportunity to take part in all of these licensing proceedings.

Procedural Fairness

[91] With respect to the alleged breaches of procedural fairness, the Respondents say that the level of procedural fairness required in these circumstances is low, and the Panel's very limited references to the Fukushima Task Force Report and Action Plan in no way breached the Applicants' procedural fairness rights.

[92] The Respondents note that the duty of fairness is flexible and context specific: *Baker*, above, at paras 27, 30; *Canada (Attorney General) v Mavi*, 2011 SCC 30 at paras 40-42. In this case, no individual rights were being determined in the proceedings, and the NSCA provides that proceedings before the Commission are to be "dealt with as informally and expeditiously as the circumstances and considerations of fairness permit." The level of procedural fairness required was simply a meaningful opportunity to participate; the Applicants had no reasonable expectation of anything more: *Baker*, above, at paras 24, 25, 27*; Mega International Commercial Bank (Canada) v Canada (Attorney General)*, 2012 FC 407 at paras 33, 35; *Amis de la Rivière Kipawa v Canada (Attorney General)*, 2007 FC 1267 at paras 83-90.

[93] The Applicants had and exercised opportunities for timely and meaningful participation at the public hearing stage of the Panel's process, the Respondents say, including opportunities to comment on concerns arising from the nuclear accident at Fukushima. Thus, the Applicants received all of the fairness to which they were entitled. In addition, there were separate opportunities for public comment and participation in relation to the work of the Task Force itself, and some of the Applicants participated in those processes.

[94] Furthermore, the Respondents argue, before granting any remedy for an alleged breach of procedural fairness the Court must be satisfied that prejudice resulted: *Uniboard Surfaces Inc v Kronotex Fussboden GmbH and Co*, 2006 FCA 398 at para 22; Federal Courts Act, s. 18.1(5). Here, there was no prejudice. The five limited references to the Task Force report and Action Plan were all aimed at requiring OPG to address the Task Force's findings in future submissions to the CNSC. They had no bearing on the Panel's disposition of OPG's Licence application. They merely set out the CNSC's expectations regarding the content of certain documents that will be prepared in the future.

Applicant's Reply Submissions

EA Report T-1572-11

No Collateral Attack

[95] The Applicants argue that, contrary to the Respondents' characterization, the Minister's scoping decisions are not being challenged in this judicial review application. Rather, the application focuses on the errors and omissions of the Panel itself, which occurred after the scoping decisions and were not caused or legally required by those decisions. There was no obvious error of law or jurisdiction in the scoping decision that would have warranted the Court's intervention; rather, the problem is that the comprehensive EA required by law in this case has not been completed, and the responsibility for this rests with the Panel.

[96] The Applicants distinguish between the contents and legal effects of the EIS Guidelines on the one hand and the Agreement establishing the Terms of Reference on the other. They say the effect of the EIS Guidelines was to establish the scope of the project to be assessed, in

exercise of the Minister's powers under ss. 15(1) and 15(3) of the CEAA. The Minister essentially adopted the Project as proposed by the proponent, consistent with *MiningWatch Canada v Canada*, 2010 SCC 2 at paras 39-40, 42.

[97] By contrast, the bounding approach, which was not mentioned in the Project description in the EIS Guidelines, changed the scope of the assessment, not the scope of the Project. The Applicants say the bounding approach has no basis in law, but was nevertheless adopted and utilized by the Panel.

[98] The Applicants acknowledge that other portions of the EIS Guidelines provided direction to the proponent regarding what factors its EIS should address prior to the hearing. However, they argue that the Minister has no statutory authority under the CEAA to approve EIS Guidelines that constrain the scope of the EA to be conducted by the Panel. They argue that, as a matter of statutory interpretation, these Guidelines did not, and cannot, trump, vary or waive the legislative requirements of the CEAA in relation to the scope of the EA to be conducted by the Panel, which includes mandatory consideration of the s. 16 factors. The EIS is not the EA. It merely represents the proponent's submissions, and has no greater status or weight than any other document filed by interveners or federal authorities during the EA process.

[99] The only Ministerial decision delineating the scope of the assessment, the Applicants argue, was the Agreement, which set the Terms of Reference and identified the factors to be considered by the Panel in conducting the EA. In law, the approval of this Agreement represents the exercise of the Minister's discretion under s. 16(3) of the CEAA. In this case, the Minister

essentially adopted all of the considerations listed in ss. 16(1) and 16(2) without limitations or qualifications. There was no mention of the PPE or bounding approach in the Terms of Reference or in the Act. The decision to adopt this approach in the assessment was made by the Panel, and was not required by the Minister's scoping decisions. The question here is whether, through this decision or in other ways, the Panel failed to comply with the requirements of the CEAA and its Terms of Reference, and that question remains ripe for adjudication.

[100] Even if there were potential grounds to challenge the Minister's scoping decision, the Applicants argue, the case law establishes that interlocutory decisions should not be judicially reviewed in the absence of any special or exceptional circumstances. In fact, judicial review applications that fragment, delay, disrupt or prolong administrative proceedings are to be discouraged unless there is a real risk of injustice or fundamental unfairness: *Halifax (Regional Municipality) v Nova Scotia (Human Rights Commission)*, 2012 SCC 10 at para 36. In *MiningWatch*, this Court granted relief on scoping-related grounds even though the application was brought after the completion of the EA rather than at the time of the scoping decision: *MiningWatch (FC)*, above, at paras 145, 148-154. It was reasonable, if not preferable, for the Applicants to participate in the EA process rather than challenging the scoping decision separately. If the Panel had recommended against the Project proceeding, the issue would have been moot: *Lorenz v Air Canada*, [1999] FCJ No 1383 at paras 33-35.

[101] Finally, the Applicants argue that since the main relief claimed is not against the Panel *per se* but against the decisions of the Cabinet and responsible authorities which were not in

existence at the time this application was filed, the 30-day time limit prescribed in s. 18.1(2) of the Federal Courts Act does not apply: *Krause v Canada*, [1999] 2 FC 476 (FCA) at paras 20-24.

ANALYSIS

The Environmental Assessment – T-1572-11

The Dispute

[102] The Court has been asked whether, in conducting the EA for the Project, the Panel complied with the CEAA. Behind the dispute lie two very different views of what the CEAA requires of the Panel in these circumstances.

[103] The Applicants say that the CEAA requires the Panel to take a precautionary and restrictive approach to environmental assessments. They point to and emphasize the positive legal duties imposed by s.4(2) upon all parties subject to the provisions of the Act to "exercise their powers in a manner that protects the environment and human health" and to apply the "precautionary principle." They characterize the CEAA as a "look before you leap" law and cite the jurisprudence that has affirmed this aspect of the Act. In the present case, the Applicants say that the Panel has leapt, and has caused others to leap, before looking closely and far enough.

[104] The Respondents, on the other hand, stress the more fluid and "predictive" nature of environmental assessment and the difficulties of assessing all of the consequences of a project in advance on the basis of existing knowledge. They say that the potentially paralyzing effects of the precautionary principle have been recognized by the Courts, which have endorsed "adaptive

management" as a necessary counterbalance to ensure that socially and economically desirable projects can come to fruition.

[105] The whole nature of environmental assessment involves balancing necessary caution with the flexibility required to make a proposed development achievable, safe and sustainable. The present application is a classic dispute over whether the appropriate balance has been struck for this Project. In my view, however, the magnitude and anticipated longevity of this Project made it especially difficult to get the balance right.

[106] The Applicants wish to portray environmental assessment as a gatekeeping function that prevents environmentally harmful projects before they get off the ground (or before shovels go into the ground) (see *Bennett Environmental*, above, at paras 82-83). Indeed, there have been instances where a finding by a review panel that significant adverse environmental effects are likely to result from a project have caused decision-makers to decide not to permit that project to proceed. However, the Panel's role as it pertains to the decision-making aspect of environmental assessment is to ensure that decision-makers have the necessary factual basis to make a scientifically informed decision. Justice Tremblay-Lamer described this division of roles and responsibilities in *Pembina Institute*, above, which is discussed further below. This is consistent with the Panel's own view that its "mandate… was to assess the environmental effects of the Project and determine whether it is likely to cause significant adverse environmental effects, taking into account the implementation of mitigation measures" (EA Report at p. 37). As discussed below, the Panel's role does not extend to the elimination of all uncertainty; rather, it must be possible for decision-makers to reasonably conclude that a project is likely, or is not

likely, to cause significant adverse environmental effects, keeping in mind the guiding principles set out below, including the principle of precaution.

[107] The primary responsibility for assessing whether significant adverse environmental effects are likely to result from a project lies with the body conducting the environmental assessment (here, the Panel) and the subsequent decision-makers, not the Court. The Panel's expertise, the resources available to it, and the nature of its process, as illustrated in the EA Report in the present matter, make it better placed to bear and discharge this responsibility. What the Court provides is an added layer of accountability, ensuring that the process followed by the Panel was in keeping with the rules of fairness, that the Panel fulfilled its obligations as outlined in the CEAA, and that the conclusions reached meet the standard of being reasonable as described at paragraph 31 above.

The Law and Guiding Principles

[108] In order to assess the Project properly, the Panel was obliged to conduct itself in accordance with the CEAA and the judicial guidance that has attached itself to that Act. The basic duty of the Panel was to assess OPG's proposal and prepare a report in accordance with s.34 of the CEAA. As s. 2 of the CEAA tells us, an "assessment by a review panel" means

> an environmental assessment that is conducted by a review panel established pursuant to section 33 and that includes consideration of the factors required to be considered under subsection 16(1) and (2).

[109] Subsections 16(1) and (2) of the Act provide as follows:

Factors to be considered **Éléments à examiner**

16. (1) Every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public that are received in accordance with this Act and the regulations;

(d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and

(e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be

16. (1) L'examen préalable, l'étude approfondie, la médiation ou l'examen par une commission d'un projet portent notamment sur les éléments suivants :

a) les effets environnementaux du projet, y compris ceux causés par les accidents ou défaillances pouvant en résulter, et les effets cumulatifs que sa réalisation, combinée à l'existence d'autres ouvrages ou à la réalisation d'autres projets ou activités, est susceptible de causer à l'environnement;

b) l'importance des effets visés à l'alinéa a);

c) les observations du public à cet égard, reçues conformément à la présente loi et aux règlements;

d) les mesures d'atténuation réalisables, sur les plans technique et économique, des effets environnementaux importants du projet;

e) tout autre élément utile à l'examen préalable, à l'étude approfondie, à la médiation ou à l'examen par une commission, notamment la nécessité du projet et ses solutions de rechange, — dont l'autorité responsable ou, sauf dans le cas d'un examen préalable, le ministre, après consultation de celle-ci, peut

considered.	exiger la prise en compte.
Additional factors	**Éléments supplémentaires**
(2) In addition to the factors set out in subsection (1), every comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:	(2) L'étude approfondie d'un projet et l'évaluation environnementale qui fait l'objet d'une médiation ou d'un examen par une commission portent également sur les éléments suivants :
(a) the purpose of the project;	a) les raisons d'être du projet;
(b) alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;	b) les solutions de rechange réalisables sur les plans technique et économique, et leurs effets environnementaux;
(c) the need for, and the requirements of, any follow-up program in respect of the project; and	c) la nécessité d'un programme de suivi du projet, ainsi que ses modalités;
(d) the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.	d) la capacité des ressources renouvelables, risquant d'être touchées de façon importante par le projet, de répondre aux besoins du présent et à ceux des générations futures.

[110] Important for this application is the relevant definition of "project" in s. 2; it means

> (a) in relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work.

[111] The Project in this case required federal approvals under the NSCA, the Fisheries Act and the NWPA, and this meant that an EA under the CEAA had to be completed and result in a positive course of action decision by each responsible authority (see CEAA, s. 37(1)). That course of action is required to be "in conformity with the approval of the Governor in Council" (CEAA, s. 37(1.1)(c)), meaning that the federal Cabinet must give its approval before a project of this nature can move forward. The responsible authorities involved were obliged by the Act to ensure that an EA was conducted as early as practicable in the planning stages of the Project:

Timing of assessment	**Moment de l'évaluation**
11. (1) Where an environmental assessment of a project is required, the federal authority referred to in section 5 in relation to the project shall ensure that the environmental assessment is conducted as early as is practicable in the planning stages of the project and before irrevocable decisions are made, and shall be referred to in this Act as the responsible authority in relation to the project.	11. (1) Dans le cas où l'évaluation environnementale d'un projet est obligatoire, l'autorité fédérale visée à l'article 5 veille à ce que l'évaluation environnementale soit effectuée le plus tôt possible au stade de la planification du projet, avant la prise d'une décision irrévocable, et est appelée, dans la présente loi, l'autorité responsable de ce projet.

[112] The words "as early as is practicable in the planning stages of the project" have a particular significance for the present dispute because the principal argument of the Applicants is that there was no "project" to assess, or the Project was not sufficiently realized to permit a meaningful EA.

[113] As OPG points out in written submissions, proceeding with the Project requires both environmental assessment and regulatory licensing. Each of the five phases in the lifecycle of a

nuclear power plant requires the proponent to acquire a licence from the CNSC under s. 24(2) of the NSCA: (1) a licence to prepare site; (2) a licence to construct; (3) a licence to operate; (4) a licence to decommission; and (5) a licence to abandon. The Law List Regulations made under the CEAA provide that an EA is required before any licence is issued under s. 24(2) of the NSCA. This requirement applies to each of the five licences necessary in the lifecycle of a nuclear power plant; however, as the Applicants note, this does not mean there will be future EAs for this Project under the CEAA or its successor legislation. The EA under consideration here covered all phases of the Project's lifecycle. Before issuing each licence, the CNSC must assure itself that the EA still applies. If the Project has changed in some fundamental way, a new EA may be required (see Government of Canada's Response to the Joint Review Panel Report, (Recommendation 1), Applicant's Record in T-1723-12 at p. 920 [Government Response]; Reasons for the Licence Decision at para 96, Applicant's Record in T-1723-12 at p. 41; CEAA, s. 24(2)), but it may be that this is the only EA that will be conducted throughout the lifecycle of the Project.

[114] Like all other environmental assessments under the CEAA, the EA in this case had to be conducted "as early as is practicable in the planning stages of the project and before irrevocable decisions are made."

[115] It was the application for a Site Preparation License by OPG that triggered the EA in this case. In March 2008, following a recommendation by the CNSC, the Minister of the Environment referred the Project for an EA by a review panel. A joint review panel approach was adopted because both the EA and the Licence to prepare the site required a public hearing

process. The appointments to the Panel were announced on October 30, 2009 and the Panel got down to work.

[116] As this brief outline of the obligations of the Panel under the CEAA reveals, there is an inherent and inevitable tension between the need to ensure that an EA is conducted "as early as practicable in the planning stages of the project and before revocable decisions are made" and the obligations of the Panel to ensure that the s. 16(1) and (2) factors are given a meaningful consideration. This tension lies at the heart of the present dispute. The Applicants say that the proposed Project was too hypothetical and inchoate to allow for a meaningful EA in accordance with the Act. The Respondents, of course, argue the contrary.

[117] There is nothing in the CEAA itself to tell us when a project is sufficiently realized to allow for a meaningful EA in accordance with the Act, so we need to turn to the case law for guidance on this central issue.

[118] In this regard, the Applicants rightly refer the Court to the words of Justice Reed in *Friends of the Island*, above, to the effect that an EA decision should occur at a time when the proponent selects a specific project, and describes it in a sufficient level of detail to allow for and facilitate meaningful agency and public review of potential environmental effects. In other words, there must be something that goes beyond the concept stage. Justice Reed noted that "public hearings on a generic proposal are not a substitute for a specific evaluation of the actual project which it is planned to construct" (paras 53 and 59).

[119] It seems to me, however, that the issue of whether a proposed project has the detail required to facilitate a meaningful EA and allow for agency and public review will always be a question of fact in each case. There is no easy conceptual answer to this issue, and it will always depend upon the particular project and the contents of the particular proposal. What is more, this is a matter that the assessing panel itself will always have to consider and decide, because it is an inherent aspect of environmental assessment in accordance with the CEAA. In my view, all the Court can do is to assess whether, on a given set of facts, and given the nature of the project proposed, such a finding by any panel is reasonable. I think this view is supported by other cases that have dealt with this issue.

[120] For example, I think the Federal Court of Appeal decision in *Inverhuron (FCA)*, above, confirms the inevitability of this approach:

> [56] Given the nature of the process and the differences between the various types of projects subject to environmental assessment, there can be no one prescriptive method for conducting an environmental assessment. Indeed, the appellant was unable to direct the Court to any authority for a rule of law that would require Ontario Hydro to conduct the sort of detailed analysis of radiological effects that it seeks. The appellant did point to the case of *Friends of the Island v Canada (Minister of Public Works)* as standing for the proposition that a generic environmental assessment was not sufficient. However, that case dealt with an assessment conducted under the very different scheme of an order in council that preceded the current Canadian Environmental Assessment Act. Moreover, in that case, Reed J. refused to consider whether the order even required that a proposed project be assessed "at the concept stage or at a more specific design stage." She simply held that the assessment must take place when the environmental implications of a project can be fully considered. In my opinion, the assessment at issue in the present case was conducted at such a time.
>
> [emphasis added, footnotes omitted]

[121] In his recent decision in *Grand Riverkeeper*, above, Justice Near (as he then was) reiterated and summarized the role and purpose of a joint review panel in the EA process:

> [29] A JRP is established to fulfill an information gathering and recommending function under CEAA (section 34 of CEAA; *Express Pipelines*, above, at para 14). The Panel does not render any final decisions with respect to the Project, nor does it make absolutely binding recommendations. Rather, its primary goal is to assist the RAs - the ultimate decision-makers - in obtaining the information they need to make environmentally informed decisions. It is one piece of the decision-making process mandated by CEAA.
>
> […]
>
> [43] The basic goals of the EA process writ large are to ensure "(1) early identification and evaluation of all potential environmental consequences of a proposed undertaking; [and] (2) decision making that both guarantees the adequacy of this process and reconciles, to the greatest extent possible, the proponent's development desires with environmental protection and preservation" (*Friends of the Oldman River Society v Canada (Minister of Transport)*, [1992] SCJ No 1, [1992] 1 SCR 3 at para 95)…
>
> […]

[122] In the present case, the record shows that, in September 2008, the Canadian Environmental Assessment Agency and the CNSC released draft Environmental Impact Statement (EIS) Guidelines and a draft Joint Review Panel Agreement. The purpose of the EIS Guidelines was to identify the information OPG would need to include in the EIS, a document that would provide a detailed analysis of the potential environmental effects of the Project. The purpose of the Agreement was, among other things, to set out the Terms of Reference the Panel would follow in conducting the EA. Those documents were finalized in March 2009 following a public comment period.

[123] As outlined below in greater detail, the Terms of Reference set out in the Agreement were the mechanism through which the Minister, in accordance with s. 15(1)(b) and (3)(b) and s. 16(3) of the CEAA, fixed the scope of the Project and the factors to be considered in the EA. The EIS Guidelines, which were issued simultaneously, offer some assistance to the Court in interpreting what the Minister intended.

The Issues Raised

No Project to Assess

[124] The Applicants say that the Panel failed to conduct an EA of a "project" because the Project contained in OPG's proposal did not satisfy the definition of "project" in s. 2 of the CEAA. They argue it was not a physical work containing sufficient detail to allow for a meaningful EA. The essence of the Applicants' argument is as follows:

> In this case, however, the Applicants submit that the EA conducted by the [Panel] should have obtained specific and reasonably detailed information regarding OPG's proposed construction, operation, modification, decommissioning, abandonment or other undertakings that form part of the life cycle of the physical work itself, or that are subsidiary or ancillary to the physical work. In essence, OPG has presented an over-generalized collection of conceptual options and vague site development choices that it would make in the post-EA period, but without further assessment under the CEAA. Thus, what the [Panel] purported to assess was a plan – a proposed or tentative course of future action – rather than a "project" within the meaning of the CEAA.

[125] In other words, the Applicants say that what the Panel had before it was not a "project," but "merely a plan for future planning, assessment, and decision-making," and this undermines

and is inconsistent with the precautionary principle of international law enshrined in s. 4(2) of the CEAA and endorsed by the Supreme Court in *Spraytech*, above, and other cases.

[126] The Applicants make much of the distinction between a "plan for future planning" and the need for a "physical work" in the first branch of the definition of "project." There is no definition of "physical work" in the CEAA. However, it seems to me that the OPG proposal was to construct, operate, modify, decommission and abandon a nuclear power facility on the site of the present facility at Darlington. If the proposal is carried out it will result in a physical work. In my view, this is no different from any other proposal for a project. The real issue is whether the proposal for the Project in this case contains sufficient detail to permit a meaningful EA in accordance with the terms of the Act. This does not, in my view, give rise to an issue of statutory interpretation. As I said earlier, it was basically a question of fact to be determined by the Panel as part of its assessment of the proposed Project, or it is a question of mixed fact and law (inevitably fact-heavy) that determines whether the OPG proposal contained sufficient detail to permit a meaningful EA in accordance with the terms of the Act, including the extent of the obligations set out in ss. 16 and 34.

[127] The Applicants' essential complaint can be summarized as follows:

> As identified in the Report, the [Panel] itself found that key information about the proposed Project was absent from the EA documentation. For example, the Panel found that no specific nuclear reactor technology, site design layout, cooling water option, used nuclear fuel storage option, or radioactive waste management option has been selected. Thus, at the present time, federal decision-makers still do not know: (a) the particulars of the specific project to be implemented at the Darlington site; (b) the full range of site-specific or cumulative environmental effects; or (c) whether there are feasible mitigation measures over the

> project's full lifecycle. These and other fundamental gaps are attributable to the fact that what the [Panel] had before it was not a "project", but merely a plan for future planning, assessment, and decision-making.

[128] The understandable concern of the Applicants is that until a specific reactor technology is chosen it is not possible to assess the environmental impact of the Project. This concern was placed before the Panel and rejected. In my view, the issue for the Court is whether that rejection was reasonable, not whether the proposal contained a "physical work."

[129] The proposal was not, in my view, hypothetical. It referred to four specific reactor options. Hence, the task of the Panel was to assess the environmental impact of a project that would eventually select one of those options. A project that contains technological options is not necessarily inchoate or merely conceptual in nature. It simply means that the EA must consider and address environmental impact in a way that accounts for all four options, and irrespective of which option is eventually chosen. This complicates the assessment but, in my view, it does not necessarily render it hypothetical, or remove the Project in this case from the definition of "project" contained in the CEAA.

Improper Collateral Attack

[130] The Respondents complain that the Applicants' allegation that the Panel failed to assess a "project" as defined by the CEAA is an improper collateral attack on the scoping decision of the Minister, which fixed the Terms of Reference and the contents of the EIS Guidelines and determined what it was the Panel had to assess in this case.

[131] I have already concluded that the bounding approach included in the OPG proposal and accepted by the Panel was not inconsistent with the definition of "project" under the CEAA, and that the real issue is whether it was possible to conduct a meaningful EA based on the information available. Nevertheless, it is necessary to consider the Respondents' argument about the nature of the Minister's scoping decision, because it has potential implications for the main issue in this application, which is whether the EA was conducted in a manner that complied with the requirements of the CEAA.

[132] Essentially, the Respondents' position on improper collateral attack is set out by the AGC in written submissions:

> 36. The OPG Project Description, incorporated by reference into the scoping decision, contains an explanation of the "bounding approach". The Applicants participated in the public comment period on the draft [Panel] Agreement and, accordingly, had notice of its contents. The Applicants could have applied for a judicial review of the scoping decision. They did not.
>
> 37. The scoping decision and the EA decision were made by separate decision-makers (the Minister and the [Panel], respectively), at different times (March 2009 and August 2011, respectively). Moreover, the decisions involve distinct issues: the scoping decision set the parameters for the EA pursuant to paragraph 15(1)(b) and 15(3)(b) of the CEAA; the [Panel]decision evaluates the environmental effects of the Project, pursuant to section 34 and subsections 16(1) and (2) of the CEAA.
>
> 38. The Applicants seek to overturn the scoping decision by stretching the boundaries of this judicial review beyond the subject [Panel] decision and the forms of relief sought in their Notice of Application. In light of the scoping decision, the [Panel] properly proceeded on the premise that the scope of the Project was based on the bounding approach [Court's emphasis]. Even if the Applicants had chosen to properly challenge the scoping of the project, when they had the opportunity, they have failed to establish how it was erroneous, given the requirement to assess a

> project "as early as is practicable in the planning stages" and before irrevocable decisions are made [AGC's emphasis]."

[133] The Applicants' answer to these allegations is that they are not challenging the Minister's scoping decisions. They say that the "overarching problem addressed by the present judicial review application is that the comprehensive environmental assessment required by law – and by the Minister's scoping decisions – has not been completed to date…" In more detail, their argument is as follows:

> 14. In arguing that this aspect of the application for judicial review is time-barred, the Respondents appear to have mischaracterized the relevant submissions in the Applicants' memorandum of fact and law (pages 12-17). In essence, the Applicants' submission is that in order for there to be a "project" as defined in section 2 of the CEAA, a proponent must identify the specific nature of the proposed physical work(s), and must have selected the preferred means of carrying it out. The Applicants submit that the [Panel] was legally required to gather and analyze the information needed to assess the environmental effects of an identifiable new nuclear power plant project. Thus, the Applicants are specifically challenging the [Panel]'s exercise of its mandate under the CEAA, and are not challenging the Minister's decision regarding the "scope of the project" under subsections 15(1) and 15(3) of the CEAA. This distinction is consistent with the Supreme Court of Canada's decision in *Miningwatch*, where the Court held that the word "project" as contained in the CEAA refers to a "project as proposed" by the proponent, and not the "project as scoped."

[134] I think the Respondents are mixing issues when they argue the Minister's decision regarding the scope of the Project included a decision that the "bounding scenario" approach must be followed in conducting the EA.

[135] The scope of the Project relates to the physical works to be constructed and the activities to be carried out in relation to them. The bounding scenario approach describes a methodology for conducting the assessment of the Project. In my view, the two are separate issues.

[136] However, the Minister also has authority under the CEAA to determine "[t]he scope of the factors to be taken into consideration pursuant to paragraphs (1)(a), (b) and (d) and (2)(b), (c) and (d)" of the Act (CEAA, s. 16(3)). It may be that the Minister could restrict the scope of the factors to be considered in a manner that would confine the Panel to considering a bounding scenario, or PPE. The question is whether the Minister did so here.

[137] The CEAA required and empowered the Minister to make two separate scoping decisions with respect to environmental assessments referred to a review panel.

[138] First, under s. 15(1)(b), the Minister, after consulting with the responsible authority, was to determine the "scope of the project in relation to which an environmental assessment is to be conducted." Paragraph 15(3)(b) states that where, as here, the project is in relation to a physical work, the EA must include "every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of [the Minister] likely to be carried out in relation to that physical work." Subsection 15.1, which was enacted after the scoping decision under consideration here, and is therefore not relevant, provides the Minister with discretion to depart from the principle just stated. So, under s. 15, the Minister was to determine the scope of the Project.

[139] Second, s. 16(3)(b) empowers the Minister, "when fixing the terms of reference of the… review panel," to determine the "scope of the factors to be taken into consideration pursuant to paragraphs [16](1)(a), (b) and (d) and [16](2)(b), (c) and (d)." Thus, consideration of most of the mandatory factors under s. 16 could be circumscribed by the Minister. The exceptions are "comments from the public… received in accordance with this Act and the regulations" (s. 16(1)(c)), and "the purpose of the project" (s. 16(2)(a)). In addition, the Minister had discretion as to whether certain other factors were considered at all, including "the need for the project and alternatives to the project" (s. 16(1)(e)). So, under s. 16, the Minister was to determine the scope of most of the factors considered in relation to the Project.

[140] The Respondents say that three documents are relevant to these decisions: the Agreement (which includes the Panel's Terms of Reference), the EIS Guidelines, and the Project Description, which the Respondents argue was incorporated by reference. The Project Description is a document prepared by OPG that was issued with the Notice of Commencement of the EA process in May 2007 (see Applicant's Record, Vol. 4., Tab 4A, Project Description for the Site Preparation, Construction and Operation of the Darlington B Nuclear Generating Station, April 12, 2007 [Project Description]).

[141] The Applicants say that only the Agreement could define the scope of the Project, though they appear to concede that the EIS Guidelines are relevant to the "scope of the assessment," by which, presumably, they mean the scope of the factors to be considered.

[142] Both the scope of the Project and the scope of the factors to be considered are explicitly addressed in the Agreement, and in particular the Terms of Reference that form a part of it. The Panel was of the view that both the scope of the Project and the scope of the factors to be considered were set out in the Terms of Reference (see EA Report at p. 6), and I agree with this assessment. It may be that the EIS Guidelines can assist the Court in interpreting what the Minister intended, since they were issued simultaneously.

[143] In my view, neither the Agreement nor the EIS Guidelines restricted the Panel to considering a bounding scenario, or mandated the PPE approach.

Scope of the Project

[144] The Agreement defined the term "Project" as follows:

> "Project" means the preparation of a site for, and the construction, operation, decommissioning and abandonment of, up to four new nuclear power reactors on the existing Darlington Nuclear Site within the Municipality of Clarington, Ontario described in Part I of the Appendix to this Agreement;
>
> [emphasis added]

[145] The attached Terms of Reference include the following Project Description:

> **Part I - Project Description**
>
> Pursuant to subsections 15(1)(b) and 15(3)(b) of the Canadian Environmental Assessment Act, the Minister of the Environment is proposing that the scope of the project include the site preparation, construction, operation, decommissioning and abandonment of the project components and activities proposed by OPG as described in OPG New Build Project Environmental Assessment – Project Description.

The scope of the Darlington NNPP Project includes site preparation, construction, operation, decommissioning and abandonment of up to four new nuclear power reactors for the production of up to 4,800 megawatts of electrical generating capacity for supply to the Ontario grid.

Operations would involve activities required to operate and maintain the Darlington NNPP, including management of all conventional and radioactive wastes. The Province of Ontario is considering a range of reactor designs. It is anticipated that each new reactor constructed would have an approximate 60-year operating life and could include a mid-life refurbishment depending on the reactor design technology chosen by the proponent.

The project includes up to four units, consisting of the following principal components:

- Reactor Building – contains the reactor vessel, fuel handling system, heat transport system, moderator, reactivity control mechanisms, shut down systems and containment.

- Turbine Generator Powerhouse – contains the turbines, generators and related systems and structures that convert steam from the operation into electrical energy.

The project also includes the following shared facilities between reactors:

- Condenser Cooling Systems and Structures: including cooling towers or the once-through cooling system with all of its associated submerged intake, forebay and discharge systems.

- Low and Intermediate Level Waste Management Facility (on or off-site)

- Expansion of the existing Darlington Waste Management Facility for storage of used nuclear fuel or construction of a new facility.

Ancillary activities that may be required include the transportation of low and intermediate level waste to be managed offsite at an appropriate licensed facility.

[emphasis added]

[146] This is followed by a more detailed description of the preparation, construction, operation and maintenance, decommissioning and abandonment phases of the Project.

[147] In my view, all of this makes it clear that the Project scope relates to the activities to be carried out in relation to the physical works in question – i.e. the "site preparation, construction, operation, decommissioning and abandonment of up to four new nuclear power reactors." It has nothing to do with the methodology by which the assessment is to be carried out.

[148] The Respondent AGC argues that OPG's Project Description was "incorporated by reference" into the Panel's Terms of Reference, and included an explanation of the "bounding approach" (see Appendix A: Plant Parameter Envelope Description & Reactor Technology Descriptions). However, in my view, it is not possible to read the reference to the Project Description document in the Terms of Reference as a decision that the PPE approach must be adopted as a methodology (much less the sole methodology) for conducting the EA. As the AGC points out, the Terms of Reference state:

- That the site preparation includes "the site preparation, construction, operation, decommissioning and abandonment of the project components and activities proposed by OPG as described in the [Project Description]";

- That the Project "includes up to four units," each consisting of a reactor building and a turbine generator powerhouse; and

- That the Project includes the following shared facilities between reactors: condenser cooling systems and structures (cooling towers or the once-through cooling system); low and intermediate level waste management facility (on or off-site); and expansion of an existing facility or construction of a new facility for storage of used nuclear fuel.

  [AGC's emphasis]

[149] The first of these observations merely confirms what has already been set out above: that the Project consists of the "site preparation, construction, operation, decommissioning and abandonment of up to four new nuclear power reactors." This says nothing about the methodology by which the assessment is to be carried out. The reference in the Terms of Reference to the Project Description prepared by OPG is not a blanket endorsement of everything that document contains, including the description of the PPE approach in Appendix A. Rather, it is a specific observation that the Project consists of "the site preparation, construction, operation, decommissioning and abandonment of the project components and activities proposed by OPG as described in the [Project Description]" (emphasis added).

[150] The second and third observations acknowledge that technology and design options are still being considered for a number of components of the Project. Again, this says nothing about how those options are to be presented and evaluated in the course of the EA. If it proved

necessary, in order to comply with the CEAA, to describe and evaluate each of the options and their potential effects in the same level of detail that would normally be provided if the technology and design choices had already been made, such an approach would be consistent with the language of the Agreement and the Terms of Reference.

[151] In short, as will be seen below in considering the EIS Guidelines, the acknowledgment that "The Province of Ontario is considering a range of reactor designs" does not dictate a particular methodology for conducting the EA.

Scope of the factors to be considered

[152] In relation to the scope of the factors to be considered, it is appropriate to consider both the explicit description of these factors and the Minister's descriptions of the process to be followed in carrying out the assessment.

[153] The Terms of Reference state the following in this regard:

> **Part IV – Scope of the Environmental Assessment and Factors to be Considered in the Review**
>
> The Review will include a consideration of the following factors listed in paragraphs 16(1) (a) to (d) and in subsection 16(2) of the CEAA:
>
> a. The environmental effects of the project, including the environmental effects of malfunctions, accidents or malevolent acts that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
>
> b. The significance of the effects referred to in (a);

c. Comments that are received during the Review;

d. Measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project;

e. Purpose of the Project;

f. Need for the Project;

g. Alternatives to the Project;

h. Alternative means of carrying out the Project that are technically and economically feasible and the environmental effects of any such alternative means;

i. Measures to enhance any beneficial environmental effects;

j. The requirements of a follow-up program in respect of the Project;

k. The capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future; and

l. Consideration of community knowledge and Aboriginal traditional knowledge.

Part V – Scope of Assessment of the Application for Licence to Prepare Site

Pursuant to section 24 of the NSCA and its regulations, the JRP process will include consideration of:

- Whether the applicant is qualified to perform the activity to be licensed; and

- Whether in carrying on that activity the applicant will make adequate provisions for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

There is no reference here to a "bounding scenario" or PPE approach, nor do any restrictions appear to be placed on the consideration of the factors under s. 16.

[154] The terms of the Agreement itself reinforce this view:

> 2.2 Nothing in this JRP Agreement shall be construed as limiting the ability of the JRP to have regard to all considerations that appear to be relevant pursuant to section 24 of the NSCA and to include a consideration of the factors set out in sections 16 and 16.1 of the CEAA.

[155] The same descriptions of the Project, the scope of the assessment and the factors to be considered are essentially repeated in the EIS Guidelines.

[156] In my view, the language of the EIS Guidelines largely supports the Applicant's view that they are addressed primarily to the proponent, and not the Panel. The EIS Guidelines state (at p. 1):

> The purpose of this document is to identify for the proponent, Ontario Power Generation (OPG), the nature, scope and extent of the information that must be addressed in the preparation of the Environmental Impact Statement (EIS) for its proposed New Nuclear Power Plant project (the OPG Darlington NNPP project) for the creation of approximately 4,800 MW of electrical generation capacity…

[157] While the EIS Guidelines use mandatory language for the information to be included, in my view, they leave it to the proponent to determine the method or methods to be employed in advancing evidence to satisfy the Panel that the Project will not have significant adverse environmental effects, stating (at p. 1):

> While the EIS guidelines provide a framework for preparing a complete and accessible EIS, it is the responsibility of the

> proponent to provide sufficient data and analysis on any potential environmental effects to permit proper evaluation by a joint review panel, the public, and technical and regulatory agencies. The EIS guidelines outline the minimum information requirements while providing the proponent with flexibility in selecting methods to compile and analyze data for the EIS.
>
> [emphasis added]

[158] The proponent is free to disagree with the views expressed in the EIS Guidelines as to the information required, but is expected to justify the choices put forward. It is up to the Panel to determine if further information is required (at p. 7):

> The proponent is expected to observe the intent of the EIS guidelines and to identify all environmental effects that are likely to arise from the project (including situations not explicitly identified in these guidelines), the mitigation measures that will be applied, and the significance of any residual adverse effects. It is possible that the EIS guidelines include matters that, in the judgement of the proponent, are not relevant or significant to the project. If such matters are omitted from the EIS, they must be clearly identified in the EIS with appropriate justification so that the public and other interested parties have an opportunity to comment on this judgement. Where the joint review panel disagrees with the proponent's decision, it may require the proponent to provide additional information.
>
> [emphasis added]

[159] Nonetheless, it is clear that there is intended to be a connection between the framework set out in the EIS Guidelines and the decision-making of the Panel. For example, the Panel was to determine whether there was sufficient information to proceed to a hearing according to how well the proponent had responded to the EIS Guidelines. The Terms of Reference state, under Components of the Review:

> 6. The JRP shall schedule and announce the start of the JRP Hearings once it is satisfied that the Proponent's EIS and any

> additional information has adequately responded to the EIS Guidelines.
>
> [emphasis added]

However, even if the EIS Guidelines could be seen to be restrictive of the Panel's deliberations in certain respects, in my view, they do not dictate the "bounding scenario" approach. On the contrary, the EIS Guidelines suggest that a significant level of detail must be provided regarding each of the reactor technologies under consideration and their respective environmental implications. For example, Section 8.1 of the EIS Guidelines states that the following information was to be included in the EIS:

> For each reactor design being considered, include information on the:
>
> - basic configuration, layout, shape, size, design and operation of the facility;
> - performance specifications, design philosophy, reactor type, plant configuration, and all structures, systems and components important to safety;
> - safety characteristics;
> - planned operational life;
> - description of any special commissioning or 'start-up' procedures and requirements;
> - requirements for refurbishment;
> - ageing and wear issues and management of these issues, where relevant to future environmental performance and reliability;
> - physical security systems (excluding prescribed information), designed specifically to isolate the project from the surrounding environment, or to prevent, halt or mitigate the progress or results of malfunctions, accidents or malevolent acts;

- engineered and administrative controls, including the use of an approved margin of sub-criticality for safety, which assure that the entire (out of reactor) process will be sub-critical under normal conditions and credible abnormal conditions – accidents or accident sequences – that have a frequency of occurrence equal to or more than one in a million years;

- stored inventories of radioactive and other hazardous materials, including locations and storage methods, and criticality control plans;

- sources, types and quantities of radioactive and non-radioactive waste, including hazardous waste, predicted to be generated;

- processes and facilities for the management of radioactive and non-radioactive waste, including low, intermediate and spent fuel waste, conventional, sanitary and hazardous wastes, to be generated by the project, including processes such as collection, handling, storage and transportation;

- sources and characteristics of any fire hazards;

- sources and characteristics of any noise, odour, dust and other likely nuisance effects from the project; and

- sources and characteristics of any potential risks (including radiological risks) to workers, the public or the environment from the project.

[160] The Guidelines regarding the more detailed descriptions of each of the phases of the Project that were to be included in the EIS (see EIS Guidelines at sections 8.2 through 8.6) make no mention of a "bounding scenario" approach. For example, the section relating to the operations and maintenance stage states:

> Description of the operation and maintenance phase and timeframe of the project and of the associated activities should include, but are not limited to:

- the commissioning activities such as general verification of equipment and systems, fuelling of reactor;

- pressure testing of containment building, approach to criticality and eventually to full power and connection to the grid;

- the operation and maintenance activities required for systems such as the nuclear steam supply system, turbine generator and feed water systems, cooling water systems, electrical power systems, nuclear safety systems, ancillary systems, systems for operating and maintaining facility security, activities associated with the maintenance program, materials handling systems, solid waste handling systems and administration and support systems;

- activities associated with mid-life refurbishment for CANDU-type reactors as well as activities relating to outages to refuel or for the refurbishment of light water reactors;

- operation of equipment for production of electricity;

- verification, sampling, testing and maintenance during operation at power;

- maintenance, repairs, cleaning, and decontamination during planned shutdowns and outages;

- fuelling and refuelling of the reactor; management of low and intermediate waste and used fuel, including transfer to interim or long-term waste storage facilities;

- past events that are relevant to the assessment of future environmental performance and reliability:

- the sources, quantities and points of release from routine radiological and non-radiological emissions and effluents, including thermal (heat) releases;

- the area of exposure to the physical effects of the discharge jet and intake suction;

- where applicable, characterization of the waste, including estimated activity in becquerels, that will be generated and

> stored at each of the waste management areas as a result of operation and any future refurbishment;
>
> - predictions of future emissions and effluents from the project under normal operating conditions;
> - standard design features and key operational procedures relevant to protection of workers, the public and the environment relating to the project, including the nuclear criticality safety program;
> - operations workforce, composition of workforce and any infrastructure requirements;
> - systems for operating and maintaining the facility security program;
> - emission and effluent control, treatment and monitoring and environmental monitoring;
> - non-radioactive waste handling, storage and disposal; and
> - activities relating to environmental protection and radiation protection.

[161] The portion of the EIS Guidelines relating to "Study Strategy and Methodology" also makes no reference to the bounding scenario or PPE approach. Rather, it says that (at p. 8):

> …The sections in the EIS regarding existing environment and potential adverse environmental effects predictions and assessment must be prepared using best available information and methods, to the highest standards in the relevant subject area. All conclusions must be substantiated.
>
> The EIS must identify all significant gaps in knowledge and understanding where they are relevant to key conclusions presented in the EIS. The steps to be taken by the proponent to address these gaps must also be identified…

[162] The EIS Guidelines refer to a "bounding scenario" or approach in only three places, none of which suggest to me that this was a mandatory overall methodology for assessing the Project

in advance of a reactor technology decision. There is no mention of a "plant parameter envelope."

[163] Section 9 of the EIS Guidelines discusses the need to establish spatial and temporal boundaries for the assessment – that is, to define the geographical area and period of time with respect to which environmental effects were to be assessed. It says the following with respect to temporal boundaries:

> At a minimum, the assessment must include the period of time during which the maximum effect is predicted to occur. "Maximum" refers to the greatest change from baseline conditions to what is predicted and should be bounding across reactor types.
>
> [emphasis added]

[164] Section 11.1 of the EIS Guidelines discusses effects prediction, and includes the following with respect to risk modelling:

> The EIS must describe comprehensive analyses of both the short and long term effects of the project on the environment. The proponent must indicate the degree of uncertainty in predicting the environmental effects identified. When numerical models are used (e.g., a quantitative ecological risk assessment model, a population level ecological risk assessment model) scientific defensibility must be demonstrated by performing model verification (e.g., peer review of model theory), calibration (e.g., adjusting key parameters to site-specific data), validation (e.g., comparison of predicted to observed), sensitivity and uncertainty analysis. Risk modelling of VEC exposure to releases of radionuclides, or hazardous substances (including thermal) shall be determined through the use of upper bounding scenarios or a combination of expected average releases and an upper bounding scenario.
>
> [emphasis added]

[165] Section 12.2 of the EIS Guidelines says the following with respect to nuclear accidents:

> The EIS must identify and describe the probability of possible malfunctions or accidents associated with each reactor design considered and with other facilities in the nuclear power plant that contain radiological substances and must consider the potential adverse environmental effects of these events.
>
> The proponent must credibly demonstrate that it meets the safety goals defined in CNSC Regulatory Document RD-337, "Design of New Nuclear Power Plants", [Reference 10], with some margin on frequency, consequence or both. These safety goals are meant to ensure that the risk posed by a nuclear power plant to members of the public living near the plant is small compared with the risks to which they are normally exposed, and the releases they describe are bounding for all designs.
>
> [emphasis added]

[166] The first and third occurrences use the term "bounding" to indicate that OPG was required to ensure that the full scope of potential effects or impacts was captured in the analysis. The second indicates that a "bounding scenario" approach should be used, alone or in combination with other information, in assessing the risks of exposure to releases of radionuclides or hazardous substances.

[167] I see nothing in any of these descriptions that limits the Panel to a "bounding scenario" analysis, or prevents it from requesting further information if necessary to adequately assess effects on the environment and human health or their significance.

[168] Ultimately, it seems to me that the PPE or "bounding scenario" approach was not dictated by the Agreement or the EIS Guidelines.

[169] Rather, it was selected by OPG, and ultimately accepted by the Panel, as an appropriate method of evaluating the likely environmental effects of the Project in advance of a reactor technology decision. It was open to the Panel to come to a different conclusion, and it is open to the Court to find the Panel's conclusion to have been in error.

[170] This conclusion is relevant both to the Applicants' argument that the EA did not assess a "project" (and the Respondents' allegation that this is a collateral attack on the scoping decision), and to the Applicants' argument that the Panel did not properly assess the Project's environmental effects.

[171] I have already concluded that the Applicants' argument that there was no "project" to assess fails on its merits. Thus, it is not strictly speaking necessary to consider whether it is a collateral attack on the scoping decision, but I include my conclusion on this point here for purpose of completeness.

[172] It is my view that what the Applicants are really attacking is not the scoping decision, but the Minister's decision to refer the Project to a review panel. It seems to me that there must be a "project" before this can occur. It may be that the absence of a "project" would not be plain until the scoping decision is issued, but this is a separate issue.

[173] In any case, it is clear from the Project Description, the Agreement and the EIS Guidelines that there was a "project" to be assessed here.

[174] The real issue, to which I turn below, is whether a CEAA-compliant EA could be (and was) carried out based on a bounding scenario approach. In assessing this, the Minister's power to determine the scope of the factors to be considered, and the use of that power in this case, will need to be considered.

Was there a Failure to Assess the Project in Accordance with the CEAA?

[175] This is the principal determinative issue before me. The Applicants say that even if there was a "project" to assess in this case, the Panel failed to conduct an EA in accordance with the CEAA. Their essential point is that OPG's failure to designate a single and specific reactor technology for the Project meant that the Panel could not, and did not, produce an EA that complied with its obligations under s. 34 of the Act, or take into account the factors stipulated in ss.16(1) and 16(2) of the Act. Once again, in my view, this is a factual issue or a question of mixed fact and law. The Panel found that it did have the requisite information and input to assess the environmental impact of the Project in accordance with the Act. The issue for the Court is whether this conclusion was reasonable.

[176] The main problem identified by the Applicants is, once again, that OPG's failure to select a particular reactor option in its proposal prevented a meaningful EA in accordance with the Act.

[177] OPG's approach to this issue in the Project proposal was the "plant parameter envelope" or "bounding" approach. As noted above, OPG's Project Description contained an appendix (Appendix A) titled "Plant Parameter Envelope Description & Reactor Technology Descriptions," which discussed the use of the PPE method and stated that OPG was "considering

several types of reactor designs for the potential new nuclear power generating station" at the Project site. OPG explained that a PPE was developed by examining each reactor design, and for each parameter (e.g., radiological emissions) using the value with the greatest potential to cause an adverse environmental effect.

[178] The Panel describes the PPE approach in its EA Report as follows at pages 11-12 of the EA Report:

> 2.1 MULTIPLE TECHNOLOGY APPROACH
>
> A number of vendors and reactor technologies were considered in the procurement process initiated by the Government of Ontario. No decision was made on the choice of a reactor technology prior to the start of the environmental assessment. This approach led to the development of a plant parameter envelope to encompass the range of reactor technologies under consideration. The plant parameter envelope is a set of data derived from available vendor information for multiple reactor technologies, and provides a bounding envelope of plant design and site parameter values for use in the Application for a Licence to Prepare Site and environmental assessment.
>
> OPG explained that the plant parameter envelope identified a set of design parameters and associated limiting values, such as a worst-case scenario, from the multiple technologies that are used to describe the bounding features of the Project, OPG stated that this approach is consistent with *Canadian Nuclear Safety Commission Information Guide INFO-0756, Rev 1, Licensing Process for New Nuclear Power Plants in Canada* (May 2008), which provides an overview of the process for licensing new nuclear power plants in Canada, taking into consideration the requirements of the *Nuclear Safety and Control Act* and associated regulations, as well as an environmental assessment.
>
> The bounding plant parameter envelope used in the assessment of effects is based on the limiting values for parameters either from:
>
> - the reactor technology examples;

- the reactor class, such as pressurized water reactor, pressurized heavy and light water hybrid reactor and pressurized heavy water reactor; or
- the site itself.

OPG explained that the framework bounded by the plant parameter envelope was established to ensure that the potential adverse effects of any of the reactor types currently under consideration by the Government of Ontario are included for the purposes of the effects analysis. As such, the significance of the potential adverse effects of any reactor technology that is bounded by the analysis has been considered.

If the Project is to go forward, the reactor technology selected by the Government of Ontario must be demonstrated to conform to the plant parameter envelope and regulatory requirements, and must be consistent with the assumptions, conclusions and recommendations of the environmental assessment and the details of the Government response to this Joint Review Panel Environmental Assessment Report. This evaluation will be required to be performed by the responsible authorities once a reactor technology is selected and will be required to be demonstrated as part of the licence process for an Application for a Licence to Construct.

2.2 REACTOR DESIGNS

The following reactor technologies formed the basis of the plant parameter envelope:

- ACR 1000 by Atomic Energy of Canada Limited;
- EPR by AREVA;
- AP 1000 by Westinghouse; and
- Enhanced CANDU 6 (EC6) by Atomic Energy of Canada Limited.

For environmental assessment purposes, the number of reactors that would represent full build-out of the Project for each reactor type was adopted to consider the potential effects during the operation and maintenance phase of the Project. The scope of the Project includes the maximum potential development of the site within the upper limit of 4,800 megawatts. This type that would be required to achieve the upper limit of 4,800 megawatts of electrical power generation will vary, depending on the reactor technology, as follows:

- ACR 1000 to achieve approximately 4,300 megawatts;
- EPR to achieve approximately 4,700 megawatts;
- AP 1000 to achieve approximately 4,200 megawatts; and
- EC6 to achieve approximately 2,960 megawatts.

During the review and comment period, CNSC staff recommended to the Panel that OPG should update the plant parameter envelope for the Project to include the EC6 reactor technology by Atomic Energy of Canada Limited. The basis for the CNSC staff recommendation was that the procurement process for the Government of Ontario reactor selection had been suspended and no reactor had yet been selected. CNSC staff expressed the view that the EC6 technology was a possible technology choice for the Project, and as such, it should be encompassed by the plant parameter envelope. CNSC staff noted that in the interest of regulatory efficiency and to minimize the likelihood that another environmental assessment would be required should the EC6 reactor technology be put forth as the technology to be constructed on the Darlington Nuclear site, it would be prudent to also consider this technology option within the current review process being conducted by the Panel.

OPG responded that the plant parameter envelope for the Project was sufficiently broad to include other alternative technologies that are commercially available that may be selected by the Government of Ontario, including boiling water reactors and the EC6 reactor technology. OPG was of the view that the conclusions of the environmental assessment would not change should an alternative reactor technology be selected.

In consideration of the CNSC staff recommendation and the OPG response, the Panel directed OPG to provide a description of the elements of those technologies that could be outside the plant parameter envelope defined in the EIS. OPG was to provide details on how this could change the potential effects of the Project on components of the environment and any other aspects of the environmental assessment, and any required changes to the responses to information requests that OPG had already provided to the Panel.

OPG responded to this request by providing an update to the plant parameter envelope and responses to information requests, taking the EC6 reactor technology into consideration. Following further requests for information from the Panel, a revised version of the plant parameter envelope was submitted by OPG on November 30, 2010. OPG noted that a similar assessment was not performed for a

> boiling water reactor as insufficient information was available to allow OPG to do so. OPG noted that should the Government of Ontario decide to include boiling water-type reactors in its procurement process, the plant parameter envelope would be updated accordingly.
>
> Furthermore, OPG stated that although some plant parameter envelope values changed as a result of the EC6 consideration and other considerations, no additional environmental effects were anticipated and no additional mitigation measures would be required.

[179] The Panel then assessed and accepted the PPE approach in the following terms at pages 45-46 of the EA Report (in section 4.5.1 Alternative Reactor Technologies):

> Panel Assessment
>
> According to CNSC staff, the reactor designs that were assessed as bounded by the plant parameter envelope are all enhancements of designs of currently-operating reactors. These designs incorporate characteristics that provide improvements in safety from previous designs. Among the changes is the incorporation of passive safety features, such as the capability to continue to maintain safety functions, even in instances of loss of power. CNSC staff stated that the designs provide overlapping redundant measures for the prevention and mitigation of effects from reactor malfunctions and accidents and that all of these alternative designs have robust containment structures.
>
> CNSC staff noted that much of the design and safety information considered for the reactor designs covered in the plant parameter envelope is preliminary information that may be accepted for the purposes of the environmental assessment. CNSC staff indicated that final detailed design information and safety analyses will be required to confirm compliance with regulatory requirements at the time of an Application for a Licence to Construct a reactor.
>
> CNSC staff concluded that the plant parameter envelope approach allowed for the assessment of the potential adverse effects of a reasonable range of reactor designs in accordance with the EIS Guidelines.
>
> The Panel accepts the use of a plant parameter envelope for environmental assessment purposes as an approach that allows the

> prediction of adverse environmental effects for a select group of reactor technologies. The Panel recognizes, however, that this is a departure from a more standard approach where the major components of a project are defined in advance of an environmental assessment.
>
> Additionally, the Panel notes that aspects of the plant parameter envelope were based on preliminary design information. As such, there will be a need for ongoing verification of the conclusions reached on the significance of adverse environmental effects.
>
> The selection of a reactor technology that is not one of the four designs considered will require careful review to confirm the continued applicability of the assumptions and conclusions of this environmental assessment. A determination of the applicability of this environmental assessment will be made by the responsible authorities when a reactor technology for the Project is selected by the Government of Ontario.
>
> It is noted that, of the four reactor designs described in the EIS, only the Atomic Energy of Canada Limited EC6 has entered operational service and has environmental performance data from operating plants. However, with respect to technology safety and expected environmental performance, all of these reactors incorporate passive safety features and are designed to mitigate the effects of malfunctions and accidents. The safety features provide defence in- depth and systems to control and cool the reactor and to contain radioactivity in the plant. These attributes are common features of modern reactor designs.
>
> **Recommendation # 1:**
>
> The Panel understands that prior to construction, the Canadian Nuclear Safety Commission will determine whether this environmental assessment is applicable to the reactor technology selected by the Government of Ontario for the Project. Nevertheless, if the selected reactor technology is fundamentally different from the specific reactor technologies bounded by the plant parameter envelope, the Panel recommends that a new environmental assessment be conducted

[180] The Applicants point out that the CEAA does not refer to such concepts as a PPE or "bounding scenario," or any similar concept. However, it is noteworthy in my view that the

CEAA does not refer to any particular approach to environmental assessment and, as the Federal Court of Appeal made clear in *Inverhuron (FCA)*, above, at para 56, "given the nature of the process and the differences between the various types of projects subject to environmental assessment, there can be no one prescriptive method for conducting an environmental assessment." It seems to me that, by necessity, the issue in every case will be whether the method chosen permits a meaningful EA to take place in accordance with the CEAA. In the present case, the Panel concluded that a PPE approach did allow it to assess the Project appropriately and concluded that it "is not likely to cause significant environmental effects, provided mitigation measures proposed and commitments made by OPG during the review and the Panel's recommendations are implemented."

[181] The Applicants have made it clear that they disagree with the PPE approach and the Panel's assessment of that approach. In my view, however, they have not demonstrated, given the obligations of the Panel under ss. 34, 15, 16(1) and 16(2) and the Terms of Reference contained in the Agreement, that the PPE approach was inherently incapable of achieving a meaningful EA. Nor have they shown that it failed to do so in this case, in such a way as to render the Panel's EA Report unreasonable, except for those matters that I specifically refer to below in these reasons.

[182] The bounding framework incorporated the PPE, which is a set of design parameters that delimit key features of the Project. The PPE represents the limiting values which have the greatest potential to result in an adverse environmental effect for salient elements of the design options that were identified in the proposed Project. The different reactor types were presented as

alternative methods of carrying out the Project. For any given environmental component, the Panel based its analysis on whichever of the four reactor designs would have the greatest effect on that component. The reasoning is that if the maximum effect on each component can be adequately mitigated, then the lesser impacts of the other alternative technology options can also be adequately mitigated. The Panel concluded that the proposed PPE approach allowed it to assess the potential environmental impact of all of the potential reactor designs and configurations put forward by OPG as options for the Project.

[183] The Panel made it clear that if the reactor technology ultimately selected for the Project is fundamentally different from the specific reactor technologies bounded by the PPE, then a new EA would need to be conducted. The Panel also acknowledged that the PPE approach was "a departure from a more standard approach where the major components of the project are defined in advance of an environmental assessment," yet nevertheless accepted "the use of a plant parameter envelope for environmental assessment purposes as an approach that allows the prediction of adverse environmental effects for a select group of reactor technologies."

[184] On the evidence before me in this application, and apart from the specific instances referred to below, the Applicants have not established that this conclusion was unreasonable, given the facts before the Panel. In *Friends of the Island*, above, Justice Reed made it clear that the issue is not whether a project is at the concept stage or at a more specific design stage, but whether a project is at a stage when its environmental impact can be fully considered. This approach was endorsed by the Federal Court of Appeal in *Inverhuron (FCA)*, above, where Justice Sexton accepted the reference design approach put forward in that case and concluded

that the methodology selected by the proponent provided the Minister with a rational basis to conclude that the project was not likely to cause significant adverse environmental impacts.

[185] The CEAA contains no prescriptive method for conducting an assessment. The Applicants say that a meaningful practical assessment requires, in this case at least, that a specific reactor technology be chosen and identified to the Panel. However, s. 11(1) of the CEAA expressly requires that federal authorities ensure that an EA is conducted as early as is practicable in the planning stages of a project and before irrevocable decisions are made. So the statutory language of practicability, in my view, is the key concept for determining how and when an EA should be conducted. This will be a question of fact in each case. In the present case, the Panel found that, given all of the submissions that had been made, it was in a position to conduct an EA of the Project in accordance with the CEAA. The Applicants have not demonstrated that this was an unreasonable conclusion. This does not mean, however, that all aspects of the Project were appropriately dealt with by the Panel, and I have set out later in these reasons where I think the Panel did not reasonably address specific topics of concern.

What did the CEAA require?

[186] I agree with the Applicants that the Panel was obliged to act, in particular, in accordance with ss. 15(3), 16(1) and (2) and 34 of the CEAA. The basic complaint is that the Panel did not assess key aspects of the Project and left too much to future study, analyses and decisions that would be made by others. The fundamental issue is whether, given the information and submissions before the Panel, its conclusion that the Project would not likely give rise to adverse environmental consequences was reasonable, and whether the Panel reasonably complied with

the CEAA and set out the evidentiary basis upon which the s. 37 decision-makers could make their decisions.

[187] Section 15 of the Act relates to the Minister's scoping decision, and s. 15(3) must be read in that context. It says that where a project is in relation to a physical work, the EA must include "every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of… the Minister, after consulting with the responsible authority, likely to be carried out in relation to that physical work" (CEAA, s. 15(3)). This ensures that project components or activities are not scoped out of the assessment. The Applicants have not pointed to any Project components (activities or undertakings relating to the Project) that were completely left out of the assessment in this case; rather, their complaint is with the level of information that was available to assess some of the project components. Thus, the real focus of the analysis here must be on the obligations set out in ss. 16 and 34 of the Act.

[188] As the Court has previously observed, certain "guiding tenets" can help to interpret the scope of these duties, including the precautionary principle and that of adaptive management (*Pembina Institute*, above, at para 33). In assessing where the line should be drawn between applying the "precautionary approach" and allowing for "adaptive management," there is considerable guidance in the CEAA itself and in the case law.

[189] First of all, we know that, in accordance with s. 11(1) of the CEAA, an EA has to be conducted as "early as practicable in the planning stages of the project and before irrevocable

decisions are made… .” Several cases have pointed out that a panel's role is one of information gathering and recommending, and that finality and certainty in EAs are simply not possible. In *Express Pipelines*, above, for example, Justice Hugessen describes the role of the panel as follows:

> [14] Finally, we were asked to find that the panel had improperly delegated some of its functions when it recommended that certain further studies and ongoing reports to the National Energy Board should be made before, during and after construction. This argument misconceives the panel's function which is simply one of information gathering and recommending. The panel's view that the evidence before it was adequate to allow it to complete that function "as early as is practicable in the planning stages ... and before irrevocable decisions are made" (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel's exercise is predictive and it is not surprising that the statute specifically envisages the possibility of "follow up" programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.
>
> [emphasis added]

[190] It is the principle of adaptive management that, as the Federal Court of Appeal pointed out in *Parks and Wilderness Society*, above, is required to deal with the difficulties of predicting all of the consequences of a project on the basis of existing knowledge:

> [24] The concept of "adaptive management" responds to the difficulty, or impossibility, of predicting all the environmental consequences of a project on the basis of existing knowledge. It counters the potentially paralysing effects of the precautionary principle on otherwise socially and economically useful projects. The precautionary principle states that a project should not be undertaken if it may have serious adverse environmental consequences, even if it is not possible to prove with any degree of certainty that these consequences will in fact materialise. Adaptive management techniques and the precautionary principle are important tools for maintaining ecological integrity.

[191] In *Pembina Institute*, above, Justice Tremblay-Lamer of this Court followed Justice Hugesson in *Express Pipelines*, above, and emphasized the "ongoing and dynamic" nature of environmental assessment:

> [23] The adequacy and completeness of the evidence must be evaluated in light of the preliminary nature of a review panel's assessment. In *Express Pipelines, supra*, at para. 14, Hugessen J.A. discussed the predictive and preliminary nature of the panel's role:
>
> > The panel's view that the evidence before it was adequate to allow it to complete that function "as early as is practicable in the planning stages ... and before irrevocable decisions are made" (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel's exercise is predictive and it is not surprising that the statute specifically envisages the possibility of "follow up" programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.
>
> This view was echoed *in Inverhuron & District Ratepayers' Association v. Canada (Minister of the Environment)*, 2001 FCA 203, [2001] F.C.J. No. 1008 (QL), at para. 55, by Sexton J.A. Therefore, given the predictive function of an environmental assessment and the existence of follow-up mechanisms envisioned by the CEAA, the Panel's assessment of significance does not extend to the elimination of uncertainty surrounding project effects.
>
> [24] Similarly, it is evident that the assessment of environmental effects, including mitigation measures, is not to be conceptualized as a single, discrete event. Instructively, in *Union of Nova Scotia Indians v. Canada (Attorney General)*, [1997] 1 F.C. 325, [1996] F.C.J. No. 1373 (QL), Mackay J. indicated, at para. 32 that he was not persuaded that the CEAA requires that all the details of mitigating measures be resolved before the acceptance of a screening report. He further asserted that the nature of the process of assessment was "ongoing and dynamic" with continuing dialogue between the proponent, the responsible authorities and interested community groups.
>
> [emphasis added]

[192] Subsection 16(1)(d) of the CEAA mandates the Panel to consider

> measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project…

[193] Likewise, s. 16(2)(c) requires the Panel to consider

> the need for, and the requirements of, any follow-up program in respect of the project…

As the Panel notes at p. 40 of the EA Report, mitigation and follow-up are distinct concepts. Both are defined in s. 2(1) of the Act. Mitigation is about eliminating, reducing or controlling a project's adverse effects; follow-up is about verifying the accuracy of the EA, or the effectiveness of mitigation measures.

[194] Subsection 34(c)(i) requires the Panel, in its report, to deal with mitigation measures and follow-up programs.

[195] Under s. 16(1) and 16(2) of the CEAA, the Panel was obliged to undertake a "consideration" of the designated factors. The definition of "assessment by a review panel" in the Act also refers to a "consideration" of the factors to be considered under s. 16(1) and 16(2). The form and extent of any such consideration is not stipulated. However, the scheme of the Act suggests to me that an expert panel, such as the one established in this case, is required to use its expertise to gauge the extent and form of "consideration" required in each particular case in order to facilitate the purposes of the Act as set out in s. 4(1), which reads as follows:

Purposes	**Objet**
4. (1) The purposes of this Act are	4. (1) La présente loi a pour objet :
(a) to ensure that projects are considered in a careful and precautionary manner before federal authorities take action in connection with them, in order to ensure that such projects do not cause	a) de veiller à ce que les projets soient étudiés avec soin et prudence avant que les autorités fédérales prennent des mesures à leur égard, afin qu'ils n'entraînent pas d'effets
significant adverse environmental effects;	environnementaux négatifs importants;
(b) to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy;	b) d'inciter ces autorités à favoriser un développement durable propice à la salubrité de l'environnement et à la santé de l'économie;
[…]	[…]
(d) to ensure that there be opportunities for timely and meaningful public participation throughout the environmental assessment process.	d) de veiller à ce que le public ait la possibilité de participer de façon significative et en temps opportun au processus de l'évaluation environnementale

[196] In my view, these provisions make it obvious that the Panel in the present case was obliged to consider whether, in its expert opinion, the Project would, or would not, cause significant adverse environmental effects. In so doing, it was also obliged under s. 34 of the Act to, *inter alia*, prepare a report setting out

> the rationale, conclusions and recommendations of the panel relating to the environmental assessment of the project, including any mitigation measures and follow-up program…

[197] Once again, the form of the report, its rationale, conclusions and recommendations are left to the expert Panel to determine in accordance with the objectives of the CEAA.

[198] In attacking the EA Report as inadequate, the Applicants are to a considerable extent asking the Court to assess and reweigh the methodology and conclusions of an expert panel. This is not the role of the Court. It is true that s. 16(1) and (2) of the CEAA mandate the "consideration" of certain factors, but the way this is done and the weight to be ascribed to each factor is left to the expert Panel to be assessed in accordance with the purposes of the Act.

[199] Subsection 16(1) and (2) also compel the Panel to consider mitigation and the need for, and requirements of, any follow-up program. The Act does not say that the Panel itself is responsible for mitigation and follow-up and, as the purposes of the Act set out in s. 4 and the governing case law make clear, environmental protection is an ongoing, cooperative responsibility.

[200] Overall, then, it seems to me that what the Panel was obliged to do in this case was to assess the environmental impacts of a project that will extend many years into the future, and that will require the involvement and cooperation of different levels and agencies of government, and that will also require future mitigation and follow-up. This is a highly complex exercise and the Federal Court of Appeal has said that "given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved." See *Express Pipelines*, above, at para 14.

[201] In the present case, the Applicants take the view that the CEAA required the Panel to deliver considerably more finality and certainty than the Panel, in its expert opinion, felt the need to provide, given the nature of this Project. As the record shows, the Applicants and other interveners were able to bring before the Panel their strong objections to the Project and the Panel's approach to assessing its environmental impacts throughout the assessment process. The Panel did not accept the Applicants' criticisms of the PPE and bounding approach and the Applicants' assessment as to why such an approach would not produce a meaningful EA in accordance with the Act. Disagreement is not a ground for judicial review. Hence, provided the Panel acted in accordance with the CEAA and observed contextual rules of procedural fairness, the Court cannot interfere. In my view, then, many of the issues raised by the Applicants relate to the weighing and significance of the evidence and conclusions drawn from that evidence by the Panel. Justice Scott (as he then was) recently had occasion to emphasize that this kind of issue requires review on a standard of reasonableness in *Conseils des Innus de Ekuanitshit*, above:

> [69] In *Pembina Institute for Appropriate Development v Canada (Attorney General)*, 2008 FC 302 at para 37 [*Pembina*], Justice Tremblay-Lamer summarized the jurisprudence regarding the standard of review to be applied to decisions taken under section 16 of the CEAA:
>
> > All parties agree that to the extent that the issues posed involve the interpretation of the CEAA, as questions of law, they are reviewable on a standard of correctness (*Friends of West Country Assn. v. Canada (Minister of Fisheries and Oceans)*, [2000] F.C. 263, [1999] F.C.J. No. 1515 (QL), at para. 10; *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)*, 2001 CanLII 22029 (FCA), [2001] 2 F.C. 461, [2001] F.C.J. No. 18 (QL), at para. 55). However, issues relating to weighing the significance of the evidence and conclusions drawn from that evidence including the significance of an

> environmental effect are reviewed on the standard of reasonableness simpliciter (*Bow Valley*, cited above, at para. 55; *Inverhuron*, cited above, at paras. 39-40).
>
> [70] The issue in the present case is whether the JRP could, despite a lack of certain information, validly conclude that the Project's impact on the Applicant's use of the land for traditional purposes would be negative but not significant after mitigating matters are implemented. This is clearly a question dealing with 'weighing the significance of the evidence and conclusions drawn from that evidence including the significance of an environmental effect'. The standard of review on such a question is reasonableness (see *Pembina*, cited above, at para 37).
>
> [71] It is also worth noting that much more recently, in *Grand Riverkeeper, Labrador Inc v Canada (Attorney General)*, 2012 FC 1520 [*Grand Riverkeeper*], Justice Near re-assessed the standard of review applicable to the same question in light of the four factors described in *Dunsmuir v New Brunswick*, 2008 SCC 9, [2008] S.C.J. No. 9 [*Dunsmuir]*, namely (1) the existence of a privative clause; (2) the purpose of the tribunal as determined by interpreting the enabling legislation; (3) the expertise of the tribunal; and (4) the nature of the question at issue (*Dunsmuir*, above, at para 64). He also concluded that the standard of review on such questions is reasonableness (see *Grand Riverkeeper*, above, at para 40).

[202] As Justice Hugessen pointed out in *Express Pipelines*, above, at para 14, the "panel's view that the evidence before it was adequate to allow it to complete that function 'as early as is practicable in the planning stages…and before irrevocable decisions are made' (see section 11(1)) is one with which we will not lightly interfere."

[203] The Applicants assert reviewable error in this application in two principal ways. First of all, they say that the Panel's failure to assess or specify a reactor technology undermined its ability to properly evaluate the environmental effects of the Project and to otherwise fulfill its duties under the CEAA and the Terms of Reference. Secondly they say that the vague and

schematic nature of the Project led the Panel to unlawfully delegate its duties under the CEAA to other bodies.

[204] The Applicants say that the Panel's failure to discharge its CEAA duties in key areas is particularly evident in its handling of specific reactor technology, specific site design layout, a specific water cooling option, a specific used nuclear fuel storage option, and a long-term radioactive waste management option.

[205] The Applicants argue (at paragraph 58 of their Memorandum) that:

> In failing to gather necessary information about the environmental effects of the Project, the [Panel] failed to discharge its duties under subsections 34(a) and (b) of the CEAA to gather, disclose, and hold public hearings on information required by subsections 16(1) and (2) and the [Panel] Terms of Reference. This non-delegable duty falls upon the [Panel] itself, and does not depend upon the success or failure of the proponent, public agencies or interveners in producing information at the public hearing. Moreover, it is impossible to have a meaningful public hearing on a "project" that lacks specificity or where fundamental information is absent. Thus, it is not sufficient for the purposes of subsections 34(a) and (b) for the [Panel] to identify missing information, but then simply recommend future studies, information-gathering, and analysis to fill these gaps after the EA process has concluded. By establishing the "stringent" review panel process, Parliament clearly intended that such steps take place, and be fully subject to public involvement, as part of the EA process itself.

[206] When I examine each of these important areas in the EA Report, it seems to me that they are addressed by the Panel, but not necessarily in the way that the Applicants feel they should have been addressed. The Applicants are advocating a particular approach to environmental assessment under the CEAA that would require of proponents much more in the way of specifics than OPG provided in this case. Whether or not that would be a better approach to environmental

assessment is not the issue before me. The issue is whether the scheme of the Act, and the guidance in the jurisprudence, required the Panel to go further than it did in this case.

[207] The Panel makes clear in its conclusions that

> the Project is not likely to cause significant adverse environmental effects, provided the mitigation measures proposed and commitments made by OPG during the review and the Panel's recommendations are implemented.
>
> (EA Report at p. 143)

[208] In other words, the Panel's general conclusion is contingent upon mitigation and the future fulfilment of commitments. The safety and environmental impacts of the Project are dependent upon what OPG and other agencies do in the future as the Project evolves, and as OPG applies for the separate licences required for each successive phase. The Panel is rendering an opinion on environmental impact at a very early stage in life of this Project. The EA Report amounts to an opinion that, based upon present knowledge, and if appropriate measures are taken, then the Project is not likely to cause significant adverse environmental effects. Many will disagree but, as things presently stand, Parliament has decided that this is the range and function of an EA under the CEAA. The Panel must ensure that s.37 decision-makers have a sufficient evidentiary record upon which to base their decisions, and it can make recommendations for follow-up and mitigation to ensure that its conclusions continue to hold. However, it is not required and has no jurisdiction to monitor those recommendations and ensure that commitments and expectations are met. That role must, by necessity, be left to other agencies and responsible authorities.

[209] In essence, the Applicants are saying that the information available to the Panel in this case was not specific enough to even make contingent predictions about the environmental effects of this Project. In my view, however, apart from those instances that I set out below, I cannot say that the Panel's approach was, given the nature of this Project and the full context in which the EA Report was produced, not in accordance with the requirements of the Act or that it was unreasonable. Section 34(1) of the Act specifically directs the Panel to set out any mitigation measures and follow-up program which it feels are required. Such mitigation measures and follow-up must, inevitably, be assessed, executed and monitored by others in the future.

[210] As Justice Tremblay-Lamer pointed out in *Pembina Institute*, above,

> [34] In sum, the CEAA represents a sophisticated legislative system for addressing the uncertainty surrounding environmental effects. To this end, it mandates early assessment of adverse environmental consequences as well as mitigation measures, coupled with the flexibility of follow-up processes capable of adapting to new information and changed circumstances. The dynamic and fluid nature of the process means that perfect certainty regarding environmental effects is not required.

[211] As the AGC points out in this application, the full regulatory context in which this decision was made by the Panel includes the subsequent permitting and licensing processes that will, in their turn, assess and manage certain Project effects. See, in this regard, *West Vancouver*, above, at para 104; and *Inter-Church Uranium Committee*, above, at paras 47 and 49. As discussed below in relation to these cases, this does not relieve the Panel of the responsibility of assessing the Project's effects; it is simply an acknowledgment that the process of assessing and managing those effects does not end with the completion of the EA.

[212] In *Inter-Church Uranium Committee*, above, the Federal Court of Appeal provided the following guidance on point:

> [47] That does not mean that the end of the work of the Panel means an end to all environmental review for the McClean Lake Project. Environmental issues must be considered for each licence issued under the Uranium and Thorium Mining Regulations and their successor, the Uranium Mines and Mills Regulations. In addition, the CEAA environmental screening and assessment process may be triggered in future if subsection 74(3) of the CEAA applies. That would be the case if, for example, there is a proposal to undertake some activity relating to the McClean Lake Project that was not within the Panel's terms of reference (such as the increase in production proposed and permitted by the Commission in 2001, which had not been considered by the Panel established under the Guidelines).
>
> […]
>
> [49] …The Panel recognized that changes in science and technology would occur over the life of the Project and acknowledged that it would be the Board's responsibility to evaluate the effects of these developments in the context of its licensing responsibilities.

[213] This approach is also consistent with *Pembina Institute*, above, where Justice Tremblay-Lamer, following Justice Mackay in *Union of Nova Scotia Indians*, above, pointed out that the assessment of environmental effects, including mitigation measures, is not to be conceptualized as a single, discrete event, but is ongoing and dynamic "with continuing dialogue between the proponent, the responsible authorities and interested community groups."

[214] The Applicants are correct to point out that the Panel is not a "responsible authority," but s. 34(c)(i) of the Act clearly requires the Panel to address mitigation measures and follow-up programs which, inevitably, will be part of an ongoing process involving, among others, responsible authorities and regulatory agencies. This does not relieve the Panel from compliance

with ss. 34, and 16(1) and (2) of the Act; it simply means that the full context has to be considered in accordance with the purposes of the Act set out in s. 4. The Panel explains its cautionary approach to assessing environmental effects in the EA Report and makes it clear that "adaptive management" should not be used as a substitute for scientific data:

> 4.1.1 The Precautionary Approach
>
> OPG described how it applied the precautionary principle in the preparation of the EIS, as required by the EIS Guidelines and based on the Canadian Privy Council Office document A Framework for the Application of Precaution in Science-based Decision Making About Risk (Government of Canada, 2003). OPG stated that it considered this principle in the design of the Project and in its assessment of environmental effects.
>
> The Panel notes that the application of the precautionary principle according to the Canadian Privy Council Office framework is not necessarily in line with the wishes of some of the participants in the review and that different interpretations of the concept were put forward.
>
> One of the purposes of the Canadian Environmental Assessment Act is to ensure that projects are considered in a careful and precautionary manner so that they do not cause significant adverse environmental effects. In the administration of the Act, the Government of Canada, the Minister of the Environment, the Canadian Environmental Assessment Agency and all federal and responsible authorities are required to exercise their powers in a manner that protects the environment and human health and that applies the precautionary principle. The Panel notes that the Canadian Privy Council Office framework was issued to improve the predictability, credibility and consistency of the federal government's application of precaution to ensure adequate, reasonable and cost-effective decisions.
>
> The framework outlines five guiding principles for the application of precaution to science-based decision making in areas of federal regulatory activity for the protection of health and safety and the environment and the conservation of natural resources. They are:
>
> 1. The application of precaution is a legitimate and distinctive decision-making approach within risk management;

2. It is legitimate that decisions be guided by society's chosen level of protection against risk;

3. Sound scientific information and its evaluation must be the basis for applying precautions; the scientific information base and responsibility for producing it may shift as knowledge evolves;

4. Mechanisms should exist for re-evaluating the basis for decision and for providing a transparent process for further consideration; and

5. A high degree of transparency, clear accountability and meaningful public involvement are appropriate.

The Panel agrees with these guiding principles for the application of science-based decision making but highlights the importance of defining the affected society when considering the concept of society's level of tolerance for risk. The Panel notes that people in Durham Region are the group with the highest potential to be affected by the Project but, in general, are also more accepting of the risks of or potential for environmental effects. Neighbouring populations around Lake Ontario, including the Greater Toronto Area, could also be affected by the Project, but, anecdotally have less tolerance for project-associated risks.

The framework also outlines the five following principles for precautionary measures:

1. Precautionary measures should be subject to reconsideration on the basis of the evolution of science, technology and society's chosen level of protection;

2. Precautionary measures should be proportional to the potential severity of the risk being addressed and to society's chosen level of protection;

3. Precautionary measures should be non-discriminatory and consistent with measures taken in similar circumstances;

4. Precautionary measures should be cost-effective, with the goal of generating (i) an overall net benefit for society at least cost, and (ii) efficiency in the choice of measures; and

5. Where more than one option reasonably meets the above characteristics, then the least trade-restrictive measure would be applied.

In consideration of the Project and the five principles for precautionary measures, the Panel notes that for principle 2, the required measures could be extensive if proportional to the severity of the risk. Furthermore, where there are threats of serious or irreversible damage, the Panel is of the view that the federal government should be proactive and not wait for scientific certainty or occurrence of an incident to take action, as for instance with a severe nuclear accident or events resulting from climate change. Because of the potential for high magnitude effects as a result of nuclear projects, the Panel believes that the precautionary principle should be applied to prevent environmental degradation and protect citizens in the context of society's chosen level of protection.

With respect to principles 3 and 5, the Panel acknowledges that the nuclear industry is continually adjusting to new circumstances. Security systems and environmental protection measures have to evolve with each malfunction or accident. The Panel is of the view that the protection of citizens and physical environmental components may require the development of new or improved measures that do not necessarily have similar circumstances, or are least-trade restrictive.

In considering principle 4, the Panel emphasizes that while cost is a consideration, safety and security must always take precedence.

The Panel therefore underlines the need to identify and recommend measures beyond existing standards and practices, when appropriate, to protect the public and the environment.

[…]

4.1.3 Assessment of Environmental Effects

The first major task of the Panel was to review the proponent's assessment of the environmental effects of the Project. The Panel found that the assessment of potential environmental effects was qualitative in many respects because it was conducted without specific knowledge of potential releases. OPG explained that certain parameters of the bounding scenario, such as hazardous substance emissions and on-site chemical inventories, could not be developed until a specific reactor technology has been selected by

the Government of Ontario. Where information specific to the chosen reactor technology is required, the Panel recommends that certain actions be taken before the Project can proceed.

The Panel is responsible for determining the likelihood that the Project will cause significant adverse environmental effects, taking into account the implementation of any mitigation measures that it considers appropriate. In this matter, the Panel followed the Canadian Environmental Assessment Agency reference guide entitled *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects* (November 1994).

The Panel first determined whether an environmental effect would be adverse by comparing the quality of the existing environment with the predicted quality once the Project is in place. When an effect was determined to be adverse, the Panel proceeded to determine its significance. In this regard, the Panel considered the magnitude, geographic extent, duration and frequency, reversibility, and ecological context, as applicable, of the effect. Finally, the Panel determined whether the significant adverse effect is likely to occur. Two criteria are considered when determining the likelihood: the probability of occurrence and scientific uncertainty, which is often referred to as confidence limits.

Contrary to the 1994 guide, OPG included likelihood as a parameter in the assessment of significance. To ensure that the application of mitigation measures or follow-up programs is carefully considered, the Panel believes that the significance of an effect should be determined before assessing its likelihood. For instance, to ensure that mitigation is developed for a severe nuclear accident, the significance of the effects of the accident should be determined before concluding that its likelihood is so remote that its effects are not significant. The Panel believes that a prudent approach should be taken in this situation to identify appropriate mitigation measures despite the remote likelihood of occurrence.

The Panel considered technically and economically feasible measures to mitigate any significant adverse environmental effects of the Project and alternative means to undertaking the Project. OPG provided a number of mitigation measures and plans, and indicated that details would be forthcoming at later stages of the Project, such as following the Government of Ontario selection of a reactor technology.

> To address the absence of detailed mitigation plans, CNSC staff have recommended to the Panel that a condition of the Licence to Prepare Site be that OPG shall have the requisite plans accepted by the Canadian Nuclear Safety Commission or CNSC staff prior to commencing applicable licensed activities. The Panel accepts this recommendation and adds that the monitoring program and compensation plans should be treated in the same manner.
>
> Finally, the Panel notes the distinction between monitoring and follow-up programs, as well as between mitigation measures and compensation plans. The Panel regards monitoring to be observation and the acquisition of knowledge, whereas follow-up is specifically developed to confirm predictions from the environmental assessment and the effectiveness of mitigation. The Panel is of the view that adaptive management, a systematic process for the continuous improvement of environmental management practices, should only be applied in cases where thresholds can be defined. Adaptive management should not be used to overcome a situation where there is a lack of scientific data or certainty.
>
> [emphasis added]

[215] Notwithstanding the Applicants' understandable concerns about a project of this size and duration, and their views and able arguments about what the Panel should have done, apart from the specific instances referred to below, I can find no evidence to suggest that the Panel did not follow these guiding principles to reach a science-based decision that the s. 37 decision-makers could rely upon, or that it substituted adaptive management for scientific data or certainty.

Evidence put forward by the Applicants

[216] The evidence put forward by the Applicants before me relates primarily to information gaps before the Panel. The alleged gaps and deficiencies are set out most comprehensively in the affidavit of Kathleen Cooper, a Senior Researcher at CELA (Applicant's Record, Vol 4, Tab 4) at paras 104-130 [Cooper affidavit]. Ms. Cooper alleges that the EA Report itself identified the

following gaps (with references to the EA Report), renumbered and condensed here for convenience:

1. No specific reactor technology has been selected (pp. 45-46)
2. No specific method or location (i.e. on-site, off-site or lake infill) for managing excavated soil or rock has been selected (p. 46)
3. No specific condenser technology has been selected (p. 48-49)
4. OPG's assessment of condenser cooling systems "did not provide a definitive comparison of alternative options with respect to environmental effects" (p. 49)
5. No specific site layout design has been selected, although three "conceptualized" scenarios were presented by OPG (pp. 12, 13, 49)
6. The assessment of potential environmental effects "was conducted without specific knowledge of potential releases" from the Project because a reactor technology has not been selected (p. 39)
7. Certain "parameters of the bounding scenario, such as hazardous substance emissions and on-site chemical inventories, could not be developed until a specific reactor technology has been selected" (p. 39)
8. There was an "absence of detailed mitigation plans" because a specific reactor technology had not been selected (p. 39)
9. Only a "conceptual" decommissioning plan was presented in the EIS (pp.51-53)
10. OPG did not provide a detailed monitoring program or compensation plan in relation to potential environmental effects (pp. 39-40)
11. OPG did not present a follow-up program, adaptive management program, or action plan in relation to certain air contaminants of concern (pp. 59-60)
12. OPG's description of baseline geological conditions "is based on an investigation that appears to be limited in scope" (p. 63)
13. OPG acknowledged that radiological and non-radiological contaminants from the Project would enter the aquatic environment, but did not specify any release points for discharges into Lake Ontario, provide baseline data for water quality and sediment, or complete "an assessment of bounding scenarios for conventional liquid effluents". It also provided "little information about the pollutants and contaminant loadings that would enter the surface water from stormwater runoff" (pp. 64-65)

14. OPG did not undertake a detailed assessment of ingress or transport of groundwater contaminants due to on-site activities, or the cumulative effects of quarrying activities or dewatering on nearby lands (pp. 66-67)

15. OPG "did not provide a thorough examination of potential site layout options" (p. 73)

16. OPG did not present a follow-up program to verify environmental assessment predictions or assess the effectiveness of mitigation measures in relation to birds, mammals, insects, amphibians, reptiles, or landscape connectivity (pp. 68, 75, 78)

17. OPG did not present a management plan for the several species at risk known to occur at the Project site (pp. 75-77)

18. OPG did not provide specific details on the types or amounts of chemicals to be stored or used at the site, and cannot do so until a reactor technology is selected (p. 78)

19. Only a "limited amount" of fish data and sampling information was available, and more studies are needed to understand the effects of shoreline alteration (pp. 80-81)

20. OPG's "assessment of effects of geotechnical and seismic hazards [was] based on limited baseline information" (p. 86)

21. OPG's climate change assessment "was based on very general projections that are not specific to the Project" (p. 88)

22. OPG did not present a contingency plan for all Project phases to account for flooding or other extreme weather events (p. 89)

23. No specific on-site facility (or location) for interim or long-term storage of used nuclear fuel or low and intermediate level radioactive waste has been selected (pp. 116-118)

24. OPG did not present a detailed analysis of the offsite health and environmental effects of a severe reactor accident since no reactor technology had been selected (pp. 124-125)

25. OPG did not present a cumulative effects analysis in relation to "common cause" severe accidents affecting multiple reactors at the Darlington site (p. 133)

[217] Some of these alleged information gaps are linked to the fact that technology and design choices for the Project had not yet been made, and some are not.

[218] In addition to these alleged gaps, the Cooper affidavit notes the following with respect to the EA Report's findings with respect to the Project's environmental effects:

1. The Project's cumulative effect upon the aquatic environment "would be significant and likely to occur" unless "appropriate" mitigation measures are put in place (p. 131)

2. There may be a cumulative effect upon regional air quality from several sources in the vicinity of the Project (p. 132)

3. The radioactive waste generated by the Project could result in significant cumulative effects "related to doses to workers, the public and the environment if it is not properly managed should it remain permanently on site" (p. 132)

4. Despite OPG's proposed mitigation measures and compensation plans, "there may still be a risk of losing biodiversity" (p. 134)

5. There will be a change to "surface water quality in Lake Ontario in relation to tritium due to the increase in tritium releases from the Project" (p. 135)

6. The Project's effects on the round whitefish "may be greater than were originally predicted by OPG" (p. 135)

[219] Other affidavits filed by the Applicants identify similar concerns (see Affidavit of Mark Mattson, President of Lake Ontario Waterkeeper, Applicant's Record, Vol. 6, Tab 5 at paras 101-103 [Mattson affidavit]; Affidavit of Shawn-Patrick Stensil, Energy Analyst and Campaigner for Greenpeace Canada, Applicant's Record, Vol.1, Tab 3 at paras 78-81 [Stensil affidavit]; Affidavit of Brennain Lloyd, Project Coordinator with Northwatch, Applicant's Record, Vol. 7, Tab 6 at paras 30, 33, 36-37 [Lloyd Affidavit]).

[220] The Mattson affidavit covers many of the same concerns identified in the Cooper affidavit, and also says that:

- The available cooling options have vastly different potential impacts on fish and fish habitat, and technologies to reduce fish impacts could not be specifically considered during the hearing because of the lack of a detailed plant design (para 101 d. and e.)

- The Panel did not require OPG to conduct or assess a "bounding scenario" for the release of hazardous substances or conventional liquid effluents from the Project and what impacts would result, and therefore there is no information on the record regarding the

> pollution that may be released from the project to the air, soil, groundwater, and Lake Ontario (para 101 h.)

[221] In terms of evidence to show that these information gaps made the EA non-compliant with the CEAA or the Panel's findings unreasonable, the Applicants have placed a particular emphasis on the management of radioactive waste, as discussed below.

[222] The Applicants' central criticism of the EA Report is that it contains many information gaps as a result of the use of the bounding scenario or PPE approach and the fact that a reactor technology and a cooling option have not yet been chosen. Thus, an important question before me is whether such information gaps make the EA Report non-compliant with the CEAA.

[223] In my view, in order to substantiate an argument that the EA failed to comply with the CEAA, it is necessary to go beyond identifying information gaps. There is no limit to the amount of information that could be gathered, and thus "full" or perfect information about a project or its effects will never be achieved.

[224] The Applicants' central point is that too much remains unknown about this Project for a proper EA to have been conducted. Read as a whole, the EA Report reveals that the Panel dealt with uncertainty in several different ways.

[225] In some cases the Panel called for further study of potential effects and how to mitigate them, despite the fact that these effects were not expected to rise to the level of significance. In

my view, this reflects the principle of precaution and the function of environmental assessment as an information gathering and planning tool.

[226] More controversially, in several instances the Panel found that despite information gaps, it was reasonable to conclude that the effects of the Project would not rise to the level of significance, or could be mitigated so as to fall below the level of significance. In doing so, the Panel appears to rely upon:

- bounding scenarios that assess or estimate the Project's maximum expected effects across all technology options and design choices;
- information about options for managing or mitigating the effects in question, including existing practices in the nuclear industry; and
- an assessment that existing regulatory regimes will adequately manage the Project's effects, or that the Project will not be permitted to proceed through subsequent licensing stages unless adverse environmental impacts are appropriately managed and mitigated.

[227] All of these are seen as problematic by the Applicants, to varying degrees. The latter in particular is singled out for criticism as a form of impermissible delegation of the Panel's duties under the Act.

[228] A careful reading of the EA Report shows that, despite some information gaps about which the Applicant's have expressed understandable concerns, the Panel had sufficient information to conduct, and did conduct, an EA that provided the s. 37 decision-makers with a proper evidentiary foundation for the decisions they were required to make. That is, the Panel enabled those decision-makers to make reasonable and science-based decisions, despite some continuing uncertainties that will have to be managed over time. However, three aspects of the EA Report appear to me to be

problematic and to require further re-assessment by the Panel or a duly constituted alternative panel. They are:

- The alleged failure of the Panel to insist on a bounding scenario analysis for hazardous substance emissions, in particular liquid effluent and stormwater runoff to the surface water environment, and for the sources, types and quantities of non-radioactive wastes to be generated by the project;
- The Panel's treatment of the issue of radioactive waste management; and
- The Panel's conclusion that an analysis of the effects of a severe common cause accident at the facility was not required at this stage, but should be carried out prior to construction.

Links to the issue of improper delegation

[229] Because the Panel dealt with several uncertainties by recommending future study and analysis, or by taking into account future licensing steps, the issue of whether the Panel's conclusions regarding significant adverse effects were reasonable is closely tied to the question of whether the Panel improperly delegated its duties in some instances.

[230] In assessing this argument, I think it is important to be mindful of the structure of the decision-making process Parliament put in place through the CEAA. The Applicants say – unchallenged by the Respondent – that while there will be further licensing steps for the Project that will consider environmental impacts, this EA is likely to be the only environmental assessment of the Project that will occur under the CEAA or its successor legislation. They argued both before the Panel and before the Court that, while further steps may involve opportunities for public participation and consideration of environmental impacts, the licensing process differs from an EA in important respects (see for example the Mattson affidavit at paras

58, 65-66). In their view, this difference is not merely one of timing, but involves the very nature of the process within which environmental effects are considered.

[231] I see merit in this submission. CNSC licensing decisions differ from EAs in terms of the legislative framework being applied and the identity of the decision-maker, and this may have implications for how environmental considerations are evaluated.

[232] Under the CEAA, the ultimate decision-maker for projects referred to review panels is the Governor in Council (in practical terms, the federal Cabinet), which decides whether the responsible authorities will be permitted to take steps to enable the project to move forward. Parliament chose to allocate this decision to elected officials who are accountable to Parliament itself and, ultimately, to the electorate.

[233] Future licensing steps for the Project involve decisions that will be made by the CNSC (as well as DFO and others). The CNSC is a specialized body with extensive technical expertise at its disposal, and will be required to assure itself at several stages of the Project that OPG will make adequate provision for the protection of the environment and human health (NSCA, s. 24(4)). However, the EA under review here represents the only occasion when democratically elected and accountable federal decision-makers will directly make a decision on whether the Project should proceed.

[234] In my view, Parliament's intention in allocating certain roles and decisions to expert bodies, and others to democratic bodies such as the federal Cabinet, must be considered and respected.

[235] The most important role for a review panel is to provide an evidentiary basis for decisions that must be taken by Cabinet and responsible authorities. The jurisprudence establishes that gathering, disclosing, and holding hearings to assemble and assess this evidentiary foundation is an independent duty of a review panel, and failure to discharge it undermines the ability of the Cabinet and responsible authorities to discharge their own duties under the Act.

[236] In *Pembina Institute*, above, Justice Tremblay-Lamer discussed the interconnection between the role of a review panel, which is charged with conducting a fact-based assessment, and that of political decision-makers, who are "mandated to take into account the wider public policy factors in granting project approval":

> [14] The CEAA establishes a two-step decision-making process. The first step is an environmental assessment where potentially adverse environmental effects of a project are analysed (s. 5). The second step involves decision-making and follow-up where a federal authority decides, taking into consideration that assessment, if a particular project should be authorized and what follow-up measures, if any, are required to verify the accuracy of the assessment and the effectiveness of mitigation measures (ss. 37 and 38).
>
> […]
>
> [20] Specifically, the general duties that a review panel is mandated to fulfill are four-fold (s. 34). First, it must ensure that the information required for an assessment is obtained and made available to the public (s. 34(a)). Second, the panel is required to

hold hearings in a manner that offers the public an opportunity to participate in the assessment (s. 34(b)). Third, the panel is charged with fulfilling a reporting function whereby it must prepare a report setting out "the rationale, conclusions and recommendations of the panel relating to the environmental assessment of the project, including any mitigation measures and follow-up program" as well as a summary of public comments received (s. 34(c)). Finally, it must submit that report to the Minister and the responsible authority (s. 34(d)).

[…]

[72] While I agree that the Panel is not to engage in policy recommendation, nevertheless, it is tasked with conducting a science and fact-based assessment of the potential adverse environmental effects of a proposed project. In the absence of this fact-based approach, the political determinations made by final decision-makers are left to occur in a vacuum.

[73] I recognize that placing an administrative burden on the Panel to provide an in-depth explanation of the scientific data for all of its conclusions and recommendations would be disproportionately high. However, given that the Report is to serve as an objective basis for a final decision, the Panel must, in my opinion, explain in a general way why the potential environmental effects, either with or without the implementation of mitigation measures, will be insignificant.

[74] Should the Panel determine that the proposed mitigation measures are incapable of reducing the potential adverse environmental effects of a project to insignificance, it has a duty to say so as well. The assessment of the environmental effects of a project and of the proposed mitigation measures occur outside the realm of government policy debate, which by its very nature must take into account a wide array of viewpoints and additional factors that are necessarily excluded by the Panel's focus on project related environmental impacts. In contrast, the responsible authority is authorized, pursuant to s. 37(1)(a)(ii), to permit the project to be carried out in whole or in part even where the project is likely to cause significant adverse environmental effects if those effects "can be justified in the circumstances". Therefore, it is the final decision-maker that is mandated to take into account the wider public policy factors in granting project approval.

[emphasis added]

[237] In short, Parliament has designed a decision-making process under the CEAA that is, when it functions properly, both evidence-based and democratically accountable. The CNSC, in considering future licensing decisions, will be in a fundamentally different position from the Panel that has conducted the EA. The CNSC will be the final authority making the decision, not merely an expert panel. Although the CNSC approaches this role with considerable expertise, it does not have the same democratic legitimacy and responsibility as the federal Cabinet.

[238] This distinction is particularly relevant, in my view, where issues require reference not simply to scientific evidence, but to societal values and associated public policy choices. For example, the document intended to provide federal decision-makers with guidance on how to apply the precautionary principle set out in s. 4(2) of the CEAA makes repeated reference to the need to consider and make decisions in light of "society's chosen level of protection against risk" (see Privy Council Office, A Framework for the Application of Precaution in Science-based Decision Making About Risk (Government of Canada, 2003)). This is conspicuously the type of consideration that elected representatives, rather than expert bodies, seem well-placed to evaluate.

[239] Choices by the Panel that could diminish the Cabinet's ability to consider and decide such matters, deferring them instead for consideration at a future date by an expert body, could signal a departure from Parliament's intention regarding the structure of decision-making under the CEAA. The issue is not timing so much as Parliament's intention as to who should decide what.

[240] In some cases, what is left for the future will be verification that actual performance will conform to the accepted standard of environmental or health protection (see EA Report at p. 45). If this were the only purpose of environmental assessment, presumably it could be left entirely to expert bodies. However, when it is the appropriate standard itself that is at issue, or no standards exist, such an approach can become problematic.

[241] This does not mean that future regulatory processes have no role to play in managing and mitigating a project's environmental effects, or that they should not factor into a review panel's analysis. Several examples in the present case illustrate this point and are discussed later in these reasons.

[242] The key substantive point with respect to the decision-making structure of the CEAA is, in my view, that it is the role of s. 37 decision-makers to decide what is an acceptable level of environmental impact or risk. This decision-making component of the Act is not its *only* important feature, but the language of s. 37, the structure of the Act, and more than two decades' experience with its implementation make it undeniable that it is *an* important feature (see *Pembina Institute*, above, at para 15 applying *Oldman River*, above, at para 103). We cannot simply read it out of the Act, and the courts and those charged with its implementation must seek to maintain the integrity of the decision-making structure that Parliament has put in place.

[243] At the same time, one cannot ignore the reality that many projects are subject to regulation by specialized bodies with a public interest mandate that includes managing and controlling the project's environmental and health impacts. Indeed, over the life of a project such

as the one under consideration here, these other bodies may well have the greatest effect in minimizing a project's adverse effects if it does gain Cabinet approval. Determining when these processes are a reliable indicator that a project will not have significant adverse environmental effects is not a simple matter. It may be necessary to consider the nature of a regulatory regime itself, as regimes will vary widely in purpose and effect.

[244] As a broad principle, however, I think it is possible to say that in order to comply with its obligations under ss. 16 and 34 of the CEAA, the Panel's assessment should provide an analysis of the actual expected effects of the Project, or some established standard (or set of standards) to which the Project will be held through subsequent regulatory steps. The latter is something of a substitute for the former; after all, the CEAA requires the Panel to consider "the environmental effects of the project" and their significance. Where neither of these components is present, and there is evidence that an effect may be significant, it is difficult to see how the Panel's report can properly inform the future decisions that must be made.

[245] In the present case, the PPE approach purports to deal with this issue by setting a boundary; if it becomes clear later on that the Project will not conform to the boundary in some important respect, a new EA may be required. In the current context, both the EA Report and the Government Response state, and the parties appear to agree, that the CNSC must assure itself prior to each new licence being issued that the EA conducted on the Project still applies. The problem with any significant gaps in the PPE is that they will compromise the integrity of this rationale.

[246] The rationale underlying the bounding scenario or PPE approach is that it gives a comprehensive picture of the maximum adverse effects that are likely to result from the Project across a range of technology or design choices. The Panel accepted the PPE as a valid approach based on this rationale, while acknowledging that it is a departure from typical EA practices and posed some challenges for the Panel. In my view, there is nothing unreasonable about this conclusion on its face.

[247] However, having accepted this rationale and noted the associated challenges, I think it was incumbent on the Panel to ensure the methodology was fully carried out, or to explain why significant departures from it (that is, gaps in information about the bounding scenario) did not make the assessment non-compliant with the CEAA.

[248] No doubt, the reasons must be read as a whole, in keeping with the principles from *Newfoundland and Labrador Nurses' Union v Newfoundland and Labrador (Treasury Board)*, 2011 SCC 62, [2011] 3 SCR 708. That is, where the Panel does not explicitly state such an explanation, the EA Report read as a whole may make it plain why the Panel thought that gaps in the PPE were not fatal to its assessment. However, where such explanations are neither explicit nor clearly implicit in the Panel's analysis, this could indicate a reviewable error that requires further consideration.

[249] This is particularly so when one considers the challenges the PPE approach may pose for effective public participation. The less specific the information provided about the design features and specific impacts of a project, the more difficult it may be for interested parties to

challenge assumptions, test the scientific evidence, identify gaps in the analysis, and ensure their interests are fully considered (see EA Report at p. 32 regarding Environmental Assessment Transparency, and p. 33 regarding water quality and air quality).

Gaps in the bounding scenario regarding hazardous substance emissions and on-site chemical inventories

[250] The Applicants allege that there were gaps in the bounding scenario that were so significant that, in law, the Panel did not consider the environmental effects of the Project as required by s. 16 of the CEAA. They point to the following observations in the EA Report as evidence of this (emphasis added):

> …The Panel found that the assessment of potential environmental effects was qualitative in many respects because it was conducted without specific knowledge of potential releases. OPG explained that certain parameters of the bounding scenario, such as hazardous substance emissions and on-site chemical inventories, could not be developed until a specific reactor technology has been selected by the Government of Ontario. Where information specific to the chosen reactor technology is required, the Panel recommends that certain actions be taken before the Project can proceed.
>
> (EA Report at p. 39)
>
> In the absence of a choice of reactor technology for the Project, OPG did not undertake a detailed assessment of the effects of liquid effluent and stormwater runoff to the surface water environment. Instead, the proponent committed to managing liquid effluent releases in compliance with applicable regulatory requirements and to applying best management practices for stormwater. This strategy does not comply with the expectations given in the EIS Guidelines. Nevertheless, CNSC staff indicated that there is experience of similar regulatory release limits and management practices being applied at other nuclear facilities to control and minimize effects in the surface water environment.
>
> (EA Report at p. 65)

> In response to a Panel request for information on stored inventories of hazardous materials and sources, types and quantities of non-radioactive wastes predicted to be generated by the Project, OPG indicated that specific details regarding the chemicals to be stored and used on the site could not be provided before a reactor technology is selected for the Project. CNSC staff stated that the OPG response was conditionally acceptable based on its review of previous ecological risk assessments conducted at the site, an assessment of current practices for hazardous chemical management at the Darlington Nuclear Generating Station, and the need for a comprehensive assessment of hazardous releases.
>
> (EA Report at p. 78)

[251] Additional observations about gaps in the information provided due to the absence of technology decisions can be found at page 21 (OPG did not provide a bounding scenario for the release of hazardous substances for the Project), pages 12-14 (details of site layout and development could not be determined), page 15 (details regarding the manner in which the Project facility will be operated could not be determined) and page 45 (aspects of the PPE were based on preliminary design information that requires ongoing verification).

[252] On the other hand, the Respondents argue that:

- There was evidence before the Panel regarding liquid effluent and stormwater runoff and it was able to conduct the EA in this regard (Memorandum of CNSC at para 61). As evidence of this, the CNSC points to: CNSC Panel Member Document [PMD], 11-P1.2 (January 31, 2011) at pp. 45-51 (Respondent's Record (CNSC), Vol. 3, Tab BB); CNSC Commission Member Document [CMD], 11-P1.3 (January 31, 2011) at pp. 82-86 (Respondent's Record (CNSC), Vol. 3, Tab BB; and OPG's Environmental Impact Statement [EIS] at pp. 5-1 to 5-195 (Chapter 5) (Respondent's Record (OPG), Vols. 2 – 5, Tab 10); and

- OPG's responses provided sufficient evidence regarding the sources, types and quantities of non-radioactive waste to be generated by the Project to allow the Panel to conduct the EA in this regard (Memorandum of CNSC at para 62). As evidence of this, the CNSC points to the EA Report at p. 118 and OPG's response to Information Request #19 (Respondent's Record (OPG), Vol. 6, Tab 19).

The PMD and CMD cited by the Respondents are reports prepared by CNSC staff to assist the Panel in its deliberations. In my view, however, the cited portions are not particularly helpful with respect to liquid effluent and stormwater runoff.

[253] Chapter 5 of the EIS presents a detailed analysis of the likely environmental effects of the Project and possible mitigation measures. Section 5.3 relates to effects on the surface water environment. It notes at 5.3.2.3 that:

> The chemical constituents and their concentrations (which are proprietary and vendor/technology specific) in the various liquid effluent discharges from the plant, including the presence and type of water treatment systems for discharges, are currently not known in sufficient detail to conduct a water quality assessment for the individual parameters. However, dilution factors within Lake Ontario for the cooling water systems were calculated to support a screening level assessment.
>
> (EIS at p. 5-25)

[254] With respect to the sources, types and quantities of non-radioactive waste to be generated by the Project, Information Request #19 made the following request of OPG:

> Provide additional information for the chemicals that are in use at the existing Darlington Nuclear Generating Station as well as all likely chemicals to be used for the operational phase of the Project as well as any sources, release points, types and quantities of non-radioactive wastes, including hazardous waste, predicted to be generated.
>
> Provide a specific description of how the chemicals will be used and an assessment of their releases and potential effects on the environment (e.g. surface water quality, aquatic environment, atmospheric environment).

[255] OPG's response noted that a representative list of chemicals that would typically be stored and used at such a facility had been provided in a previously submitted technical document, but that

specific details on the type of chemicals to be stored and used could not be provided until a vendor was selected. OPG pointed to an example of expected chemical concentrations in liquid effluent streams for one of the technologies under consideration (the AP 1000 option), obtained from a licensing application in the United States. OPG then stated (Respondent's Record (OPG) at p. 1569):

> Regardless of the specific chemicals used … procedural controls will be in place to ensure their safe transport, storage and handling. Hazardous chemicals will be managed using the Workplace Hazardous Materials Information System (WHMIS) principles.
>
> The environmental effects of such chemicals and hazardous waste will be mitigated by the incorporation of Good Industry Management Practices into Project implementation. As the Project planning and design evolves, all Good Industry Management Practices (incorporating Good Utility Practices), will be integrated into a comprehensive and overarching Environmental Management Plan (EMP).
>
> The generation of non-radioactive wastes will be minimized to the extent practicable through re-use and recycling programs. All residual waste will be collected regularly by licensed contractors and transferred to appropriately licensed off-site disposal facilities. Hazardous wastes will be handled in accordance with applicable regulations.

[256] I have found it helpful to refer to the written submissions of Environment Canada (EC), one of the federal authorities listed as having expertise in relation to the Project, in understanding the process by which hazardous emissions from the project were assessed during the EA (see Submission of the Department of the Environment (Environment Canada), January 31, 2011, Applicant's Record, Vol. 5, Tab EE). EC is only one of the interested stakeholders that made submissions to the Panel, and the Panel was ultimately responsible for assessing the Project's expected environmental effects. Nevertheless, EC has relevant expertise that was relied upon by the

Panel, and has provided useful contextual information regarding how contaminants are expected to enter the environment and how they were considered in the course of the EA.

[257] With respect to liquid effluent, the EC submissions note (at pp. 25-26):

> Various contaminants, both conventional and radiological, are emitted in liquid effluents from nuclear power plants. Generally speaking, emissions will depend on the reactor technology, how it is operated, and the treatment that is undertaken prior to the effluent being released to the environment. Releases typically include heavy metals, organic chemicals, biocides, nutrients, grease, and radionuclides.
>
> […]
>
> Additionally, the Once-Through Cooling Water system can release heavy metals from the abrasion of pipes. Cooling Towers will release contaminants in effluent from the blowdown circuit.
>
> […]
>
> EC's review of the EIS identified that a bounding scenario for conventional contaminants was not provided by OPG. Based on EC advice, the JRP issued various Information Requests to request the characterization of process effluents including a bounding scenario for conventional contaminants, in order to understand what contaminants will be released, and the maximum quantities and maximum concentrations expected for these contaminants. OPG did provide an indication of the types of chemicals typically used at nuclear power plants, but did not provide a bounding scenario assessment in its responses to the Information Requests.
>
> Although EC acknowledges that some additional information had been provided in OPG's responses, the overall intent of the Information Requests had not been fully met (i.e. providing a sufficiently detailed bounding scenario that would allow potential effects to be assessed during the EA).
>
> OPG did provide some discussion about effluent quality anticipated based on a licence application submitted in the United States for the William States Lee III Generating Station. OPG did not discuss the effluent quality from the existing Darlington NGS, arguing that it was not relevant to the reactor technologies being considered for the

Project. However, the subsequent incorporation of the EC6 reactor technology into the EA process does now make the Darlington NGS data relevant, since the EC6 is similar to the CANDU design employed at the Darlington NGS.

Ultimately, OPG contends that the lack of a final reactor technology has prevented them from conducting the detailed evaluation of process effluent quality and the options for treatment, at this time. OPG's position has been that they can only provide information about conventional effluent quality after a vendor (i.e. a reactor technology) has been selected and detailed design is under development. This approach defers government and public review of process effluents until the CNSC's regulatory review for the consideration of a Licence to Construct under the Nuclear Safety and Control Act (NSCA).

Given this limitation, EC's approach was to look at information from the existing ambient conditions in the vicinity of the Project and attempt to identify any concerns that may have arisen as a result of operations at the Darlington NGS during the past two decades. EC considered the ambient water and sediment quality that exists in the vicinity of the Project and the Ecological Risk Assessment (ERA) that evaluated the risks posed by these existing conditions. The lack of a bounding scenario for conventional contaminants did not allow for a quantitative ERA for conventional contaminants based on the future scenario of combined emissions from the Project and the existing Darlington NGS.

[…]

OPG made various commitments, stating that all effluent that is released during the construction and operation of the nuclear facilities will comply with all legal requirements, including the requirements in section 36 of the Fisheries Act respecting the discharge of deleterious substances. OPG has committed to undertake treatment of all effluents, as necessary, to meet applicable quality standards before discharging effluent to the receiving environment.

From a conceptual standpoint, OPG's commitments would be environmentally acceptable since they are consistent with our expectations. However, given the lack of information available at this time on likely contaminant releases, it would be prudent to verify process effluent quality during the CNSC licensing phase.

[emphasis added]

[258] With respect to the emission of radionuclides through liquid effluent, EC took the view that (at p. 26):

> A bounding scenario was provided for radionuclides. This bounding scenario allowed for a quantitative ERA to be performed for radiological parameters based on the future scenario of combined emissions from the Project and the existing Darlington NGS.

[259] With respect to stormwater runoff, EC noted (at pp. 28-29):

> As was noted in EC's prior submissions to the JRP, data presented by OPG has shown that there have been some occurrences of acute toxicity in stormwater discharges at the existing Darlington NGS. This highlights the importance of a properly designed and operated stormwater management system.
>
> A variety of conventional and industry-specific contaminants will be entrained in stormwater at any industrial site. At a nuclear power plant, radionuclides can also be entrained in stormwater. Stormwater for the Project is expected to be contaminated with conventional parameters (e.g. metals, nutrients, etc.) and with radionuclides, particularly since a sizeable fraction of the radionuclides emitted are expected to be deposited on the Project site (based on monitoring data and atmospheric dispersion modelling).
>
> […]
>
> EC had requested additional information regarding the stormwater management plan for both the site preparation/construction phases and the operating phase. The JRP issued several Information Requests pertaining to stormwater management. Although EC acknowledges that some additional information had been provided in OPG's responses, the overall intent of the Information Requests had not been fully met (i.e. providing sufficiently detailed stormwater management plans that would allow potential effects to be assessed during the EA).
>
> From a conceptual standpoint, OPG responses to these Information Requests explained the type of measures they would undertake for stormwater management. OPG has also made commitments to implement Good Industry Management Practices, and to meet all applicable regulatory objectives and any loading limits that may be

> imposed. These conceptual measures and commitments are consistent with our expectations. However, OPG's response was not specific about which parameters they would focus on and the water quality objectives they would establish and design the facility to meet. Ideally, we would have liked OPG to provide a specific analysis based on historical stormwater quality at the Darlington NGS, the identification of any additional parameters of concern based on the reactor technologies being considered, and any other considerations arising from site layout options. For example, which radiological parameters does OPG intend to address, what are the water quality objectives for these radiological parameters, and what design options can be used to achieve this?
>
> Ultimately, the lack of a final reactor technology has prevented the evaluation of realistic facility layout options and a more detailed evaluation of stormwater management options. OPG's position has been that decisions regarding stormwater management will be made during detailed design phase of the Project. This approach defers government and public review of the detailed stormwater management plans until the CNSC's regulatory review for the consideration of a Licence to Construct under the Nuclear Safety and Control Act (NSCA). In the overall context of potential impacts from the Project, EC feels this approach is acceptable considering that the application of Best Management Practices (i.e. what OPG refers to as Good Industry Management Practices) and various mitigation measures (such as treatment) can be implemented to ensure the protection of water quality in waters that receive inputs of stormwater runoff.
>
> [emphasis added]

[260] EC also provided its assessment of the information provided by OPG regarding the release of contaminants into the air. With respect to conventional (i.e. non-radiological) hazardous air pollutants, EC observed that (at p. 41):

> OPG used a bounding approach for chemicals such as hydrazine, ammonia, acetic acid, etc., by prorating the existing Darlington NGS emissions based on a comparison of existing and future electrical generating capacity at the Darlington site. Although this provided a numerical basis for evaluating effects, the validity of these estimates could not be verified for the Project since detailed design was unavailable.

These issues are also addressed in the EA Report itself.

[261] In section 2.6, Management of Conventional and Hazardous Waste, the Panel identifies the main uses of hazardous chemicals during the operation and maintenance of the Project facility as water treatment, the boric acid system used for reactivity control in light water reactors, and the use of small quantities of hazardous chemicals in laboratories. The Panel notes OPG's commitment that hazardous chemicals would be managed using the WHMIS principles, and special precautions would be taken in relation to boric acid, which is highly corrosive to carbon steel. The Panel notes, as quoted above, that:

> OPG did not provide a bounding scenario for the release of hazardous substances for the proposed Project. OPG explained that it has no plan to do so until a reactor technology is selected for the site.

[262] In section 5.3, Surface Water Environment (under Effects Assessment of the Biophysical Environment), the Panel notes that the greatest potential surface water impact is to Lake Ontario, which is adjacent to the site. It notes that while surface water quality in Lake Ontario within the study area generally meets federal and provincial guidelines and objectives, there have been occasional exceedances due to inflows to the lake. OPG identified cadmium, copper, lead and selenium as contaminants of potential concern based on baseline sediment quality data which indicate that concentrations exceed regulatory criteria and background levels. OPG identified certain other substances (phosphorus, nitrates, conductivity, sodium, aluminium, boron, cobalt, iron and zirconium) as being present in on-site water bodies in elevated levels. OPG attributes the latter to the use of road-salt in the area, runoff from an existing landfill and applications of fertilizers by local farmers. OPG provided the following information about the Project's likely effects on surface water quality:

> OPG stated that a number of contaminants would enter the aquatic environment due to operation of the reactors. Releases of radiological contaminants would arise from the operation of the radioactive liquid waste management system. Thermal discharge and conventional contaminants would be released through the operation of the condenser circulating water, service water and cooling systems. OPG also stated that discharges of stormwater would also be expected to release chemical constituents particularly during the site preparation and construction phases. The proponent stated that the contaminants from these various systems would be managed with appropriate treatments to comply with regulatory requirements.
>
> OPG stated that over different phases of the Project, marine and shoreline construction work would affect water quality, alter currents and local surface water conditions, and affect the transport of sediments. Again, OPG proposed measures such as good industry management practices and sediment control to manage and limit adverse effects.
>
> […]
>
> OPG concluded that with the proposed mitigation measures, the Project would not result in significant adverse effects on the surface water environment.
>
> (EA Report at p. 64, emphasis added)

[263] The Panel noted a number of limitations on what could be analyzed based on the information provided by OPG, but ultimately determined that the combination of commitments by OPG, available mitigation options and regulatory controls meant that the Project would not have significant adverse environmental effects.

[264] With respect to the limitations, the Panel observed (EA Report at pp. 64-65):

> 5.3.2 Panel Assessment
>
> As a consequence of the bounding approach in the environmental assessment, specific site layout and points of release into Lake Ontario were not defined…

> […]
>
> The proponent did not complete an assessment of bounding scenarios for conventional liquid effluents with implementation of mitigation measures. The Panel notes that such an assessment would have enabled confirmation of the conclusions reached concerning possible environmental effects from liquid effluents.
>
> OPG provided little information on the pollutants and contaminant loadings that would enter the surface water environment with stormwater runoff…
>
> In the absence of a choice of reactor technology for the Project, OPG did not undertake a detailed assessment of the effects of liquid effluent and stormwater runoff to the surface water environment…

[265] With respect to OPG's commitments, controls and mitigation measures, the Panel observed (EA Report at p. 65):

> …[T]he proponent committed to designing stormwater management facilities in accordance with requirements in the *Ontario Stormwater Management Planning and Design Manual* (March 2003). This was supported by a commitment to develop a follow-up program where parameters to be measured and the frequency of sampling would be specified. Based on these commitments and additional information provided by the proponent, the Panel is of the view that adequate controls and mitigation measures would be in place to prevent significant adverse environmental effects in the surface water environment.

And:

> … [T]he proponent committed to managing liquid effluent releases in compliance with applicable regulatory requirements and to applying best management practices for stormwater. This strategy does not comply with the expectations given in the EIS Guidelines. Nevertheless, CNSC staff indicated that there is experience of similar regulatory release limits and management practices being applied at other nuclear facilities to control and minimize effects in the surface water environment.

[266] Based on this analysis, the Panel concluded as follows on this point (EA Report at p. 65):

> The Panel is of the view that the Project is not likely to result in significant adverse environmental effects, given the proposed mitigation measures and commitments made by the proponent, along with the following recommendations.

[267] The Panel then made several relevant recommendations, including:

> **Recommendation # 14:**
>
> The Panel recommends that following the selection of a reactor technology for the Project, the Canadian Nuclear Safety Commission require OPG to conduct a detailed assessment of predicted effluent releases from the Project. The assessment should include but not be limited to effluent quantity, concentration, points of release and a description of effluent treatment, including demonstration that the chosen option has been designed to achieve best available treatment technology and techniques economically achievable. The Canadian Nuclear Safety Commission shall also require OPG to conduct a risk assessment on the proposed residual releases to determine whether additional mitigation measures may be necessary.
>
> **Recommendation # 15:**
>
> The Panel recommends that following the start of operation of the reactors, the Canadian Nuclear Safety Commission require OPG to conduct monitoring of ambient water and sediment quality in the receiving waters to ensure that effects from effluent discharges are consistent with predictions made in the environmental impact statement and with those made during the detailed design phase.
>
> **Recommendation # 16:**
>
> The Panel recommends that prior to the start of construction, the Canadian Nuclear Safety Commission require the proponent to establish toxicity testing criteria and provide the test methodology and test frequency that will be used to confirm that stormwater discharges from the new nuclear site comply with requirements in the Fisheries Act.

[268] Recommendations 14 and 15 were accepted by the Government of Canada. The Government accepted the intention of Recommendation 16, while stating that it would also support such an approach for process effluents.

[269] The Panel also addressed potential effects relating to conventional hazardous substances in section 5.5, Terrestrial Environment. It reiterated the information set out above regarding OPG's inability to provide details regarding the chemicals to be stored and used on the site until a reactor technology is chosen. The Panel then noted the input of CNSC staff and Environment Canada (EA Report at p. 78):

> …CNSC staff stated that the OPG response was conditionally acceptable based on its review of previous ecological risk assessments conducted at the site, an assessment of current practices for hazardous chemical management at the Darlington Nuclear Generating Station, and the need for a comprehensive assessment of hazardous releases.
>
> Environment Canada summarized the requirements associated with the presence of hazardous substances within any facility in Canada. Under the *Canadian Environmental Protection Act* (S.C. 1999, c. 33), Environment Canada would evaluate if there are substances meeting certain quantity thresholds that would require a proponent to inform the public and prepare emergency plans. Depending on the situation, Environment Canada would evaluate substance dispersion, response strategy development, cleanup priorities, sampling and monitoring requirements. Environment Canada advised the Panel that ammonia and hydrazine would have to be evaluated after the reactor technology has been chosen.

[270] The Panel concluded that, provided the proposed mitigation measures and the Panel's recommendations were carried out, the Project was not likely to cause significant adverse environmental effects to the terrestrial environment, and made the following recommendation:

> **Recommendation # 26:**
>
> The Panel recommends that the Canadian Nuclear Safety Commission require OPG to develop a comprehensive assessment of hazardous substance releases and the required management practices for hazardous chemicals on site, in accordance with the Canadian Environmental Protection Act, once a reactor technology has been chosen.

[271] On the whole, then, in the absence of bounding scenarios representing the use, storage and release of hazardous substances from the Project, the Panel relies upon an assessment that various commitments, recommendations, and regulatory controls will ensure the Project does not have significant adverse effects on the terrestrial and surface water environments.

[272] This may well be a reasonable conclusion. The question, though, is whether it complies with the Panel's obligations to consider the Project's environmental effects and their significance (CEAA, s. 16(1)(a) and (b)), to ensure that the information required for an assessment is obtained and made available to the public (CEAA, s. 34(a)), to prepare a report setting out the rationale, conclusions and recommendations of the panel relating to the EA of the project (CEAA, s. 34(c)), and, as the jurisprudence and the scheme of the Act make clear, to ensure that those required to make decisions under s. 37 have a proper evidentiary foundation before them. To repeat what is stated above, because of its unique role in the statutory scheme, a review panel is required to do more than consider the evidence and reach a reasonable conclusion. It must provide sufficient analysis and justification to allow the s. 37 decision-makers to do the same, based on a broader range of scientific and public policy considerations. One could say that the element of "justification, transparency and intelligibility within the decision-making process" (*Dunsmuir*, above, at para 47; *Khosa*, above, at para 59) takes on a heightened importance in this context.

[273] In this case, there are references to commitments by OPG to comply with unspecified legal and regulatory requirements or applicable quality standards, and to apply good management practices. There are references to instruments that may or may not contain relevant standards or

thresholds based on the information before the Court (e.g. the *Ontario Stormwater Management Planning and Design Manual* (March 2003)). And there are references to thresholds or standards in statutory instruments (e.g. *Fisheries Act*, *Canadian Environmental Protection Act*) without specific information about how these are relevant to or will bound or control the Project's effects.

[274] It is notable that the Panel itself concluded that, with respect to liquid effluent releases, OPG's "strategy does not comply with the EIS Guidelines" (EA Report at p. 65), and that the Panel's "assessment of potential environmental effects was qualitative in many respects because it was conducted without specific knowledge of potential releases" (EA Report at p. 39). In the same vein are Environment Canada's observations that there was insufficient information to assess the potential effects of either liquid effluent or stormwater runoff from the Project during the EA. There is nothing in the EA Report to contradict these observations; rather, the Panel decides that, in spite of this, it is possible to conclude that the Project is not likely to have significant adverse effects based on proponent commitments, mitigation measures and regulatory controls.

[275] In essence, the Panel takes a short-cut by skipping over the assessment of effects, and proceeding directly to consider mitigation, which relates to their significance or their likelihood. This is contrary to the approach the Panel says it has adopted (see EA Report at p. 39), and makes it questionable whether the Panel has considered the Project's effects at all in this regard.

[276] In my view, such a short-cut might be permissible where there is a clear standard or threshold that can serve as a proxy for actual effects. In such a case, the s. 37 decision-makers can evaluate the standard or threshold as a measure of the "significance" of the potential effects, and can

evaluate the likelihood that the standard will be applied (e.g. is it enforceable, within their control, or routinely applied?) as a measure of the likelihood that adverse effects above the level of significance will occur. The present case offers several examples.

[277] For instance, participants in the Panel hearings noted that the Ontario Drinking Water Advisory Council has recommended that Ontario reduce its Drinking Water Quality Standard for tritium, a radioactive substance, to about one 350th of its current level (from 7,000 becquerels per Litre (Bq/L) to 20 Bq/L) (see EA report at p. 28). Some participants argued that the Project's effects should be evaluated in light of this more stringent standard. This is a question that, in my view, relates not just to scientific evidence, but to "society's chosen level of protection against risk." The Panel examined the evidence regarding exposure to tritium in drinking water, and recommended, based on a precautionary approach, that the CNSC "require OPG to implement measures to manage releases from the Project to avoid tritium in drinking water levels exceeding a running annual average of 20 Bequerels per litre at drinking water supply plants in the regional study area." The Government of Canada took a different view in its Cabinet-approved response. It accepted "the intent of this recommendation to safeguard drinking water," but stated that "any proposed limits should be consistent with the tritium standards put in place by the relevant regulatory authorities." Thus, deliberation regarding the appropriate threshold served as an appropriate proxy for the significance of the potential adverse effect, and CNSC regulation of this aspect of the Project serves as a proxy for "likelihood."

[278] Similarly, with respect to the transportation of radioactive materials, the Panel made reference to the relevant regulatory limits (a maximum dose rate on the surface of a package of two

millisieverts per hour on contact and 0.1 millisieverts at a distance of one meter), and made an explicit finding that:

> Based on the information provided by Transport Canada and CNSC staff, the Panel is of the view that the transportation of dangerous goods is sufficiently regulated under the Transportation of Dangerous Goods Act and the Packaging and Transport of Nuclear Substances Regulations under the Nuclear Safety and Control Act to protect the health and safety of persons and the environment. The Panel therefore concludes that the transportation of dangerous goods is not likely to result in significant adverse environmental effects.
>
> (EA Report at p. 116)

[279] In other cases, an analysis of potential effects was conducted based on preliminary or baseline data that must be verified or augmented through further study or analysis (see for example section 5.9.1 Geotechnical and Seismic Hazards and Effects and various recommendations regarding the project's effects on fish and fish habitat). This is the purpose of follow-up programs as defined in s. 2(1), but as noted elsewhere in this judgment, such programs are not to be used where no baselines or thresholds exist.

[280] It seems to me that a conceptual distinction can be drawn between situations where the Panel concludes, despite a degree of uncertainty, that significant adverse environmental effects are unlikely to occur based upon:

(a) Reliance upon an established standard or practice and the likelihood that the relevant regulatory structures will ensure compliance with it; or

(b) Confidence in the ability of regulatory structures to manage the effects of the Project over time.

[281] The problem with the latter approach is that it may undermine Parliament's intention with respect to who decides the level of acceptable environmental impact from a project. That is, it may short-circuit the two-stage process whereby an expert body evaluates the evidence regarding a project's likely effects, and political decision-makers evaluate whether that level of impact is acceptable in light of policy considerations, including "society's chosen level of protection against risk."

[282] This does not rule out the possibility that a more "qualitative" assessment of effects and their significance may be appropriate in some cases. Some effects may be difficult to quantify even where reliable information is available. However, there is nothing in the EA Report that suggests a qualitative assessment of the effects of hazardous substance releases. Rather, it seems to me that what the Report reflects is a qualitative assessment of the mitigation measures that are available to manage and control those effects. In this respect, it does not fully comply with the requirements of the CEAA.

Consideration of spent nuclear fuel

[283] The Applicants argue in their memorandum that:

> 53. Although used nuclear fuel will require long-term storage and monitoring for thousands of years as a hazardous substance, the [Panel] failed to conduct an assessment of the effects of radioactive waste management before making a conclusion regarding the significance of the adverse environmental effects of the Project. In particular, the [Panel] erred in law by failing to consider whether the radioactive waste from the Project will have significant adverse environmental effects, and whether there are any technically and economically feasible measures which would mitigate any significant adverse environmental effects arising from the Project in accordance with subsection 16(1)(d) of the CEAA.

> 54. The [Panel] found that the radioactive waste generated by the Project could result in significant cumulative effects "related to doses to workers, the public and the environment if it is not properly managed should it remain permanently on-site." The [Panel] also acknowledged that a number of significant gaps in information regarding long-term radioactive waste management exist. Rather than requiring OPG to provide this information at the hearing, the [Panel] merely recommended future study and analysis be conducted. The [Panel] erred by failing to assess the environmental effects of radioactive waste, and therefore had no factual basis to conclude that "radioactive and used fuel waste is not likely to result in significant adverse environmental effects."

[284] The Stensil affidavit points to two reports submitted to the Panel by Greenpeace Canada in this regard. One was dated September 2010 and is entitled *Rock Solid? A scientific review of geological disposal of high-level radioactive waste*. It was commissioned by Greenpeace International and written by Helen Wallace of GeneWatch UK (Applicant's Record, Vol. 2, Tab F1 [GeneWatch Report]). The other was dated May 2010 and prepared by Marvin Resnikoff, Ph. D., Jackie Travers and Ekaterina Alexandrova of Radioactive Waste Management Associates, under the sponsorship of Greenpeace Canada. It is entitled *The Hazards of Generation III Reactor Fuel Wastes: Implications for Transportation and Long-Term Management of Canada's Used Nuclear Fuel* (Applicant's Record, Vol. 2, Tab F3 [Resnikoff Report])

[285] The affidavit of Brennain Lloyd, Project Coordinator with Northwatch, also addresses this issue, and noted that three reports commissioned by Northwatch, all dated February 21, 2011, were submitted to the Panel on March 29, 2011 (Lloyd affidavit, Applicant's Record, Vol. 7, Tab 6, para 30, and hearing transcript at Applicant's Record, Vol. 7, Tab K, pp. 11-85).

[286] The central thesis of the Resnikoff Report is that the spent fuel from the reactor designs under consideration for the Project will be more difficult to manage than nuclear waste from existing nuclear plants in Canada, and that there is no adequate plan in place to manage this waste. The report states that, unlike all currently operating CANDU reactors in Canada, which use natural uranium fuel, all of the reactors being considered for the Project use enriched uranium fuel (this would not be true of the later-added EC-6 design). The Resnikoff Report says that the fuel waste from these reactors will be between 2 and 158 times more radioactive than the waste produced by existing CANDU reactors, will contain higher levels of long-lived hazardous radionuclides such as americium, curium and plutonium (though there will be less spent fuel by weight), and will take much longer (2.6 million years compared to approximately 1 million years) to decay to levels of radioactivity equivalent to that of natural uranium. In short, the report says that the spent fuel will be more hazardous and more difficult and costly to manage. It emphasizes (at p. 22) that:

> The proposed shift to Generation III reactor designs which use enriched reactor fuel with an increased fuel burn-up will lead to the production of used nuclear fuel that is much more hazardous than the fuel generated by Generation II reactors.
>
> In its environmental assessment of the construction of new reactors at Darlington, OPG did not analyze the hazards associated with the transportation and long-term management of Generation III used nuclear fuel at a centralized repository, as it assumes that any off-site facility "will have been subject to its own approval process." Since the NWMO's APM for a centralized deep geological repository is limited to the projected used nuclear fuel inventory of Generation II reactors in Canada, the addition of Generation III–type reactor wastes to the repository falls outside the scope of the NWMO's APM. If OPG's new reactor builds continue as planned at the Darlington site, then Generation III reactors, which have not yet been tested or operated anywhere in the world, will be allowed to operate in Canada without any analysis of the hazards and consequences of their used nuclear fuel waste.

> The addition of the Generation III used nuclear fuel with its higher burn-up will impose increased environmental and human health risks at every stage of the APM process, from the operation of the nuclear reactors to the long-term monitoring of the used nuclear fuel disposed of in the deep geological repository. Generation III reactor used nuclear fuel will not only affect the cost of construction and the size of the deep geological repository, but also the interim-storage and the transportation of the used nuclear fuel. Since nuclear fuel with higher burn-up contains a greater inventory of radionuclides, the health hazards imposed on the workers handling it, as well as on members of the public who reside along its shipping routes or within the vicinity of the deep geological repository, will be greatly affected also.

[287] The Resnikoff Report goes on to describe in greater detail the authors' view that the use of fuel with a higher burn-up rate imposes additional hazards during operation (p. 23), during interim storage, which may need to occur for much longer periods (pp. 24-25), during transportation (pp. 26-28), and during any future long-term disposal in a geologic repository (pp. 29-33). In the authors' view, all of this makes the OPG's cost estimates for fuel management highly uncertain and speculative (p. 34).

[288] The Resnikoff Report says that this type of waste is outside of the parameters of what has been studied or planned for by the Nuclear Waste Management Organization (NWMO), an industry-funded body tasked through legislation with managing nuclear fuel waste in Canada, and will require techniques that have not yet been proven. The report emphasizes that current planning by NWMO encompasses only the projected spent fuel from existing reactors. It cites a NWMO Advisory Council report stating that any consideration of new nuclear development that would create additional spent fuel, or a different type of spent fuel (due to enrichment) "should trigger a review of the work undertaken by the NWMO to date," and should entail "broad public

discussion of Canadian energy policy prior to a decision about future nuclear energy development" (Resnikoff Report at p. 8).

[289] The Resnikoff Report also states that the higher "burn-up" of fuel in Generation III reactors poses new challenges for the safe operation of these reactors, and will result in increased environmental and human health consequences in the event of an accident. Since all of the reactors being considered are "untested prototypes," the report says there is no empirical evidence to support the claims of safety.

[290] In addition to feasibility and safety concerns, the Resnikoff Report raises a concern that the higher toxicity and longer lifespan of the radioactive wastes from the Project will increase the cost of near-term, mid-term and long-term radioactive waste management, and that without a proper assessment of these costs, the Project will impose an unfair financial burden on tax-payers, electricity ratepayers and future generations.

[291] The GeneWatch Report undertakes a literature review of papers in scientific journals regarding the concept of long-term underground disposal (i.e. geographic repository) of highly radioactive wastes. It points to a number of uncertainties and phenomena that could, in the author's view, compromise the containment barriers of such facilities and lead to significant releases of radioactivity. It says that until such difficulties can be resolved, a number of scenarios exist in which a significant release of radioactivity from a deep repository could occur, with serious implications for the health and safety of future generations.

[292] In terms of the Respondents' submissions, this issue is addressed most directly by OPG, at paragraphs 67-71 of its memorandum. OPG points to paragraphs 240-241 and 245-248 of the Affidavit of Laurie Swami (Respondents' Record (OPG), Vol. 1, Tab A at pp. 58-59 [Swami affidavit]). The Swami affidavit, in turn, points to pages 2-8, 2-17 and 13-11, as well as section 2.4.3 of the Panel Member Document (excerpt at exhibit 82 to the Swami Affidavit), and the hearing transcript from the morning of Tuesday, March 29, 2011, when the issue of radioactive waste management was addressed. There was a presentation by a representative of OPG, presentations by individuals associated with Northwatch, and questioning by Panel members of representatives of OPG, CNSC staff, NWMO, and the Northwatch presenters.

[293] The excerpts from the EIS and the Panel Member Document confirm that there was no extended treatment of the issue of long-term nuclear spent fuel management and disposal in OPG's EIS or its responses to inquiries. Rather, OPG took the view that the development and implementation of a long-term management approach for used fuel is the responsibility of NWMO, and is subject to a separate federal approvals process (EIS at p.2-8). There was no discussion of NWMO's proposed approach, what studies and regulatory approvals have or have not been completed, and whether spent fuel from reactors using enriched uranium would present additional challenges. The description of on-site (interim) management of spent fuel was general in nature, as the means of storage is unique to each reactor type (Panel Member Document at p. 22, Respondent's Record (OPG) at p. 4146), but OPG indicated in the EIS that the assessment of effects established that all considered forms of dry storage of used fuel will be acceptable from an environmental perspective" (EIS at p. 13-11).

[294] At the hearing before the panel, there was discussion of issues relating to the feasibility and risks associated with a deep geological repository, and whether it would be possible to store and manage the spent fuel at the Darlington site for much longer than the operating life of the reactors – possibly for hundreds of years – if such a repository were not available. My reading of the transcript suggests that there was a considerable divergence of views on these issues, and that it would be difficult to draw any firm conclusions based solely on the information presented and discussed at the hearing.

[295] On the issue of whether OPG would be able to manage the waste indefinitely – or into the hundreds of thousands of years – should this become necessary, OPG's position was ultimately that this is what the Government of Canada has mandated NWMO to study (see Transcript at pp. 164-65, Respondent's Record (OPG) at pp. 4135-36, response of Dr. Herminia Roman).

[296] It was confirmed at the hearing before the Panel that OPG will continue to be responsible for the management of the spent fuel unless and until it is transferred to another licensee (i.e. NWMO) to manage it. While OPG will remain the "owner" of the waste in perpetuity, CNSC staff noted that ownership is not the relevant criterion with respect to who is responsible to manage it and ensure its safety. Rather, the question is which licensee has control of the waste (Transcript at p. 127, Respondent's Record (OPG) at p. 4098, response of Barclay Howden, CNSC, at lines 8-16).

[297] In my view, the record confirms that the issue of the long-term management and disposal of the spent nuclear fuel to be generated by the Project has not received adequate consideration.

The separate federal approvals process for any potential NWMO facility, which has not yet begun (see Transcript at p. 99, Respondent's Record (OPG) at p. 4070, response of Barclay Howden, CNSC, at lines 9-12) will presumably ensure that such a facility is not constructed if it does not ensure safety and environmental protection. But a decision about the creation of that waste is an aspect of the Project that should be placed before the s. 37 decision-makers with the benefit of a proper record regarding how it will be managed over the long-term, and what is known and not known in that regard.

[298] The issue of the transportation of used nuclear fuel was also discussed at the hearing before the Panel, and may be an issue that requires further consideration by the Panel as part of its consideration of the long-term management of spent nuclear fuel from the Project.

[299] The EA Report discusses the management of spent nuclear fuel in several sections, including section 2.5.3 Waste Management (under Alternative Means of Carrying Out the Project), section 3.3 Overview of Public Comments at the Hearing, section 4.6.6 Decommissioning and Abandonment, and section 6.8 Waste Management (under Analysis of the Human Environment).

[300] OPG explained that managing spent fuel is a two-stage process, involving wet storage for initial cooling, lasting approximately 10 years, followed by dry storage. Except for the EC-6 design, each of the reactor technologies under consideration will require enriched fuel, in contrast to the CANDU reactors currently operating in Canada, which use natural uranium fuel. This "introduces elements of criticality control requirements for storage as well as potential heat

load issues for dry storage and eventual long-term management." The Panel notes that "[s]ome processing modifications may be required" depending on the reactor technology chosen "due to new fuel dimensions, higher burn-up and heat load." Interim storage is intended to take place on-site, with specific containers for dry storage to be "selected to suit the chosen reactor technology and licensed for their function prior to use" (EA Report at p. 18).

[301] OPG assumed for planning purposes that only 50% of used fuel would require interim storage on-site, noting that NMWO is responsible for long-term management of used fuel. OPG assumed that a long-term used nuclear fuel repository would be in service by about 2035, and all used fuel would be removed from the Darlington Waste Management Facility to that repository by 2064. With respect to space requirements, OPG stated that there would be sufficient space on the Darlington site to store all of the used fuel from the Project in perpetuity, should the long-term used nuclear fuel repository not be in service (EA Report at p. 19). With respect to technical issues, the EA Report notes that:

> The main technical points that would need to be addressed for used nuclear fuels from the Project reactors in the Nuclear Waste Management Office repository are the effect of different physical configuration, the effect of higher burnup, the effect of higher initial enrichment and the capacity of the repository to handle the additional fuel.
>
> (EA Report at p. 19)

[302] The Panel noted the concerns expressed by many hearing participants regarding the proposed approach:

> Many participants expressed concerns regarding the long-term management of the nuclear waste generated by the Project, used fuel in particular. Participants were of the view that OPG had not adequately addressed many of the issues related to long-term fuel

> waste management, and noted that a proven solution for the disposal of used fuel had not yet been developed by the nuclear industry. Participants expressed the view that no further nuclear waste should be created until a proper solution is found.
>
> Many participants were of the view that used fuel would be a burden on future generations as it will require long-term storage and monitoring for the duration of its life as a hazardous substance, which could be for thousands of years. In this regard, participants felt that long-term storage of used fuel on the Project site had not been properly assessed.
>
> Participants noted that although the responsibility for the long-term management of used nuclear fuel waste in Canada had been assigned to the Nuclear Waste Management Organization by the federal government through the *Nuclear Fuel Waste Act* (S.C. 2002, c. 23), the Organization's Adaptive Phased Management approach was developed for application to the existing fleet of nuclear reactors and does not include consideration of used fuel from new reactors.
>
> […]
>
> Contrary to these views, some participants were of the opinion that OPG has demonstrated that used fuel waste has been safely managed at its existing waste management facilities and were hopeful that a solution for waste would eventually be found. Other participants were of the view that used fuel could be reprocessed for use as fuel by future generations in new reactor technologies.
>
> (EA Report at pp. 27-28)

[303] In the context of considering the decommissioning phase of the Project, the Panel states the following regarding used nuclear fuel management:

> The Panel is of the view that the preliminary decommissioning plan shall reflect that no solution has yet been implemented for the longterm management of used fuel. The Panel acknowledges that the preliminary decommissioning plan would be updated as required by the *Nuclear Safety and Control Act* and Regulations.
>
> (EA Report at p. 53)

[304] The Panel's evaluation of OPG's proposed approach to used nuclear fuel management and its effects on the environment can be found primarily in section 6.8 Waste Management (under Analysis of the Human Environment). The Panel outlined OPG's submissions on the issue, including the following:

> OPG stated that the plant parameter envelope included information on the differences in the design of fuel required by the various reactor technologies. OPG noted that these design differences would require different provisions for dry storage, particularly with the use of enriched uranium fuel. OPG further noted that ensuring criticality safety and adequate cooling for dry nuclear fuel storage would be achieved as a design requirement for all reactor types.
>
> At the hearing, OPG confirmed that radiation doses from the used fuel management operation would not result in significant adverse effects to the workers and the public. The proponent also confirmed that, if necessary, used fuel could be loaded into a new dry storage container in the event of damage or aging degradation of an existing container. OPG indicated that this could be achieved without any significant adverse effects in the reactor fuel handling bays. The proponent indicated that the dry storage canisters would be robust and would withstand high energy impact loads without release of stored used nuclear fuel components.

[305] The Panel then set out its own assessment, stating that:

> Based on the assessment completed by CNSC staff, the Panel accepts the conclusion that the measures described for the on-site management of low and intermediate-level radioactive waste, used nuclear fuel waste, conventional waste and other hazardous waste will ensure that there will be <u>no significant adverse environmental effects on site from this activity</u>, taking into account the mitigation measures and controls established for the management of waste.
>
> (EA Report at p. 117, emphasis added)

[306] The Panel notes that OPG's assumption regarding the relocation of used fuel to an off-site facility was dependent on the outcome of a NWMO initiative. It found that "the availability of the proposed used nuclear fuel repository could be delayed because of a number of factors,"

including "difficulties in obtaining a willing host community, an acceptable site from a geotechnical perspective, regulatory approval… public acceptance of the facility, or public acceptance of provisions for transport of the used fuel to the repository" (EA Report at p. 117). In view of this, the Panel found that provision should be made for on-site storage of the used fuel for longer than anticipated by OPG. It therefore made the following recommendation:

> **Recommendation # 52:**
>
> The Panel recommends that prior to construction, the Canadian Nuclear Safety Commission require OPG to make provisions for on-site storage of all used fuel for the duration of the Project, in the event that a suitable off-site solution for the long-term management for used fuel waste is not found.

[307] Though it refers to potential delays in the availability of an off-site repository, the Panel makes no mention here of the implications of using enriched nuclear fuel. Yet, if the Applicants are correct – and the Respondents have not pointed to any contrary information – NMWO has made no assessment of the suitability or availability of a deep geological repository, or its Adaptive Phased Management approach more broadly, for this type of fuel waste. Indeed, the Applicants contend there has been no planning for any used nuclear fuel beyond what already exists and what is expected to be produced by the existing CANDU reactors during their remaining expected use.

[308] The Panel noted earlier in the EA Report that enriched fuel poses new technical issues for a potential NWMO repository, including "the effect of different physical configuration, the effect of higher burnup, the effect of higher initial enrichment and the capacity of the repository to handle the additional fuel" (EA Report at p. 19). It also notes that "no solution has yet been implemented for the longterm management of used fuel" (EA Report at p. 53). And yet, the

Panel has provided no discussion of the suitability of the current NMWO plan for the type of waste to be generated by the Project, or the feasibility of alternatives should that plan prove unworkable for the waste from this new facility.

[309] The Panel recommends that OPG be required to make provisions for on-site storage "of all used fuel for the duration of the Project." However, if "a suitable off-site solution for the long-term management for used fuel waste is not found," the "duration of the Project" will extend to however long the used fuel must be managed. This is essentially an indefinite period of time given that used nuclear fuel remains radioactive for hundreds of thousands of years. The Panel provides no analysis of the feasibility of storing and managing used nuclear fuel at Darlington in perpetuity.

[310] In my view, there is a significant gap in the analysis here that deprives political decision-makers of an important part of the evidentiary record required to discharge their responsibilities under s. 37 of the CEAA. Without information regarding the suitability of existing plans for used nuclear fuel management to deal with waste from the Project, they cannot realistically assess whether the risks and impacts are in line with "society's chosen level of protection against risk." It may be that the s. 37 decision-makers are entitled to trust that the necessary technologies will be available when they are needed; that is not the question before the Court. If they are to do so, however, they must at least have the benefit of a full factual record. It would seem appropriate for that record to include analysis regarding:

- What effect the addition of spent fuel from enriched uranium would have on current plans for the management and disposal of spent nuclear fuel;

- The likelihood that a deep geological repository – the proposed end state of the Adaptive Phased Management approach – will be available or appropriate for that type of fuel, or at least an analysis of the degree to which this has or has not been assessed, to provide a sense of the level of uncertainty involved;

- If such a facility proves not to be appropriate or available, what alternative means exist for managing this type of fuel in perpetuity to isolate it from people and the environment; and

- The cost implications of the above scenarios for current and future generations.

[311] I realize that we are dealing here with an issue that has time horizons in the hundreds, and potentially hundreds of thousands, of years, and the Panel cannot be expected to describe in exacting detail everything that is likely to occur over that length of time, or the technologies that will or will not be available. However, precisely because of the scale of the impact, in terms of time horizon and potential severity, it is not an issue that can be glossed over. The Panel should at minimum set out what is known and not known about how spent fuel from enriched uranium will be managed in the future, including what planning and assessments have and have not been completed.

[312] In my view, this is not a "separate issue" that can be deferred to be dealt with when and if NWMO seeks approval for a facility to permanently manage and dispose of the waste generated. The EA is the only occasion, in relation to this Project, on which political decision-makers at the federal level will be asked to decide whether that waste should be generated in the first place. They must be in a position to understand whether they are being asked to take a leap of faith, and if so, how big a leap it is.

[313] Nor do the Terms of Reference or the EIS Guidelines say anything that suggests that this issue was not to be addressed as part of the EA. The Guidelines state:

> In addition to the project-phase specific requirements for waste provided in the preceding subsections, the EIS must present the proponent's proposed plan for the disposition of all radioactive and hazardous wastes and used fuel. The proponent's activities related to the site preparation, construction, operation, decommissioning and abandonment of low and intermediate level waste management facilities, and used fuel storage facilities, must be described. Where this plan identifies that radioactive or hazardous wastes or used fuel are expected to be managed by an organization other than the proponent, the EIS must describe at a conceptual level the methods that can be used to ensure that these materials are managed in a manner that protects health, safety and the environment.
>
> (EIS Guidelines at p. 24)

The words "the methods that can be used" implies that feasibility is to be part of the assessment.

[314] With respect to the relevant time horizons, the EIS Guidelines state:

> At a minimum, the assessment must include the period of time during which the maximum effect is predicted to occur. "Maximum" refers to the greatest change from baseline conditions to what is predicted and should be bounding across reactor types. The approach taken to determine the temporal boundary of assessment should take into account the following elements:
>
> - hazardous lifetime of the contaminants, including those associated with waste and used fuel, or with releases to the environment during both normal operation and postulated accidents, malfunctions and malevolent acts;
>
> [...]
>
> (EIS Guidelines at p. 27, emphasis added)

[315] The fact that NWMO may at some point assume control of the waste from OPG is immaterial to its potential to cause significant adverse effects; the waste must in any case be managed.

[316] The fact that the EC-6 option would not use enriched uranium is also immaterial; as with all other elements of the "bounding scenario," OPG must be prepared to demonstrate an acceptable level of environmental risk with respect to each of the technologies under consideration.

[317] It bears noting that this is the first proposed nuclear new build in Canada in over a generation, the first since the CEAA was enacted, and the first to potentially use enriched uranium fuel. If it seems as though this Project is being held to a higher standard than those that came before it in terms of planning for the used nuclear fuel it will generate, this is nothing more than a consequence of the statutory environment within which it has been proposed. It should not be surprising that Canada's approach to environmental approvals has developed and evolved over the past several decades.

[318] I conclude on this issue that the Panel did not reasonably address the issue of the long-term management and disposal of used nuclear fuel in accordance with its obligations under the CEAA, and must supplement or amend its Report accordingly. Whether this requires additional research or consultation should be for the Panel to determine as the master of its own process, but it should at a minimum address the points outlined above.

Deferral of the analysis of a severe common cause accident

[319] The possibility of a severe "common cause" accident affecting multiple reactors at the Darlington site was considered by the Panel in the context of assessing "cumulative effects" that could result from the Project in combination with other projects or activities. Notably, the public hearings for the EA took place immediately following the Fukushima Daiichi nuclear disaster, to which the Panel makes reference in its analysis.

[320] The Panel noted that the Project would be added to the site of the existing Darlington NGS, and "the resulting cumulative dose should also be evaluated as a cumulative effect" (EA Report at p. 133). The Panel observed that OPG had not analyzed cumulative effects of the existing and new facilities for malfunction and accident scenarios "because they were considered hypothetical and to have a very low probability of occurring." It noted that OPG took the view that this was consistent with guidance from the Canadian Environmental Assessment Agency, stating that accidents should be considered as unique scenarios, but the Panel took a different view of the relevant guidance:

> The Panel notes OPG's interpretation of this aspect of the Canadian Environmental Assessment Agency *Cumulative Effects Practitioners Guide*. The Panel is of the view that a more appropriate interpretation, in this instance, would have been to include a cumulative effects assessment of a common cause accident involving multiple reactors in the site study area.
>
> The Panel has concluded that conventional malfunctions and accidents are not likely to cause significant adverse environmental effects, taking into account the proposed in-design safety systems, mitigation measures, including preventive measures and emergency response capabilities. However, based on the views expressed by participants during the review and the concerns regarding accident scenarios such as the Fukushima Daiichi nuclear accident, the Panel is of the view that for emergency planning purposes, OPG should perform an evaluation of the

> cumulative effect of a common-cause severe accident scenario that would include all of the nuclear generating reactors in the site study area.
>
> (EA Report at p. 133)

[321] The Panel then made the following recommendation:

> **Recommendation # 63:**
>
> The Panel recommends that prior to construction, the Canadian Nuclear Safety Commission require OPG to evaluate the cumulative effect of a common-cause severe accident involving all of the nuclear reactors in the site study area to determine if further emergency planning measures are required.

[322] It is useful to place this analysis and recommendation in the context of the Panel's earlier analysis of "conventional" accidents and malfunctions, referred to in the quotation above and found at pages 122-125 of the EA Report. There, the Panel notes that OPG had analyzed "a number of bounding radiological malfunctions and accidents" as part of its EIS. The analysis of accident scenarios was conducted based on CNSC's regulatory document RD-337, *Design of New Nuclear Power Plants I* [RD-337]. The scenarios analyzed included accidents that could occur during waste handling, an "out-of-core criticality event" (such as an accident while handling new nuclear fuel), an accident during off-site transportation of low or intermediate-level radioactive waste, and malfunctions or accidents that could affect a reactor itself.

[323] For the majority of these scenarios, OPG concluded (and the Panel accepted) that no significant adverse environmental effects would result, and potential radiological doses to workers and the public would be below regulatory exposure limits.

[324] For certain scenarios involving damage to the reactor core, whether regulatory limits were exceeded at the boundaries of the Project site would depend on certain variables; namely, "the calculation methodology adopted and use of a site-specific atmospheric dispersion factor" (EA Report at p. 124).

[325] This meant that "a number of uncertainties remained in the proponent's analyses of the consequences of reactor accidents." The Panel stated that these concerns needed to be addressed once the designs for the Project were more complete, but that the analysis of "bounding scenarios" provided by OPG was sufficient for EA purposes because the qualitative and quantitative safety goals set out in RD-337 would be enforced at a later stage:

> CNSC staff stated that the bounding approach adopted by OPG for its assessment of the health consequences of a nuclear accident were acceptable for the purpose of the environmental assessment. CNSC staff noted that this approach was acceptable because a reactor that does not meet the specified safety goal-based release limits of RD-337 would not be accepted for operation on the grounds that it would not be compliant with regulatory requirements in Canada.
>
> The Panel accepts the adoption of a safety goal-based approach for the assessment of the consequences of an accident in a situation where there has not been a choice of reactor technology. The Panel notes, however, that once this choice has been made, the proponent must be required to complete an assessment of the offsite effects of a severe accident that could arise for the chosen technology.
>
> […]
>
> The Panel is of the view that once a technology has been selected for the Project there will be a need for more specific analysis of potential accidents and the consequent releases and health effects. The review of the Application for a Licence to Construct the reactor would require confirmation that the health effects conclusion from the present assessment remains valid for the predicted accident conditions.

> […]
>
> The Panel concludes that the Project is not likely to result in significant adverse environmental effects on the health and safety of workers and the public during accidents and malfunctions, taking into account the implementation of mitigation measures, such as the functioning of reactor safety systems and the on-site Consolidated Nuclear Emergency Plan and offsite emergency measures, along with the following recommendations.
>
> [emphasis added]

[326] The Panel then made the following recommendations:

> **Recommendation # 57:**
>
> The Panel recommends that prior to construction, the Canadian Nuclear Safety Commission require OPG to undertake an assessment of the off-site effects of a severe accident. The assessment should determine if the off-site health and environmental effects considered in this environmental assessment bound the effects that could arise in the case of the selected reactor technology.
>
> **Recommendation # 58:**
>
> The Panel recommends that prior to construction, the Canadian Nuclear Safety Commission confirm that dose acceptance criteria specified in RD-337 at the reactor site boundary—in the cases of design basis accidents for the Project's selected reactor technology—will be met.

[327] While not without its critics (see EA Report at p. 29), it appears that RD-337 sets out a multi-layered methodology for assessing the ability of a nuclear plant to withstand accidents and the risk of dangerous levels of radiation exposure to workers and the public. The evidence before the Court is that a plant that does not comply with the qualitative and quantitative safety goals set out in RD-337 will not be approved for construction or operation. One can debate the methodology, but there is nothing on the record that would allow the Court to say that reliance

upon it by the Panel or the s. 37 decision-makers amounts to non-compliance with any of the requirements of the Act. This is a matter upon which the Court must defer to the Panel's expertise.

[328] RD-337 sets out a clear (though complex) standard with respect to safety that new nuclear facilities must meet. This standard and the knowledge that it will be enforced allows both the Panel and the s. 37 decision-makers to fulfill their responsibilities under the Act, even in the absence of complete design information at the outset of the Project.

[329] In other words, it is my view that with respect to the safety of the Project itself, the Panel's analysis provides a sufficient factual basis for the decisions that needed to be made, and fulfills the Panel's obligations under the Act.

[330] What the Panel raised in its discussion of cumulative effects was that, in the specific circumstances of this case, where the Project is being built on the site of an existing nuclear generating station, accidents or malfunctions that affect both the existing and new plants could have effects that go beyond those contemplated by the RD-337 methodology. It found that these were effects that need to be contemplated, particularly in relation to emergency planning measures.

[331] This seems to engage the realm of highly improbable, but possibility catastrophic, events. On policy grounds, it is logical that such scenarios should be considered by political decision-makers, because once again they seem to engage mainly questions of "society's chosen level of

protection against risk" that will be difficult for a specialized regulator to assess with legitimacy. On this view, having found that such an analysis was required, it would seem more appropriate for the Panel to have insisted it be completed within the EA process, so that it could be considered in the s.37 context.

[332] However, the language of the statute introduces some uncertainty on this point. Section 16(1)(a) says that a review panel shall consider:

> the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
>
> [emphasis added]

[333] Thus, cumulative effects are to be considered if they are likely to occur, whereas accidents and malfunctions that may occur *in connection with* the project are to be considered. So, whether a common cause severe accident affecting both the existing and proposed nuclear reactors at Darlington – a low probability event – had to be considered in the context of the EA depends upon the category in which it is placed: a cumulative effect relating to both the new and existing facilities, or an accident "that may occur *in connection with* the project" (emphasis added). In my view, the latter category is sufficiently broad to encompass the proposed analysis. The statutory language does not limit the consideration of accidents to those pertaining solely to the Project, or exclude consideration of interactions with the surrounding environment, including other facilities nearby.

[334] In my view, the one conclusion that is not supported by the language of the statute is the Panel's conclusion that the analysis had to be conducted, but could be deferred until later. Rather, in my view, it had to be conducted as part of the EA so that it could be considered by those with political decision-making power in relation to the Project.

[335] I recognize that, in responding to the Panel's recommendation, the Government of Canada stated as follows:

> The Government of Canada accepts the intent of this recommendation to require OPG to evaluate the cumulative effect of a common-cause severe accident in the site study area. The Government of Canada notes that the CNSC has established a task force to examine the lessons learned from the Japan Earthquake and will evaluate the operational, technical and regulatory implications of the nuclear event in Japan in relation to Canadian nuclear power plants.

Earlier in its response, the Government of Canada indicated that where it "accepts the intent" of a recommendation, this means that it "agrees with the underlying spirit of the recommendation but may not implement it precisely as written by the Joint Review Panel."

[336] The existence of a broader review related to the Fukushima Daiichi incident, which the record suggests has now been completed, takes nothing away from the need to conduct a site-specific analysis for new proposed nuclear plants. Indeed, one would expect that the lessons articulated in the broader review would serve to strengthen the site-specific analysis.

[337] In my view, then, the Panel's approach to this issue was unreasonable and not in accordance with its obligations under the CEAA and it needs to be revisited in some supplement or amendment to the Report.

Relevant Case Law

[338] It is impossible to discuss in detail all of the case law relied upon by the parties in this application. However, in view of my findings on reviewable errors as set out above, I think that it is necessary to address the following cases:

West Vancouver

[339] The *West Vancouver* case, cited above, illustrates that the question of whether a decision-maker had sufficient information to assess the environmental effects of a project and their significance (taking into account feasible mitigation measures) is a question to be determined on the facts of each case.

[340] I have already noted that, in some cases, it may be difficult to quantify effects, and a more qualitative assessment may be necessary or appropriate. In the case at hand, there was no real "qualitative" assessment of hazardous substance releases, and in particular the effects of liquid effluent and stormwater runoff, but rather only a consideration of potential mitigation measures. In my view, Justice Lemieux's analysis in *West Vancouver* can be distinguished on that basis: *West Vancouver* was a case where the Court explicitly found that an adequate qualitative assessment of the effect in question was completed based on adequate evidence, and the case turned on that finding.

[341] Though not determinative, it should also be noted that the level of assessment at issue in *West Vancouver* was a "screening assessment," which is typically less rigorous than an assessment by a review panel.

[342] The framing of the question was as follows:

> [4] West Vancouver contends the federal screening assessment and decision does not comply with the CEAA for three reasons:
>
> > (1) The RAs in their environmental assessment failed to conduct a risk analysis of a material environmental effect, namely, the impact of blowdown or windthrow of trees likely to be caused by the construction of a new four-lane highway over the area adjacent to Eagleridge Bluffs and the Larsen Creek Wetlands. Alternatively, West Vancouver says if the RAs made a finding that windthrow of trees was not a significant adverse environmental effect, the decision could not be rationally sustained having regard to the level of the assessment actually conducted. Counsel for West Vancouver framed the question on this issue as "[I]s it an error of law to identify an environmental issue, defer the assessment to a later date but conclude before the assessment that the Project is not likely to cause any significant environmental effect ?"
>
> […]
>
> [5] Canada conceded if the factual assumption underlying the question framed by counsel for West Vancouver were true, the RAs' decision would contain an error of law. However, he argued, no error was committed because factually the assessment was made based on available and cogent information. The assessment was not deferred. On this issue, counsel for B.C. denied the scenario would constitute an error of law because mitigation was a function of the final design.

[343] The applicant in *West Vancouver* cited portions of a report completed for the BC Ministry of Transport which appeared to show that there was not enough information available as of the date when the screening assessment was completed to determine the impact of blowdown or windthrow of trees and the significance of this impact. Justice Lemieux emphasized that it was essential to look at this information in context, having regard to the other information available to the decision-makers:

> [102] I agree with counsel for Canada and B.C. there was ample evidence before the RAs to enable them to assess the environmental impact of windthrow in the affected area and to consider its significance measured against known mitigation techniques which cannot be implemented at the preliminary design stage but rather must be implemented when the design of the highway has taken shape.
>
> [103] Specifically, based on the Dunster Report read in its entirety and the other accumulated evidence, federal and provincial reviewers, on May 7, 2004, being aware of the windthrow issue which was specifically discussed at this meeting, reached a tentative conclusion neither Option B nor Option D had the potential for significant adverse environmental effect if mitigation was applied, an opinion which was reasonably open to them to reach and to subsequently confirm after the May 10th meeting with West Vancouver.
>
> [104] In the circumstances, it was reasonable for the RAs to rely upon B.C.'s (MOT) commitment to mitigate through follow up studies when the timing to do such studies is appropriate.
>
> [emphasis added]

[344] In my view, paragraphs 102 and 104 of *West Vancouver* must be read together, not in isolation. The responsible authorities had "ample evidence… to assess the environmental impact of windthrow in the affected area and to consider its significance measured against known mitigation techniques…." In light of this, "it was reasonable for the [responsible authorities] to

rely upon B.C.'s… commitment to mitigate through follow up studies when the timing to do such studies is appropriate."

Inter-Church Uranium Committee

[345] In my view, *Inter-Church Uranium Committee*, above, is of limited assistance to the Respondents. The case related to the operation of a uranium mine in northern Saskatchewan (the McClean Lake Project). The project was proposed while the *Environmental Assessment and Review Process Guidelines Order*, SOR/84-467 (the "Guidelines Order") which preceded the CEAA was in effect, and an EA was conducted under the Guidelines Order. Similar to the case at hand, the relevant licensing scheme was a staged one, with separate licences issued for successive stages of the project. After the CEAA and new regulations had come into effect, the applicants challenged the issuance of an operating licence by the Atomic Energy Control Board (predecessor to the CNSC) for a mill and tailings management facility associated with the mine – the fifth operating licence to be issued to the project, in addition to a site clearing licence and three construction licences that preceded the operating licences. The applicants argued that a new EA was required under the CEAA. The Federal Court (per Campbell J) accepted this argument based on its interpretation of the transitional provisions of the CEAA (specifically s. 74(1)), but the Court of Appeal interpreted those provisions differently and reversed the Federal Court's decision. The case turned entirely on the interpretation of the transitional provisions of the CEAA.

[346] In the EA, the review panel in *Inter-Church Uranium Committee* had expressed concern over the proposed tailings management method, which was somewhat unproven, and had

recommended that the project be delayed for at least five years so that more could be learned about its viability based on a similar facility then in operation. The responsible authorities rejected that approach, and allowed the project to proceed under the staged licensing process, since it was anticipated that the licensing process would take several years and would, over time, deal with the issues raised by the panel regarding tailings management. That decision by the responsible authorities was not at issue before the Court.

[347] Rather, as noted above, at issue was whether a new EA was required before a new licence could be issued following the coming into force of the CEAA. The Court of Appeal addressed this issue in the following terms:

> [47] That does not mean that the end of the work of the Panel means an end to all environmental review for the McClean Lake Project. Environmental issues must be considered for each licence issued under the Uranium and Thorium Mining Regulations and their successor, the Uranium Mines and Mills Regulations. In addition, the CEAA environmental screening and assessment process may be triggered in future if subsection 74(3) of the CEAA applies. That would be the case if, for example, there is a proposal to undertake some activity relating to the McClean Lake Project that was not within the Panel's terms of reference (such as the increase in production proposed and permitted by the Commission in 2001, which had not been considered by the Panel established under the Guidelines).
>
> [48] The ICUC is concerned that too narrow an interpretation of subsection 74(1) of the CEAA could mean that when the McClean Lake Project is finally decommissioned many years from now, there will be no new environmental assessment. Such concerns are speculative at this stage. The extent to which a new environmental assessment will be required for a decommissioning licence will depend on the circumstances at that time, and the precise proposal that is presented to the Commission in the application for a decommissioning licence.
>
> [49] The ICUC also argued that subsection 74(1) of the CEAA does not apply because the current McClean Lake Project is not the

> same "proposal" that was reviewed by the Panel under the Guidelines. The ICUC points to several changes in the Project since 1993, including a change in the proponent and majority owner, design changes, the discovery of new environmental threats from arsenic, a scientific study indicating radioactive contaminant can migrate over long distances in groundwater faster than originally thought, a new regulatory climate with regard to water quality guidelines for arsenic, and the addition of radionuclides from uranium mills to the List of Toxic Substances in Schedule I to the Canadian Environmental Protection Act, S.C. 1999, c.33. In my view, none of these changes transform the McClean Lake Project into a new proposal. The Panel recognized that changes in science and technology would occur over the life of the Project and acknowledged that it would be the Board's responsibility to evaluate the effects of these developments in the context of its licensing responsibilities.
>
> […]
>
> [51] As subsection 74(1) of the CEAA is dispositive of these appeals and the application for judicial review, it is unnecessary to consider the remaining arguments made by the appellants.
>
> [emphasis added]

[348] Read in their context, paragraphs 47 and 49 of this decision do not, in my view, support the Respondents' position. They merely point out that, while a valid EA had been conducted under the Guidelines Order and was still applicable to the project, environmental concerns would continue to receive consideration through the licensing process. If anything, this reinforces the Applicants' point that it is likely that only one EA will be conducted on the Project at issue in the present case, despite the fact that there will be several subsequent licensing steps that will include consideration of environmental effects. The case recognizes that the process of assessing and managing a project's effects does not end with the completion of the EA, but beyond this, it does not assist the Respondents.

[349] The question at issue in the current matter is whether a valid EA was conducted. This was answered in *Inter-Church Uranium Committee* by reference to the transitional provisions of the CEAA, which have no relevance here. The substantive adequacy of the assessment of the assessment conducted under the Guidelines Order was not at issue, since it was "not alleged that the Guidelines are deficient in any substantial way, or that an environmental problem associated with the McClean Lake Project was missed or ignored because of the application of the Guidelines and not the CEAA" (para 33 above). Therefore, in my view, the case provides no assistance to the Respondents with respect to whether the assessment in the current matter was conducted in accordance with the requirements of the Act.

Express Pipelines

[350] *Express Pipelines*, above, addresses closely related issues. This was the first case in which the Federal Court of Appeal considered the CEAA. The application for judicial review was considered by the Court of Appeal at first instance (see paras 6 and 7). Of particular relevance are paragraphs 13 and 14:

> [13] It was argued, and in this the applicants echoed the views of the dissenting panel member, that subsection 16(1) requires a sequential examination of the factors enumerated therein. In particular, it was said that the panel erred in not considering the possible environmental effects of the project before looking at any possible mitigating measures. Nothing in the statute supports such a view. Section 16 certainly does not say or imply that the listed factors must be considered sequentially while section 37 (as well as sections 20 and 23 which do not apply in this case) strongly suggests that mitigation measures and environmental effects must be considered together. In our view, logic and common sense point the same way: there can be no purpose whatever in considering purely hypothetical environmental effects when it is known and proposed that such effects can and will be mitigated by appropriate measures.

> [14] Finally, we were asked to find that the panel had improperly delegated some of its functions when it recommended that certain further studies and ongoing reports to the National Energy Board should be made before, during and after construction. This argument misconceives the panel's function which is simply one of information gathering and recommending. The panel's view that the evidence before it was adequate to allow it to complete that function "as early as is practicable in the planning stages ... and before irrevocable decisions are made" (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel's exercise is predictive and it is not surprising that the statute specifically envisages the possibility of "follow up" programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.

[351] The Federal Court of Appeal's decision in *Express Pipelines*, delivered orally from the bench, is brief. It does not provide a great deal of context regarding how the effects of the project under consideration and their potential mitigation were actually considered by the panel. Nor does it elaborate on the applicants' argument that "the panel had improperly delegated some of its functions when it recommended that certain further studies and ongoing reports to the National Energy Board should be made before, during and after construction." In my view, it is necessary to carefully consider the Court of Appeal's analysis, to avoid reading in principles that were not intended.

[352] In paragraph 13, the Court of Appeal found that the panel was not required to conduct "a sequential examination of the factors enumerated" in s. 16(1). In other words, it was not required to consider the adverse effects of the project first, their significance second, and possible mitigation third, though the Panel in the present matter stated that this is the best approach and the one it intended to follow (see EA Report at p. 39). Rather, the Court of Appeal stated,

"mitigation measures and environmental effects must be considered together," based on the language of the Act and the common sense conclusion that "there can be no purpose whatever in considering purely hypothetical environmental effects when it is known and proposed that such effects can and will be mitigated by appropriate measures" (emphasis added).

[353] In my view, this finding has most relevance in the present case to the question of whether the gaps in the bounding scenario relating to the expected releases of hazardous substances from the Project (in particular through liquid effluent and stormwater runoff) mean that the Panel did not reasonably consider the Project's effects in this regard – one of the three potential inadequacies being analyzed.

[354] In my view, the statement that mitigation measures and environmental effects "must be considered together" does not, at least in the case at hand, obviate the need to consider the potential effects at all. Rather, it is unnecessary to consider "purely hypothetical environmental effects when it is known and proposed that such effects can and will be mitigated by appropriate measures" (emphasis added).

[355] On the facts of this case, it is in my view not possible to know that the potential effects in question "*can and will* be mitigated" to below the level of significance (which the Court identified at paragraph 10 as the "principal criterion" set by the statute) without having some sense of what level of effect would be significant, which is a decision for the s. 37 decision-makers. Where there is no available standard or set of standards that can serve as a proxy for significance (and the Panel has not pointed to one in this case with respect to hazardous

substance releases), in my view, those decision-makers must be provided with information about the actual expected effects and the degree to which they will be mitigated. In some cases (as in *West Vancouver*), this analysis will be more qualitative, whereas other circumstances will permit and call for a more quantitative approach, as I would argue is the case here. In any case, where an effect is potentially significant, simply stating that an unknown level of effect will be mitigated to another unknown level is not sufficient to permit the s. 37 decision-makers to discharge their responsibilities.

[356] As for paragraph 14, it tells us two things. First, it is not inappropriate for a review panel to recommend that further studies be conducted and ongoing reports be made to a regulatory body during and after the construction of a project. This is not a surprising finding in any way.

[357] The second point is of more central significance to the present matter. It is that a "panel's view that the evidence before it was adequate to allow it to complete" its function of information gathering and recommending as set out in the statute "as early as is practicable" is "one with which [a court should] not lightly interfere." In my view, this point is fully addressed through the standard of review the Court has chosen to adopt in this matter: the Court will only interfere if and to the degree that the Panel's approach to some important aspect of its analysis was unreasonable. In my view, the Court's analysis in this case fully reflects and incorporates the principles stated in *Express Pipelines*.

Failure to Assess "Need" and "Alternatives" to the Project

[358] The Applicants say that the Panel's consideration of "need" is so fundamentally incomplete and lacking in information, evidence or analyses as not to comply with the Panel's duties under the CEAA and the Terms of Reference.

[359] The "need" issue is addressed in section 4.3 of the EA Report, and the Panel's conclusions are as follows:

> The Panel is of the view that the Ontario Ministry of Energy has explained the need for the Project and the rationale behind the Ontario Government direction to OPG. The Panel further notes that the Ontario Government posted the draft Supply Mix Directive to the Ontario Environmental Registry for a 45-day public review before Cabinet approved the final Directive in February 2011. Further, the Ontario Power Authority consulted the public in May and June 2011 on its draft Integrated Power System Plan and is expected to submit the plan to the Ontario Energy Board for public review later in 2011. In accordance with his authority granted under the Electricity Act, 1998 (O. Reg. 164/99), the Minister of Energy has directed the Ontario Energy Board to review the proposed Integrated Power System Plan at public hearings, no later than 12 months after the Ontario Power Authority submits it. The Panel believes that these public consultation opportunities are the proper venues for the public to express their views regarding Ontario energy policy.

[360] The Applicants submit that the provincial Minister's Directive does not in law amount to a proper analysis or demonstration of the "need" for the Project pursuant to the CEAA. They say that, if accepted by the Court, such an approach will allow the Panel to avoid its legal duty to fully consider the mandatory factors required by s. 16 of the CEAA in combination with the Terms of Reference, including "purpose" and "need." Moreover, they say that, as a matter of law, a provincial Minister or project proponent cannot constrain or bind the Panel in the exercise of its statutory responsibilities under federal law. Thus, the Applicants submit that the Panel

declined its jurisdiction by erroneously treating the Directive as dispositive of the "need" issue under the CEAA.

[361] Subsection 16(1)(e) of the CEAA requires the Panel to consider the following:

16. (1) Every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:	16. (1) L'examen préalable, l'étude approfondie, la médiation ou l'examen par une commission d'un projet portent notamment sur les éléments suivants :
[…]	[…]
(e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.	e) tout autre élément utile à l'examen préalable, à l'étude approfondie, à la médiation ou à l'examen par une commission, notamment la nécessité du projet et ses solutions de rechange, — dont l'autorité responsable ou, sauf dans le cas d'un examen préalable, le ministre, après consultation de celle-ci, peut exiger la prise en compte.

[362] In the present case, the Panel clearly considered "need" and decided to defer to the EIS Guidelines (which said that provincial energy policy was not within the Terms of Reference) and the process carried out by the Ontario Ministry of Energy.

[363] The Applicants appear to be of the view that the Panel was obliged to conduct a detailed analysis of its own on "need." Legal authority suggests otherwise. In *Sharp*, above, the Federal Court of Appeal said that "paragraph 16(1)(e) is not a back door means of re-empowering [the

Canadian Transportation Agency (CTA)] with economic regulatory control over the construction of railway lines" (para 28). The context was that Parliament had intentionally adopted a hands-off approach that left the decision of whether particular railway lines were needed primarily up to railway companies. Except where there was a serious conflict (e.g. the environmental impact of a proposed project was extremely high), the CTA had to try to reconcile its responsibilities under the CEAA with "Parliament's express deregulatory intention" under the relevant statutory scheme. In this case, the relevant contextual consideration is not a "deregulatory intention" of Parliament, but rather the constitutional division of powers. In my view, the principle stated by the Court in *Sharp* applies with even more force in this context. The Minister was careful to note that matters of Ontario energy policy were outside of the Panel's purview. CEAA is not a back-door means of empowering the Panel with economic regulatory power over Ontario energy policy. Rather, the Panel's primary duty was to determine whether the proposed Project would result in significant adverse environmental effects. Absent some indication that this mandate could not otherwise be fulfilled, the Panel was neither required nor entitled to engage in an in-depth analysis of the pros and cons of various means of meeting Ontario's energy demand. It was "entitled to base its decision on need and alternatives on what it was told" by the proponent and the Ontario Ministry of Energy (*Sharp*, above, at para 25).

[364] In other words, in the circumstances of this case, it was reasonable for the Panel to conclude that need had been decided as a matter of Ontario energy policy, which process had provided, or would provide, opportunities for the public, including the Applicants, to express their views.

[365] Similar considerations arise in relation to the Panel's treatment of "alternatives" which is found at section 4.4 of the Report.

[366] In dealing with this issue, the Panel requested OPG provide additional information on alternatives to the Project, and OPG produced a table and an Alternative Analysis which concluded that there were no reasonable alternatives to the Project that were both within its interest and control and consistent with "the direction and clarification provided by the Government of Ontario."

[367] The Panel also pointed out that the EIS Guidelines framed the way it was to approach this issue. It accepted the constraints preventing OPG from considering other forms of energy. Notwithstanding that "an assessment of provincial energy policy" was "not within the panel's terms of reference" and that "alternatives to the project need not include alternatives that are contrary to Ontario's formal plans and directives," (p. 42) the Panel nevertheless went on to assess and express concerns:

> The Ontario Ministry of Energy provided an overview of alternatives and considerations that led to the proposed supply mix in the Long-Term Energy Plan. In its final comments, the Ministry presented a summary of the need for a balanced supply mix and the options considered.
>
> The Panel understands the constraints preventing OPG from considering the development of other forms of energy. The Ontario Government Long-Term Energy Plan and Supply Mix Directive dictate the projects the proponent shall pursue. However, if at a later date the Ontario Government revises the current energy supply mix and reduces the nuclear baseload capacity, it would be possible to develop a different portfolio within the competence of OPG. While the Panel acknowledges the public consultation to date on the Ontario Government energy policy, it regrets the fact that the new Darlington Project is being evaluated before the

> Ontario Energy Board hearings on the Integrated Power System Plan are completed.
>
> The Panel also notes that the Long-Term Energy Plan and Supply Mix Directive were developed before the Fukushima Daiichi nuclear accident. Since this accident, more concerns have been raised about nuclear power generation globally. The Panel understands the challenges the Ontario Government faces as it proceeds with phasing out coal to reduce greenhouse gas emissions and permanently shutting down the Pickering Nuclear Generating Station. However, the Panel wishes to acknowledge the desire expressed by many participants for a re-examination of the Ontario energy alignment.

[368] Section 16(1)(e) gives the Minister discretion as to whether the need for and alternatives to the Project are to be considered at all in the EA. In my view, it is implicit that, should the Minister decide that these factors should be included, he or she has the discretion to determine the scope of their consideration.

[369] The Minister did not speak directly to this in the Agreement or the attached Terms of Reference. The list of the factors to be considered included the "Need for the Project" and "Alternatives to the Project" without qualification. However, the Minister did say in the EIS Guidelines that (at p. 17):

> **7.1 Purpose and Need for the Project**
>
> The proponent must clearly describe the need for the proposed new nuclear power plant. This description must define the problem or opportunity the project is intending to solve or satisfy and should establish the fundamental justification or rationale for the project.
>
> The proponent must describe the purpose of the project by defining what is to be achieved by carrying out the project.
>
> The "need for" and "purpose of" the project should be established from the perspective of the project proponent and provide the

> context for the consideration of alternatives in Sections 7.2 and 7.3 below.
>
> **7.2 Alternatives to the Project**
>
> An analysis of alternatives to the project must describe functionally different ways to meet the project's need and achieve the project's purpose from the perspective of the proponent. This section must therefore identify and discuss other technically and economically feasible methods of producing electricity other than the construction and operation of the OPG Darlington NNPP that are within the control and/or interests of OPG. As an assessment of provincial energy policy is not within the terms of reference of this joint review panel, the alternatives to the project need not include alternatives that are contrary to Ontario's formal plans or directives. However, the EIS must explain where this rationale has been applied to exclude consideration of possible alternatives to the project.
>
> [emphasis added]

It would have been preferable for the Minister to state these restrictions on the scope of the factors to be considered in the Agreement and Terms of Reference, as this was the most direct mechanism available to the Minister for this purpose.

[370] The scope of consideration of the mandatory factors in ss. 16(1)(a), (b) and (d) and 16(2)(b), (c) and (d) was to be determined by the Minister "when fixing the terms of reference of the mediation or review panel" (CEAA, s. 16(3)(b)). By contrast, paragraph 16(1)(e) is not specific about the mechanism by which the Minister indicates his or her decision about the inclusion of non-mandatory factors under that paragraph, stating only that a review panel shall include consideration of "any other matter relevant to the… assessment…, such as the need for the project and alternatives to the project, that the responsible authority or… the Minister after consulting with the responsible authority, may require to be considered" (CEAA, s. 16(1)(e)).

[371] Given the less specific wording of s. 16(1)(e), I accept that the Agreement and the EIS Guidelines should be read together for the purpose of determining whether and to what extent the "need for" and "alternatives to" the Project were to be considered in the EA. While these factors were included without qualification in the list of factors to be considered as set out in the Terms of Reference, the language of the EIS Guidelines imposes restrictions that were appropriately taken into account by the Panel.

[372] I also find, as the Respondents argue, that the Panel was entitled to come to the same conclusions on its own about the proper approach to considering these factors. In my view, the Panel was entitled to keep the constitutional division of powers and prior jurisprudence in mind when interpreting its mandate. The electricity supply mix in Ontario is a matter of provincial jurisdiction. A federal EA should not become an alternative forum for deciding that issue, or a back door means of economic regulation: *Sharp*, above, at para 28; *Grand Riverkeeper*, above at paras 53-54.

[373] It seems to me, then, that the Panel's analysis of "alternatives," as with "needs," was undertaken in accordance with the Terms of Reference and EIS Guidelines set out by the Federal Minister of the Environment and that, given these constraints, the Panel went as for as it could with its consideration of alternatives under subsection 16(1)(e) of the CEAA. I can see no reviewable error here.

Unlawful Delegation

[374] The Applicants say that, since the CEAA does not expressly empower review panels to delegate their s. 34 obligations, the Panel in this case did not fulfill its duties before reporting to the Minister and before recommending that certain matters should receive further attention by other bodies. The complaint is that the Panel went beyond permissible limited types of delegation and, instead, made recommendations intended to generate critically important information that would backfill significant evidentiary gaps. These are said to relate to the specific project design, baseline conditions, environmental effects, site development and layout and other key matters the Panel was legally obliged to assess, disclose, solicit public input on, and report upon pursuant to s. 34.

[375] This is, essentially, part of the Applicants' argument that the lack of a designated reactor technology in the proposed Project prevented a meaningful assessment under the CEAA and forced improper delegation to other agencies in the future.

[376] As the EA Report makes clear, the Panel itself endorses the Applicants' view of its duties under the CEAA. In discussing the analytical framework for the Report in section 4.1, the Panel tells us that it "applied a precautionary approach and considered the principles of sustainable development in its review." The Panel goes into considerable detail as to what the precautionary approach to assessment means and the "guiding principles for the application of precaution to science-based decision-making in areas of federal regulatory activity for the protection of health and safety and the environment and the conservation of natural resources" (EA Report at p. 38).

[377] The Panel specifically makes the following point about its approach to the Assessment of Environmental Effects in its conclusion to section 4.1.3 of the EA Report:

> The Panel is of the view that adaptive management, a systematic process for the continuous improvement of environmental management practices, should only be applied in cases where thresholds can be defined. Adaptive management should not be used to overcome a situation where there is a lack of scientific data or certainty.
>
> [emphasis added]

[378] I see nothing here that, in principle at least, is in conflict with the Panel's duties under s.34 or any other provision of the CEAA.

[379] These statements of principle by the Panel have to be considered in conjunction with its specific finding that, following the process of submissions and hearings required under the CEAA, it had the information and data required to complete the EA in accordance with the Act and the principles referred to in the Report and which I have noted above. The Panel does, however, explicitly link this finding to the existence of future licensing steps. At p.50 of the EA Report it says:

> The Panel notes that there is a licensing phase for operation and maintenance during which the proponent would be required to submit specific details. Because of this and in light of the data submitted, the Panel determined that for environmental assessment purposes it has sufficient information to determine the likelihood of significant adverse environmental effects of the Project.

As I have said previously, this was an expert, scientific panel and it tells us in its Report that it has the wherewithal to assess whether the necessary thresholds have been met in accordance with the precautionary approach to assessment. But it would appear that the Panel's conclusion on this

point was as much interpretation of the appropriateness of deferring certain matters to the CNSC as it was a scientific or factual determination about the sufficiency of the evidence before it.

[380] The Applicants have attempted to characterize the Report in particular ways and attack its approach conceptually. They say it does not assess a "project," that the bounding approach is incompatible with an EA under the CEAA, and that the Panel engaged in improper delegation in order to backfill information and data gaps that were an inevitable consequence of the Panel's failure to insist upon a specific reactor type as a prerequisite for a meaningful assessment.

[381] All of these issues are certainly arguable but, in the end, the Applicants are really saying that the Panel did not have the necessary information and other inputs to produce a meaningful EA in accordance with the Act. They are attacking the Panel's foundational finding on this point and they are asking the Court to disagree with the assessment of the expert Panel on a finding of scientific fact. I think it goes without saying that the Court must be very reluctant to interfere with such a finding.

[382] This does not mean, of course, that the Court simply accepts at face value the Panel's own statements about its methodology, its adherence to the precautionary approach, or its awareness of the dangers of adaptive management without the scientific data to establish the necessary thresholds. The Applicants have pointed to specific instances throughout the Report where they believe improper delegation was relied upon by the Panel. I have examined each instance in turn, and it seems to me that the Panel acknowledges the contingencies that a Project of this nature and duration necessarily throws up and that will require mitigation, follow-up, reliance upon

other bodies, and future assessment. But the necessary thresholds, and the scientific data and advice to support those thresholds are, generally speaking, there and allow the Panel to say that this Project is not likely to give rise to significant adverse environmental impacts. The only instances where this is not the case, in my view, and where improper delegation occurs are those instances I have listed above where I do not think thresholds are sufficiently specified and where the scientific data is not available to arrive at reasonable assessments.

[383] For the most part, however, the Panel's approach appears to me to be in accordance with the guidance of the Federal Court of Appeal in *Express Pipelines*, above:

> [14] Finally, we were asked to find that the panel had improperly delegated some of its functions when it recommended that certain further studies and ongoing reports to the National Energy Board should be made before, during and after construction. This argument misconceives the panel's function which is simply one of information gathering and recommending. The panel's view that the evidence before it was adequate to allow it to complete that function "as early as is practicable in the planning stages ... and before irrevocable decisions are made" (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel's exercise is predictive and it is not surprising that the statute specifically envisages the possibility of "follow up" programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.

[384] Except for the specific instances I have cited, the Panel's approach is to ensure that the necessary thresholds are there for a project of considerable magnitude and duration that, by its very nature, obliges the Panel to take into account and assess the scientific and regulatory safeguards that will be in place for each successive step. As the AGC points out, nuclear power facilities are subject to several different areas of regulatory oversight. Under the NSCA, a nuclear power plant is subject to a staged licensing process. OPG has to seek separate licenses

for the site preparation, construction, operation, decommissioning, and abandonment of the Project. At each stage, OPG will be required to supply additional information on the Project design specifications and the environmental effects of the Project. The CNSC will not issue a license unless it is of the opinion that OPG "will, in carrying out the activity, make adequate provision for the protection of the environment."

[385] In my view, this is not improper delegation or crystal-ball gazing. Other than for the exceptions I have already noted, it seems to me that the Panel's approach accords with the guidance from this Court in such cases as *Pembina Institute*, above, at paras 23 and 34.

Procedural Issues

[386] The Applicants contend that the Panel's failure to assess the Project in accordance with ss. 15(3), 16(1) and (2) and 34 of the CEAA was compounded by procedural errors in that the Panel refused to:

(a) extend the public comment period or the EIS;

(b) allow cross-examination on evidence or undertaking answers; and

(c) adjourn the public hearing so that missing information could be obtained, publicly disclosed and carefully assessed by the Panel.

[387] My review of the record confirms the factual background on these issues provided by OPG:

> 50. The Applicants wrote to the Panel requesting that OPG and CNSC staff be required to present evidence at the hearing under oath. Waterkeeper had made a similar request of the Agency, which was not accepted, prior to the establishment of the Panel.

> The Panel rejected the Applicants' requests in oral reasons delivered on the first day or the hearing. The Panel stated that it was not a court of law and had the discretion to review and accept evidence and information it considered appropriate. Neither *CEAA* not the *NSCA* required decision-makers to accept or reject evidence based on the formal rules of evidence applicable to a civil or criminal trial.
>
> 51. The Applicants CELA and Waterkeeper also requested that the Panel adjourn the hearing to allow for the collection of what they described as "information missing from the record." The Panel rejected this request in the same oral reasons. It indicated that if public hearings were only to be held once the Panel had obtained all the information it needed to make its recommendations, the assessment would never get to the hearing stage. The Panel stated that once it heard from all participants, it would review the evidence gathered and make a decision with regard to the sufficiency of the information provided.
>
> 52. The Panel also addressed in its ruling the Applicants' request that the hearing be adjourned because they did not have adequate time to deal with the EC-6 design. The Panel expressly rejected "the intervenors' assertions that they did not have sufficient time or notice to prepare." The Panel explained that it had provided direction on its process in both 2010 and March 2011, that its directions had made clear that the review process was technology neutral, and that if it determined that further information was required regarding EC-6 it would provide participants with an opportunity to file further submissions. After considering all of the submissions on the issue, the Panel concluded that it did not need to adjourn the proceeding as the EC-6 technology would be considered during the hearing.

[388] The Panel was obliged under its Terms of Reference to direct procedures in accordance with the CEAA, the NSCA, and the Panel Agreement. As the Supreme Court of Canada made clear in *Prassad*, above, at pp 568-569,

> We are dealing here with the powers of an administrative tribunal in relation to its procedures. As a general rule, these tribunals are considered to be masters in their own house. In the absence of specific rules laid down by statute or regulation, they control their own procedures subject to the proviso that they comply with the rules of fairness and, where they exercise judicial or quasi-judicial

> functions, the rules of natural justice. Adjournment of their proceedings is very much in their discretion.

[389] In the present case, the CEAA, the NSCA and the Panel Agreement do not stipulate any specific applicable rules for the hearing process that was conducted by the Panel. I can find nothing unreasonable or procedurally unfair about the way the Panel handled these issues.

Conclusions

[390] Given the Panel's acknowledgment that the PPE "is a departure from a more standard approach where the major components of a project are defined in advance of an environmental assessment," this was bound to be a highly controversial EA that strained the boundaries found in the CEAA. However, in my view, the record shows that, through input and the hearing process the Applicants and other like-minded participants were given ample opportunity to present their views of the inadequacies of the PPE as an approach to environmental assessment and the specific problems to which it gave rise for this particular Project. The arguments against the PPE approach and the failure of OPG to identify a specific reactor technology are fully acknowledged and discussed in the EA Report itself (see section 3.3.10 for example) and the Panel shows itself to be alive to the criticisms of the Applicants and others through the Report.

[391] This debate has been continued before the Court in this application. However the legal issues are characterized (no "project," failure to apply ss. 34, 16(1) and (2) of the CEAA etc.), the principal complaint is that the PPE approach did not allow for a meaningful EA as required by the CEAA. The Panel, however, makes a specific finding that the PPE approach used in this case does permit a meaningful assessment:

> The Panel accepts the use of a plant parameter envelope for environmental assessments purposes as an approach that allows the prediction of adverse environmental effects for a select group of reactor technologies.

[392] In the end, the Applicants are asking the Court to disagree with this finding. Many of the Applicants' objections to the approach do not strike me as unreasonable. However, the issue is not whether I agree or disagree with the Applicants or the Panel. Paragraph 47 of *Dunsmuir*, above, requires me to examine "justification, transparency and intelligibility within the decision-making process" and to decide "whether the decision falls within a range of possible, acceptable outcomes which are defensible in respect of the facts and law."

[393] It is certainly possible to disagree with both the Panel's conclusion that the PPE approach allows for a meaningful EA and with the PPE's application to the factors mandated by the CEAA, but I don't think it is possible to say that it falls outside of the range posited in *Dunsmuir*, above. And I do not think it is possible to say that the Panel's deployment of the PPE approach throughout its analysis, other than those instances I have cited above, was not in compliance with the CEAA, even though the nature and duration of this Project, and OPG's failure to designate a specific reactor technology undoubtedly caused the Panel to rely heavily upon mitigation, follow-ups, commitments and future actions and measures that will need to be considered and implemented as the Project advances through its various stages. In the end, however, the Panel was of the view that it could all be done in a way that would not be likely to cause adverse environmental and health impacts. Notwithstanding the strong concerns of the Applicants, other than those instances I have already pointed out, the Court cannot say that this conclusion was

unreasonable or that the references to future actions mean that a meaningful assessment of environmental impacts was not conducted in accordance with the Act.

[394] My specific findings of inadequacies and unreasonableness in the EA Report do not vitiate the whole Report, although it seems to me that some reconsideration and corrective action is required that will allow the Cabinet and s. 37 decision-makers to assess, or re-assess, the whole Project and make their decision accordingly. I have attempted to craft a remedy that will allow this to happen without discarding what appears to me to be the highly competent work accomplished by the Panel.

The Site Preparation License T-1723-12

The Dispute

[395] The Panel's dual mandate was to conduct the EA required under the CEAA and (acting as the Commission) to review OPG's application under the NSCA for a license to prepare the Darlington site.

[396] The background to this application involves the issue of whether the Panel conducted an EA in accordance with the CEAA (dealt with above under T-1572-11) as well as other allegations that, in issuing the License, the Panel failed to comply with certain mandatory requirements under the NSCA, and also breached procedural fairness by relying upon extraneous documents that were not part of the record.

[397] In conjunction with this application, the Applicants have also brought a motion to strike portions of the affidavit of Ms. Laurie Swami served by the Respondent OPG on the grounds that the portions of the affidavit to which the Applicants object are not connected to the licensing decision at issue in this application and are not relevant to whether the Panel afforded the Applicants procedural fairness.

Did the EA Comply with the CEAA?

[398] This ground of complaint involves a repetition of the grounds and issues I have already dealt with in T-1572-11 above. Consequently, I refer to my reasons given in T-1572-11 and adopt them for the purpose of review in this application T-1723-12.

[399] Because I have concluded that the EA was deficient in certain respects, the statutory prerequisites for the issuance of the Licence were not fulfilled, and the Licence is therefore invalid. However, the Applicants' other arguments attacking the Licence Decision fail for the reasons outlined below.

Did the CNSC Comply with the NSCA?

[400] The Applicants argue that, since OPG did not identify a specific reactor technology for the Project in its license application, that application was premature and, more importantly, it also meant that the CNSC lacked the jurisdiction to grant a license because the CNSC did not have sufficient information on matters prescribed by the *Class 1 Nuclear Facilities Regulations*.

[401] It seems to me that this argument is based upon a particular reading of the NSCA and the Regulations that cannot be sustained. This was an application for a Site Preparation License. I see nothing in the NSCA or the Regulations that require the reactor technology to be specifically identified before such a license can be issued. It may be, of course, that the failure to identify the reactor technology may prevent the Panel (Commission) from complying with the governing provisions, but that will be a question of fact in each case.

[402] Under s. 24(4) of the NSCA no license can be issued unless "in the opinion of the Commission" the applicant

> (b) will, in carrying on that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

[403] The "activity" in question here is clearly site preparation and not the Project as a whole, which will require further licenses in the future if decisions are made to proceed to construction, operation, abandonment and decommissioning.

[404] Hence, the issue here is whether, in the opinion of the Panel (Commission), OPG would make adequate provision for the protection of matters referred to in s. 24(4)(b) if OPG carries out site preparation.

[405] Throughout its licensing decision the Panel (Commission) makes it clear that there are certain matters, such as Safety Analysis, Physical Design, Fitness for Service, Radiation Protection, that are not within the scope of the LTPS and which will later be assessed once the

design of the reactor technology has been selected for construction and an application is made for a license to construct.

[406] This position is emphasized in the Panel's "conclusion on site evaluation" at para 102 of the Reasons for the Licence Decision:

> Based on the above information, the Commission is satisfied that, given the mitigation measures in place and to be in place, as well as the commitments made by OPG during the environmental assessment for the project, the site meets the requirements for a new nuclear power plant in accordance with RD-346. As such, the Commission concludes that the site is suitable for the construction of the proposed nuclear generating station. The Commission notes that the reactor design to be chosen by the Province of Ontario for construction at the site will be reviewed and assessed as part of an application for a Licence to Construct, and that the chosen reactor design must meet regulatory requirements for a Licence to Construct, including conformance with the PPE, in order to proceed to the construction phase.

[407] It is also made clear in the License itself, part 4 of which says that the "License Activity" is confined to "site preparation activities."

[408] The Applicants refer the Court to ss. 3(b) and (e) and 4(e) of the Regulations. Section 4(e) refers to "the activity to be licensed," which in this case is site preparation and not the construction of the reactor technology. A reading of the Reasons for the Licence Decision reveals that the Panel (Commission) clearly addressed the plans for the site and the hazardous substances that "may be on site while the activity to be licensed is carried on," in forming its opinion.

[409] Subsection 3(b) of the Regulations is somewhat of a departure from the language of the provisions that surround it, in that it speaks to a requirement for "plans showing the location, perimeter, areas, structures and systems of the nuclear facility", and not merely the activities to be authorized by the specific licence being issued. However, I think it is clear from the EA Report that this criterion was satisfied. That Report states that OPG developed "three separate model plant layout scenarios" depicting "the maximum extent of development from different planning perspectives for each of the reactor technologies and cooling technologies", and "provided updated and alternative site layouts" as the review proceeded (EA Report at p. 12). These plans were far from final, but given the stage of the Project and considering the statutory scheme as a whole, I think it was reasonable for the Panel (Commission) to accept them as meeting the requirements of s. 3(b) for the purposes of the Site Preparation Licence application. The Panel (Commission) found at paras 124-125 of its Reasons that the "physical design" of the nuclear facility itself was not within the scope of the Site Preparation Licence application, and the Applicants have not demonstrated that this was an unreasonable conclusion in view of the language of s. 3(b) of the Regulations, which requires only "plans showing the… structures and systems of the nuclear facility". The Panel (Commission) also stipulated at paragraph 15 of its Reasons for the Licence Decision that:

> … [I]n order to minimize the overall effects on the terrestrial and aquatic environments and maximize the opportunity for quality terrestrial habitat rehabilitation, OPG must perform a thorough evaluation of site layout opportunities before site preparation activities can begin.

Thus, I am satisfied that the Panel (Commission) complied with both the letter and the spirit of s. 3(b) of the Regulations in issuing the Site Preparation Licence.

[410] In my view, the Applicants have not demonstrated that, in the absence of a chosen reactor technology, it was unreasonable for the Panel (Commission) to form the opinion expressed in the Reasons for the Licence Decision or that, in doing so, the Panel (Commission) failed to address, or comply with, any provision of the NSCA or the Regulations.

Procedural Fairness

[411] The Applicants' complaint here is that, in reaching its licensing decision, the Panel (Commission) made reliance in its Reasons for the Licence Decision on the Fukushima Task Force Report and Action Plan, as well as a number of documents cited in the License Condition Handbook which existed only in draft form, or not at all, during the hearings. They say these documents were not part of the record so that, in accordance with the principles of procedural fairness outlined in *Baker*, above, and the doctrine of reasonable expectations, the Applicants were deprived of an opportunity to make submissions on issues that went into the License Decision.

[412] In this regard, it is necessary to understand how the Fukushima incident and the eventual Task Force Report and Action Plan entered the proceedings for the EA in T-1572-11 and the Site Preparation License application under review here. OPG has provided a summary which has not been challenged by the Applicants:

> 27. At the hearing the Panel requested that information be presented regarding the Fukushima Daiichi nuclear accident. This information included a presentation by CNSC staff on the implications of the accident (including the earthquake and tsunami) for the project, a presentation by the Geological Survey of Canada on earthquakes in Canada and a presentation by OPG on the seismic hazard assessment of the Project.

> 28. In its report the Panel recognized "that the Fukushima Daiichi nuclear accident did have an effect on the hearing. Many participants referred to the recent events in Japan with expressions of sympathy, and cited it as an example of what could happen if a beyond design basis accident were to occur at the Project site." Participants raised the Fukushima Daiichi nuclear accident in respect of a number of issues considered by the Panel, including accidents and malfunctions, emergency planning, costs and economic effects, seismicity/geology and alternatives to the Project. The Panel also considered the Fukushima Daiichi nuclear accident in its findings on the estimated costs of the Project and land use and development.
>
> 29. The Panel concluded in its report that conventional accidents or malfunctions were not likely to cause significant adverse environmental effects. However, it went on to conclude, "based on the views expressed by participants during the review and the concerns regarding accident scenarios such as the Fukushima Daiichi nuclear accident," that OPG should evaluate the cumulative effect of a common-cause severe accident scenario "that would include all of the nuclear generating reactors in the site study area." The Panel recommended that CNSC require OPG to perform such an evaluation prior to reactor construction.

[413] As regards the proceedings for the Site Preparation Licence, the Applicants point out that:

> 19. Despite the applicants' demonstrated interest in the Fukushima disaster and the relevance of the lessons that could be learned from it at the public hearings, the CNSC subsequently considered documents generated by an external CNSC Task Force after the close of public hearings. The CNSC's Reasons for Decision for issuing the Licence contains multiple references to the CNSC's Fukushima Task Force Report and Action Plan (at pp. 4, 13, 15, 18, 48). The Fukushima Task Force Report is dated October 2011 (approximately four months after the close of the public record by the Panel and six months after the end of the public hearing in relation to the project). The Action Plan is dated March 2, 2012 (approximately 9 months after the close of the public record by the Panel and 11 months after the public hearings concluded).
>
> 20. In response to the applicants' Rule 317 request for the Panel's record in this application for judicial review, counsel for the CNSC advised the applicants that the Panel's record for the Licence decision is identical to the Panel's record for the EA, and

> that no new documents would be disclosed or produced. That record does not include the Fukushima Task Force Report or Action Plan.
>
> 21. The Fukushima Task Force Report and Action Plan were not tendered as exhibits during the public hearings held by the Panel, and thus were not subject to notice or comment opportunities for the applicants or other interveners in the hearings.
>
> 22. Had the Fukushima Task Force Report and Action Plan been duly tendered as exhibits and intervenors given notice or comment opportunities in relation to them, the applicants would have voiced serious concerns regarding these documents and the Panel's reliance on them, including the continued inadequacy of the risk assessment performed by OPG and the fact that the Task Force Report and associated Action Plan could not fill the Project-specific information gaps left by the Panel's assessment.

[414] The Applicants have not developed their procedural fairness arguments based upon documents in the License Condition Handbook that were only in draft form or were not part of the proceedings. Hence, although the Panel (Commission) may have referred to such documentation, the Applicants have not demonstrated that it was a material basis for the Panel's Reasons in granting the Site Preparation Licence.

The Motion to Strike

[415] The Applicants seek to exclude portions of an affidavit filed by the Respondents describing the public consultation process in relation to the Fukushima Task Force Report and the CNSC Action Plan (Swami affidavit, paras 12-22), on the grounds that neither the Report nor the Action Plan were entered as evidence before the Panel (Commission) whose decision is the subject of judicial review in T-1723-12.

[416] Generally speaking, the only documentation of relevance in a judicial review application is the record that was before the decision-maker. However, there are certain well-recognized exceptions to this rule in applications that raise bias, jurisdiction, and procedural fairness. See *Tl'Azt'En First Nation v Joseph*, 2013 FC 767 at para 16; *International Relief Fund for the Afflicted and Needy (Canada) v Canada (Minister of National Revenue)*, 2013 FCA 178 at paras 9-10; *Assn of Universities and Colleges of Canada v Canadian Copyright Licensing Agency*, 2012 FCA 22 at paras 19-20.

[417] In the present case, the Applicants allege that it was procedurally unfair for the Panel (Commission) to refer to and rely upon the Task Force Report and Action Plan because they had no notice of these documents and no opportunity to comment upon them before the Panel rendered its licensing decision. In order to support this allegation, the Applicants have filed the Stensil and Cooper affidavits. Mr. Stensil says that the Task Force Report and Action Plan "were not subject to notice or current opportunities for Greenpeace or other interveners" (para 111). Ms. Cooper says that the Task Force Report and Action Plan were "not subject to notice or current opportunities for CELA or other interveners."

[418] It seems clear that the Task Force Report and Action Plan were not produced under Rule 317 as part of the record that was before the Panel (Commission) in the licensing proceedings and were not listed as exhibits. However, procedural fairness is concerned with substance, not form. One of the issues for the Court in the T-1723-12 application is whether the Task Force Report and Action Plan "were not subject to notice or current opportunities for the applicants or other interveners in the hearing" (para 2 of the Applicant's Memorandum of Fact and Law).

[419] The paragraphs of the Swami affidavit to which the Applicants object dealt with this very issue. They say that the Task Force Report and Action Plan were posted for comment, and outline the public consultation process in relation to them, which occurred between October 2011 and May 2012. This was after the Panel's (Commission's) public hearings for the purposes of both the EA and the Site Preparation Licence, but before the Licence Decision, which was issued August 17, 2012. The affidavit shows that two of the Applicants, Greenpeace and Lake Ontario Waterkeeper, provided written comments during that process, and that Greenpeace made a presentation to the CNSC at a meeting in May 2012 concerning the two documents.

[420] The Respondents argue that this public consultation process satisfied the requirements of procedural fairness in relation to the Fukushima Task Force Report and Action Plan for the purposes of the Site Preparation Licence application as well.

[421] The Applicants reply that the Respondents are blurring the distinction between the Panel who decided the Site Preparation Licence application and the CNSC at large, which conducted the public consultation on the Fukushima accident.

[422] The merits of the Respondents' argument based on the Swami affidavit remains to be considered below, but it was certainly a reasonable argument for them to make. Both processes were the work of the Commission, and the Applicants (or some of them) participated in both. Whether a distinction can be made between the licence proceedings and more general public consultation on Fukushima is the factual and legal question to be answered, and the Court

requires a factual record to answer it. Ms. Swami's evidence is directly relevant to that very issue and needs to be part of the review record.

[423] In short, the impugned portions of the Swami affidavit are directly relevant to the procedural fairness issue that the Applicants have placed before the Court in their T-1723-12 application and are admissible evidence.

Merits of the Procedural Fairness Issue

[424] The relevant rule of procedural fairness, as stated by Dickson CJ in *Kane v Board of Governors (University of British Columbia)*, [1980] 1 SCR 1105 at pages 1115-1116, is that "each party to a hearing is entitled to be informed of, and to make representations, with respect to evidence which affected the disposition of the case" (emphasis added) (see also *Pfizer Co v Canada (Deputy Minister of National Revenue, Customs and Excise)*, [1977] 1 SCR 456 at page 463).

[425] In my view, if the Panel had placed substantive reliance on the documents in question in their licensing decision, this may have amounted (depending on the nature of that reliance) to a breach of procedural fairness. This is because, while the Applicants had an opportunity to comment on those documents generally in a separate process, they did not have the opportunity to address the actual decision-makers – the members of the Panel (Commission) making the licensing decision – regarding their relevance and application to the Project itself. Indeed, it would appear that none of the members of the Panel were present for the CNSC's public hearing on those documents where Greenpeace presented. The Panel's own public hearings took place

before the draft Task Force Report and Action Plan were first released for public comment. It was in this context that Waterkeeper requested that the Project proposal be sent back to the Panel for reconsideration with specific reference to the Task Force Report.

[426] However, what is decisive here is that the Panel (Commission) placed no reliance on the Fukushima Task Force Report and Action Plan in coming to its Licence decision. Rather, it directed that future reports on the Project to the CNSC incorporate the findings of the Task Force report, and reiterated its recommendation from the EA report that any increased regulatory requirements resulting from the Task Force Report and Action Plan should be incorporated into the Project as early as possible.

[427] The Panel (Commission) makes five references to the Fukushima Task Force Report and Action Plan in its Reasons for the Licence Decision. They are as follows:

> 16. The Commission directs OPG to prepare a mid-term report on the conduct of the licensed activities and the implementation status of commitments made during the environmental assessment. This report should also take into account the findings of CNSC Fukushima Task Force.
>
> […]
>
> 58. The Commission is satisfied that the information presented by OPG meets the regulatory requirements for an application for a LTPS and the expectations set forth in RD-346. The Commission notes, however, that the EA Report raised the issue that lessons leaned from the 2011 Fukushima Daiichi nuclear accident would likely result in changes to regulatory requirements and suggested that any resulting increased regulatory requirements should be incorporated into the Project as early as possible. The Commission further notes that the CNSC has issued an action plan to address the lessons learned from the Fukushima Daiichi nuclear accident and reiterates the suggestion from the EA Report.

> […]
>
> 68. Furthermore, the Commission notes that analysis of low-probability events is underlined in the CNSC Fukushima Task Force Report as a means of identifying possible mitigating strategies.
>
> […]
>
> 84. The Commission notes that an Action Plan was prepared by the CNSC task force and subject to public consultations and a public meeting in May 2012. The Commission expects findings from the CNSC Fukushima Task Force report to be considered as part of the mid-term review for the LTPS.
>
> […]
>
> 235. The Commission accepts the proposed reporting requirements from CNSC staff, including the presentation of the CNSC's annual *CNSC Staff Integrated Safety Assessment of Canadian Nuclear Power Plants*. In addition, the Commission directs OPG and CNSC staff to prepare more detailed mid-term reports on the conduct of the licensed activities and the implementation status of commitments made during the environmental assessment, taking into account the findings of the CNSC Fukushima Task Force. The CNSC staff report should also include detailed information on the control of land use around the site over the operating life of the nuclear generating station, as well as on the environmental monitoring and follow-up program.

[428] Bearing in mind how the Fukushima incident entered the EA proceedings and the discussions and submissions that took place surrounding it, it is hardly surprising that the Panel felt it appropriate to refer to the incident, as well as the Task Force Report and Action Plan in its Reasons for the License Decision. However, what the Applicants have not demonstrated before me is how the Fukushima incident and the Task Force Report and Action Plan are made a material aspect of the Panel's site evaluation, which formed the basis for the issuance of the Licence and the opinion that the Panel (Commission) came to in accordance with s. 24(4) of the

NSCA and ss. 3 and 4 of the Regulations which the Applicants cite as the key provisions. The references to the Task Force Report and Action Plan referred to above are either passing notices of that report or directions that future reporting should take it into account. Clearly, the Panel (Commission) did not feel that the Fukushima incident or the Task Force Report and Action Plan were material to its decision to issue the Site Preparation Licence.

[429] In pointing out that the record before the Panel did not include the Fukushima Task Force Report or Action Plan, the Applicants are correct, but they are placing form ahead or substance. This omission could only be of significance if:

(a) The Panel relied upon these documents for its licensing decision; and

(b) If reliance was made, that the Applicants were, in fact, deprived of the opportunity to voice their "serious concerns regarding these documents" and the fact that the documents "could not fill the Project-specific information gaps left by the Panel's assessment."

[430] The Applicants have not made clear what might be included in their term "serious concerns," and they have not demonstrated how the Task Force Report and Action Plan were used by the Panel to fill information gaps left by the Panel's assessment. In my view, if the Panel (Commission) had relied upon the Task Force Report in a substantive way in coming to its conclusions on the License application, the Applicants might have a legitimate argument that they did not have an opportunity to address what these documents have to say about the Project and whether the License should be granted. However, in my view, the record shows that no such

reliance is demonstrated. In fact, it seems clear that no such reliance was made by the Panel (Commission).

[431] Procedural fairness attracts a correctness standard of review. For reasons given, I conclude that there was no breach of procedural fairness in this case.

JUDGMENT

THIS COURT'S JUDGMENT is that:

T-1572-11

1. The application in T-1572-11 is allowed in part;

2. The environmental assessment conducted by the Panel in relation to the Project failed to comply with the CEAA and the Agreement to Establish a Joint Review Panel for the New Nuclear Power Plant Project by Ontario Power Generation (Darlington) within the Municipality of Clarington, Ontario (including the Panel's Terms of Reference) dated January 2009 (Agreement) to the extent set out in the reasons to this judgment. In brief, the failure to comply occurred in three areas as set out more fully in the reasons:

   (a) Gaps in the bounding scenario regarding hazardous substance emissions and on-site chemical inventories;

   (b) Consideration of spent nuclear fuel;

   (c) Deferral of the analysis of a severe common cause accident.

3. The EA Report shall not be quashed and set aside in its entirety, but shall be returned to the Panel (or a duly constituted panel) for further consideration

and determination of the specific issues set out above and in the reasons to this judgment, and any consequential matters arising from that reconsideration that the Panel (or a duly constituted panel) considers necessary;

4. Until such time as the Panel (or a duly constituted Panel) has completed its work of reconsideration and determination in accordance with 3 above, the Governor in Council has no jurisdiction under the CEAA to approve the response of any Responsible Authority to the Panel's Report, and the CNSC, the Department of Fisheries and Oceans (DFO) and Transport Canada have no jurisdiction to issue any authorizations or take any other actions which would enable the Project to proceed, in whole or in part;

5. Until such time as the Panel (or a duly constituted panel) has completed its work of reconsideration and determination as set out above, the CNSC, the Minister of Fisheries and Oceans, and the Minister of Transport, or any other agents, servants and officials, shall not issue any licences, permits, certificates, or statutory authorizations which would permit the Project to be carried out, in whole or in part;

T-1723-12

6. The Applicant's motion to strike in T-1723-12 is dismissed;

7. The Applicant's application in T-1723-12 is allowed on the sole ground that, as matters now stand, the EA Report has yet to fully comply with the CEAA

with respect to the specific issues set out in my reasons and judgment in T-1572-11. This means that:

(a) The CNSC's issuance of the License is invalid and unlawful due to non-compliance with the CEAA;

(b) The CNSC has no jurisdiction to issue the Licence until such time as the CEAA is fully complied with as directed by my reasons and judgment in T-1572-11;

(c) The Licence issued to OPG by the CNSC on August 17, 2012 is quashed and set aside.

Costs and General

8. The parties in both T-1572-11 and T-1723-12 are at liberty to address the Court on the issue of costs in both applications, and in relation to the Applicant's motion to strike in T-1723-12;

9. A copy of this judgment and reasons will be placed on file in both T-1572-11 and T-1723-12.

"James Russell"

Judge

FEDERAL COURT

SOLICITORS OF RECORD

DOCKET:	T-1572-11
STYLE OF CAUSE:	GREENPEACE CANADA ET AL v ATTORNEY GENERAL OF CANADA ET AL
AND DOCKET:	T-1723-12
STYLE OF CAUSE:	GREENPEACE CANADA ET AL v ATTORNEY GENERAL OF CANADA ET AL
PLACE OF HEARING:	TORONTO, ONTARIO
DATE OF HEARING:	NOVEMBER 12-13, 2013
REASONS FOR JUDGMENT AND JUDGMENT:	RUSSELL J.
DATED:	MAY 14, 2014

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Mr. John Laskin Mr. Alexander Smith Mr. James Gotowiec	FOR THE RESPONDENT ONTARIO POWER GENERATION

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