Inverhuron & District Ratepayers Ass. v. Canada (Minister of The Environment), 2001 FCA 203 (CanLII)

Date: 2001-06-20
Docket: A-427-00
Parallel citations: 206 FTR 318
URL: http://www.canlii.org/en/ca/fca/doc/2001/2001fca203/2001fca203.html
Noteup: Search for decisions citing this decision

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CORAM: STONE J.A.

STRAYER J.A.

SEXTON J.A.

BETWEEN:

INVERHURON & DISTRICT RATEPAYERS' ASSOCIATION

Appellant

- and -

THE MINISTER OF THE ENVIRONMENT, THE MINISTER OF FISHERIES AND OCEANS and THE ATOMIC ENERGY CONTROL BOARD and ONTARIO POWER GENERATION INCORPORATED

Respondents

Heard at Toronto, Ontario, Wednesday and Thursday, May 16-17, 2001

JUDGMENT delivered at Ottawa, Ontario, Wednesday, June 20, 2001

REASONS FOR JUDGMENT BY: SEXTON J.A.

CONCURRED IN BY: STONE J.A.

STRAYER J.A.

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REASONS FOR JUDGMENT

SEXTON J.A.

This is an appeal from an order of the Trial Division, dismissing an application for judicial review of the Minister of the Environment's (the "Minister's") decision that a project to develop a dry storage facility for used nuclear fuel at the Bruce Nuclear Power Facility was not likely to cause significant adverse environmental effects.

FACTS

The Bruce Nuclear Power Development (BNPD) is located on the Bruce Peninsula, on the south-east shore of Lake Huron. Among its facilities are the Bruce "A" and Bruce "B" generating stations, each consisting of 4 CANDU, heavy water nuclear reactors. These reactors are fuelled by bundles of fuel elements - tubes which contain natural uranium oxide in sintered pellet form. The fuel bundles weigh approximately 25 kg. Each reactor core contains thousands of fuel bundles at a time.

A fuel bundle has a useful life-span of approximately 18 months. After this time, it no longer contributes efficiently to the reactor's heat-producing chain reaction and is, therefore, removed from the reactor. The used fuel bundle continues to emit both heat and harmful ionizing radiation. It must be stored in a manner that allows for dissipation of its thermal energy and attenuation of its radiation fields. For this reason, used fuel bundles are initially stored under water. The existing used fuel storage facilities at each of the Bruce generating stations consist of two water-filled fuel bays where used fuel bundles are stored on trays.

Once a used fuel bundle has spent a minimum of six years in underwater storage, it can be safely stored in a "dry" storage facility, enclosed in a shielded container made of steel and high density reinforced concrete. At present, Canada has no permanent storage site for radioactive waste. Thus, all used fuel bundles from the Bruce reactors continue to be stored in the existing, "interim," "wet" facilities.

In early 1996, as these facilities began to approach their maximum capacity without a permanent storage solution in sight, Ontario Hydro,[1] the owner and operator of the Bruce generating stations, commenced a project to design, construct, operate (and eventually decommission) a dry storage system to provide additional on-site "interim" storage capacity for up to 744,000 used fuel bundles. Such a facility was subject to licencing by the Atomic Energy Control Board (AECB) under the *Atomic Energy Control Act*.[2]

Under the terms of the *Canadian Environmental Assessment Act* ("*CEAA*," the "*Act*"),[3] the AECB was required to ensure that an environmental assessment (EA) was "conducted as early as is practicable in the planning stages of the project,"[4] and, in any event, prior to issuing a licence. The Board, as it was permitted to do, delegated much of the preparation of the assessment to Ontario Hydro.[5] However, it remained closely involved in the assessment process, providing direction as to the type of assessment required (a comprehensive study[6]), clarifying the scope of the project to be assessed, and identifying information gaps in the submissions made to it by Ontario Hydro.

Much of the EA was conducted early in the planning stages of the project, when a final system design concept had yet to be decided upon. As a result, the main component of Ontario Hydro's EA report, which was submitted to the AECB in December, 1997, was based upon a reference design. A very detailed assessment of the environmental effects of this design was conducted.

The following system comprised the reference design:

1. ***"Dry" transfer of used fuel bundles from fuel bays into Bruce Dry Storage Container (BDSC-600).*** The transfer would be carried out by remote control, with used fuel bundles that had been stored for at least ten years lifted from a storage bay and placed in a container designed specifically for the project. The container would hold 600 bundles stacked in the trays in which they had been stored underwater;

2. ***Sealing, drying and leak testing of loaded container at generating station site.*** The container would be welded shut and the interior vacuum dried through a valve. The integrity of the sealed container would be tested and protective layers of epoxy and urethane paint applied to the exterior;

3. ***Transportation of container to dry storage facility.*** The transfer would be carried out by a purpose-built vehicle, over existing roads to a storage facility located between 3 and 4.5 km from the generating stations; and

4. ***Placement of container on prepared outdoor pad at storage facility***. The site would have an area of 4.5 ha and be surrounded by a security fence equipped with cameras and radiation monitoring equipment. The site was located 750 m from the nearest public access point to BNPD and 2.5 km from the nearest public residence.

The December, 1997 report, noting that system design studies were ongoing, also considered a number of possible alternatives to the reference design. These included:

1. ***Different types of dry storage containers.*** One of the three additional container designs considered was one already in use at the Pickering Nuclear Generating Station which holds 384 fuel bundles in four "modules" - the PDSC-384;

2. ***"Wet" transfer of used fuel bundles.*** The underwater transfer of used fuel bundles into a dry storage container, followed by exterior decontamination of the container. Depending upon the container, the process might also include transfer of used fuel bundles from storage trays to specially-designed modules which fit in the container; and

3. ***Locating the "common services" (sealing, drying, testing etc.) at the dry storage facility.*** Filled containers would be clamped shut at the generating station, transported to the dry storage facility and sealed and tested there.

The report comprised some 164 pages, excluding lengthy appendices. It contained a detailed description of the existing environment at the site that included consideration of the atmospheric, geophysical and aquatic environments, the local flora and fauna and the radiation effects resulting from on-going nuclear generating operations. Working from this baseline, the report went on to conduct a detailed assessment of potential environmental effects of the proposed project. Central to this assessment was a 25 page section (supported by a 24 page appendix), entitled "Radiological Environmental and Safety Assessment," which considered the radiological effects of the project upon members of the public as a result of both normal operations of the reference design and

a number of accident scenarios. These scenarios included the dropping of a container during loading or transport resulting in exposure of all 600 fuel elements to the atmosphere and containment failure as a result of such hazards as earthquakes, tornadoes (and tornado-generated missiles), fires and explosions and aircraft crashes into the storage facility.

Using computer simulation programs produced by the United States Department of Energy's Oak Ridge National Laboratory and validated for use in studying CANDU reactor used fuel bundles, the report estimated the maximum annual effective radiation dose received from the facility by a member of the public. The calculations were carried out using very conservative assumptions. In calculating the radioactivity of the used fuel bundles, it was assumed that they would all be of the minimum "age" of ten years and, therefore, more radioactive than the actual bundles stored whose anticipated age was between 15 and 25 years. Similarly, the shielding effect of the concrete container walls was conservatively assessed despite experience with the Pickering Dry Storage Facility showing that the likely dose rates at the container surface would be less than those calculated by a factor of 3 or 4. Finally, the annual dose rates were calculated for a member of the public who would remain continuously at the closest public point of approach to the storage site.

Based upon these assumptions, the report concluded that the maximum effective radiation dose received by a member of the public (remaining continuously at the closest point of approach) would be 4.7 microsieverts (µSv - 4.7 millionths of a sievert) per year.[7] The predicted maximum dose received by a member of the public under any accident scenario was less than 12 µSv.

To place these figures into context, the average resident of Ontario receives an annual radiation dose of approximately 2,000-3,000 µSv per year from natural, "background" radiation sources such as ordinary rocks and soil and cosmic rays from the sun. The maximum annual effective dose to which a member of the public can be exposed on top of this natural radiation and medical radiation (such as diagnostic x-rays) is currently set by regulation at 1,000 µSv per year. At the time that the EA was conducted it was 5,000 µSv per year. By any of these standards, the maximum doses predicted by Ontario Hydro's conservative calculations are minuscule.

An additional section of the report considered the potential environmental implications of possible design changes within the range of alternatives being considered. Based upon a comparison to the reference design, the report concluded that the radiological effects of the project would not likely be significantly different if alternative designs were employed.

The report concluded that neither the reference design, nor any of the alternatives under consideration would produce radiological effects that approached the level of significance represented by the regulatory dosage limits. Its overall conclusion, based upon assessment of all potential environmental effects was the same - the project was unlikely to cause significant adverse environmental effects.

In July, 1998, Ontario Hydro submitted an addendum to its December, 1997 report. The purpose of the addendum was "to update the AECB and other stakeholders regarding project studies and consultation processes initiated or continued since the EA submission as well as to respond to comments on the EA received during the AECB/inter-governmental review process to date." The bulk of the submission was a detailed assessment of the cumulative environmental effects of the project. The addendum supported the conclusion of the December, 1997 report that the project was not likely to cause significant environmental effects.

Following submission of the December, 1997 report to the AECB, Ontario Hydro embarked upon a study to develop the design of the dry storage system. This design process was conducted in parallel with and informed the preparation of the addendum and other, further steps in the EA process.[8] The final system design developed as a result of the study differed from the reference design in a number of respects:

1. The dry storage container would be identical to that employed atthe Pickering Nuclear Generating Station.

2. The used fuel bundles would be "wet" transferred to the storage containers in a third small underwater storage bay. Exterior decontamination of the container would take place in the bay.

3. Final sealing, drying and testing of the containers would take place at the dry storage facility. The containers would be temporarily clamped for transportation from the generating station to the storage site.

4. The sealed containers would be stored in an indoor facility instead of outdoors.

These differences, however, were all within the range of possible alternatives discussed and considered in the December, 1997 report.

The AECB provided copies of Ontario Hydro's submissions to a number of federal departments whose specialized expertise touched upon various aspects of the assessment. All departments indicated their satisfaction with the assessments and their conclusions.

On September 28, 1998, the AECB, as responsible authority, submitted the Comprehensive Study Report, consisting of the December, 1997 report, the July, 1998 addendum, some supplementary material and a short summary report, to the Minister of the Environment and to the Canadian Environmental Assessment Agency (the "Agency"). In its summary, the Board indicated its agreement with the conclusions of the Ontario Hydro assessment.

The Agency, in accordance with s. 22 of *CEAA*, provided public notice of the report and afforded interested parties with an opportunity to review and comment on it. Among the organizations and individuals expressing support for the report and its conclusions were the governments of most of the BNPD's neighbouring municipalities - the Village of Paisley, the Towns of Kincardine, Southampton, and Port Elgin, the Townships of Bruce, Huron, Kincardine and Saugeen and the County of Bruce.

The appellant association, a group of families and individuals who live close to the BNPD, also took the opportunity to make submissions to the Minister. These took the form of a 22 page letter, dated November 20, 1998, supported by numerous appendices. The submissions were not directed at any particular system design. They focussed on the purported failures of the EA reports to address the radiological impact of the project. In essence, the appellant submitted that there were uncertainties regarding these factors that made it impossible to conclude that the project was not likely to cause significant adverse environmental effects. It asked the Minister to submit the project to an independent review panel or mediator in accordance with s. 23 of the *Act*.

The AECB prepared a response to the public submissions, with particular attention to the submissions of the appellant and another interested group. It was assisted by analyses of the public comments provided by various specialist government departments including the Radiation Protection Branch of Health Canada. On March 8, 1999, the AECB provided the Agency with its response. It made extensive reference to the demonstrated radiation protection provided by the Pickering-type container chosen for the final system design. It re-iterated its previous conclusion that:

... all potentially significant direct and cumulative environmental effects of the proposed project have been adequately identified and addressed.

On March 31, 1999, the Agency recommended to the Minister that she conclude that the project was not likely to cause significant adverse environmental effects. In doing so, it provided the Minister with a summary of the comments submitted by members of the public and the AECB's response to them. It also provided her with its own analysis:

Following a review of the comprehensive study report, public comments received and the response to those comments by the responsible authority and expert departments, the Agency agrees with the views of the responsible authority and expert departments, that the project is not likely to cause significant environmental effects if the mitigation measures and the monitoring program described in the report are implemented.

The Agency also concludes that federal departments have been consulted and that means to address their concerns have been incorporated into the report or supporting documentation ...

The Minister accepted the recommendation. On April 14, 1999, she decided that the project was not likely to cause significant adverse environmental effects and referred the project back to the AECB so that it could proceed with licencing action. In so doing, she recommended that the Board design and implement a follow-up program to verify the validity of the EA's predictions of environmental effects and indicated that the Agency would be requesting, on her behalf, information developed by such a program.

The appellant sought judicial review of the Minister's decision.

DECISION APPEALED FROM

The application was dismissed with costs. The Applications Judge held that the scope of judicial review of the Minister's decision was narrow, stating that the extent to which factors are considered, the weight given to the various factors in the overall assessment of environmental effects and the methodology used in conducting the assessment were all matters to be left to those undertaking the study. He went on to point out that the Court's function on judicial review was not to serve as a forum in which to debate environmental science but rather to determine if the assessment was done according to the law.

The Judge below rejected the appellant's contention that the Minister's decision had been based upon an irrelevant factor - that being an EA report that assessed the reference design instead of the actual design chosen. He held that alternative design elements, including all of those incorporated in the final design had been assessed and that the consideration of various factors by comparison of design alternatives to the reference design was not an inappropriate method of assessment.

Finally, the Applications Judge reviewed the factors that the *Act* required to be considered and held that each of them had, in fact, been considered with reference to the final design. While he illustrated the extent of the consideration by quoting extracts of the tables of contents of various reports, his reasons demonstrate that his finding was based upon a thorough review of the evidence before him.

The Court rejected the appellant's complaint that the design chosen was more environmentally damaging than the reference design, pointing out that the Act does not require the selection of the alternative with the lowest risk but rather that the alternative chosen not be likely to cause significant adverse environmental effects.

RELEVANT LEGISLATION

Canadian Environmental Assessment Act[9]

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 :
(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;	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) the significance of the effects referred to in paragraph (a);	b) l'importance des effets visés à l'alinéa a);
(c) comments from the public that are received in accordance with this Act and the regulations;	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

(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.

(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:

(a) the purpose of the project;

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

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

(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.

21. Where a project is described in the comprehensive study list, the responsible authority shall

(a) ensure that a comprehensive study is conducted, and a comprehensive study report is prepared and provided to the Minister and the Agency ...

23. The Minister shall take one of the following courses of action in respect of a project after taking into consideration the comprehensive study report and any comments filed pursuant to subsection 22 (2):

(a) subject to subparagraph (b)(iii), where, taking into account the implementation of any appropriate mitigation measures,

(i) the project is not likely to cause significant adverse environmental effects, or

(ii) the project is likely to cause significant adverse environmental effects that cannot be justified in the circumstances,

the Minister shall refer the project back to the responsible authority for action to be taken under section 37; or

(b) where,

(i) it is uncertain whether the project, taking into account the implementation of any appropriate mitigation measures, is likely to cause significant adverse environmental effects,

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 exiger la prise en compte.

(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) les raisons d'être du projet;

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

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

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.

21. Dans le cas où le projet est visé dans la liste d'étude approfondie, l'autorité responsable a le choix_:

a) de veiller à ce que soit effectuée une étude approfondie et à ce que soit présenté au ministre et à l'Agence un rapport de cette étude;

23. Après avoir pris en compte le rapport d'étude approfondie et les observations qui ont été présentées en vertu du paragraphe 22(2), le ministre_:

a) renvoie le projet à l'autorité responsable pour une décision aux termes de l'article 37, si sous réserve du sous-alinéa b)(iii) et compte tenu de l'application des mesures d'atténuation indiquées, la réalisation du projet, selon le cas_:

(i) n'est pas susceptible d'entraîner des effets environnementaux négatifs importants,

(ii) est susceptible d'entraîner des effets environnementaux négatifs importants qui ne peuvent être justifiés dans les circonstances;

b) fait procéder à une médiation ou à un examen par une commission conformément à l'article 29 dans chacun des cas suivants_:

(i) il n'est pas clair, compte tenu de l'application des mesures d'atténuation indiquées, que le projet soit susceptible

(ii) the project, taking into account the implementation of any appropriate mitigation measures, is likely to cause significant adverse environmental effects and subparagraph (a)(ii) does not apply, or

(iii) public concerns warrant a reference to a mediator or a review panel,

the Minister shall refer the project to a mediator or a review panel in accordance with section 29.

d'entraîner des effets environnementaux négatifs importants,

(ii) que la réalisation du projet, compte tenu de l'application des mesures d'atténuation indiquées, est susceptible d'entraîner des effets environnementaux négatifs importants et que le sous-alinéa a)(ii) ne s'applique pas,

(iii) les préoccupations du public le justifient.

37. (1) Subject to subsection (1.1), the responsible authority shall take one of the following courses of action in respect of a project after taking into consideration the report submitted by a mediator or a review panel or, in the case of a project referred back to the responsible authority pursuant to paragraph 23(a), the comprehensive study report:

(a) where, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate,

(i) the project is not likely to cause significant adverse environmental effects, or

(ii) the project is likely to cause significant adverse environmental effects that can be justified in the circumstances,

the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part and shall ensure that those mitigation measures are implemented; ...

37. (1) Sous réserve du paragraphe (1.1), l'autorité responsable, après avoir pris en compte le rapport du médiateur ou de la commission ou si le ministre, à la suite du rapport d'étude approfondie, lui demande de prendre une décision aux termes de l'alinéa 23a), prend l'une des décisions suivantes_:

a) si, compte tenu de l'application des mesures d'atténuation qu'elle estime indiquées, la réalisation du projet n'est pas susceptible d'entraîner des effets environnementaux négatifs importants ou est susceptible d'en entraîner qui sont justifiables dans les circonstances, exercer ses attributions afin de permettre la mise en oeuvre totale ou partielle du projet et veiller à l'application de ces mesures d'atténuation;

ISSUES

The following issues arise in this appeal:

1. What is the appropriate standard of review of the decision of the Minister;

2. Was the Minister's decision reasonable; and

3. If the Minister's decision was not reasonable, what is the appropriate remedy.

ANALYSIS

Issue 1: Standard of Review

In the recent decision in *Bow Valley Naturalists Society* v. *Canada (Minster of Canadian Heritage)*,[10] this Court considered the standard of review to be applied to a decision of a responsible authority upon receipt of a screening level environmental assessment. Applying the pragmatic and functional approach most recently propounded by the Supreme Court in *Pushpanathan* v. *Canada (Minister of Citizenship and Immigration)*,[11] Linden J.A., writing for a unanimous panel, held that the appropriate standard was reasonableness *simpliciter*.

All of the parties before us supported the extension of this standard of review to the Minister's decision upon receipt of a comprehensive study report. Each party, however, urged the Court to adopt different approaches to the application of the reasonableness standard.

The appellant, looking to statutory *indicia*, specifically the purposes clause of the *Act*, asserted that a reasonable decision is one in which the decision-maker gives careful consideration to the environmental effects of a project. It argued that this Court has a duty to undertake a "significant search" to determine whether or not the EA and its associated documents provided the Minister with a reasonable basis for concluding that the radiological impact of the final design was not likely to cause significant adverse environmental effects.

The respondents, on the other hand, point out that the Court's ruling on the standard of review in *Bow Valley Naturalists* case was based in part upon the fact that the responsible authority making the decision in that case had a minimal level of expertise in administering the *Act*. While they take no direct issue with the reasonableness standard, all of the respondents suggest that a more deferential standard of review might be appropriate in reviewing the Minister's decision, given the expert advice that she received.

This Court has recognized that policy concerns militate in favour of a more deferential standard of review. The environmental assessment process is already a long and arduous one, both for proponents and opponents of a project. To turn the reviewing Court into an "academy of science" - to use a phrase coined by my colleague Strayer J. (as he then was) in

Vancouver Island Peace Society v. *Canada*[12] - would be both inefficient and contrary to the scheme of the *Act*. Thus, in *Bow Valley Naturalists*, Linden J.A. had the following to say regarding the scope of judicial review of a decision taken upon receipt of an environmental assessment:

The Courtmust ensure that the steps in the *Act* are followed, but it must defer to the responsible authorities in their substantive determinations as to scope of the project, the extent of the screening and the assessment of the cumulative effects in the light of the mitigating factors proposed. It is not for the Judges to decide what projects are to be authorized, but, as long as they follow the statutory process, it is for the responsible authorities.[13]

I find this approach persuasive. In the present case, there is no question that special expertise resided in the Atomic Energy Control Board, the government departments who commented upon various aspects of the EA report and the public comments made in response to it and in the Agency which made a recommendation to the Minister. This Court should show deference to them.

This does not mean, however, that the Court's approach to reviewing the Minister's decision ought to be so deferential as to exclude all inquiry into the substantive adequacy of the environmental assessment. To adopt this approach would risk turning the right to judicial review of her decision into a hollow one.

In the recent decision of *Athabasca Chipewyan First Nation* v. *British Columbia Hydro & Power Authority*[14] this Court reviewed a decision of the National Energy Board, in a non-*CEAA* context, that an exportation of electricity would not cause significant adverse environmental effects. Rothstein J.A., on behalf of a unanimous panel, held that the appropriate inquiry in reviewing the decision on a reasonableness standard was whether the Board, in making its decision, had before it information from which it could reasonably reach its conclusion.

In my opinion, Rothstein J.A.'s approach is equally applicable to the decision made in the case at bar. A standard of review of reasonableness *simpliciter* requires that the Minister have a reasonable basis for arriving at her decision. In conducting its review, the Court should consider all of the material available to the Minister and draw a conclusion. Such a conclusion can be drawn without the Court becoming an "academy of science". The Court is not required to agree with the Minister's decision. It must merely be able to perceive a rational basis for it.

Issue 2: Was the Minister's Decision Reasonable?

The appellant made a number of interrelated submissions on this issue in both written and oral argument. The submissions dealt with issues of statutory interpretation and fact, as well as the quality of the assessment upon which the Minister based her decision. The sole focus of the submissions was upon the radiological effects of the project.

Underlying all of the appellant's submissions was its assertion that the scheme of *CEAA* mandates a presumption that a project, such as the one at issue before us, that is of a type for which a comprehensive study is required is likely to have significant adverse environmental effects. Thus, in its view, the Minister cannot conclude that a project is not likely to cause significant adverse environmental effects unless the comprehensive study report upon which that decision is based contains sufficient evidence to displace the statutory presumption.

The appellant claims that the presumption flows from paragraph 59(d) of the *Act*, which empowers the Minister to promulgate the *Comprehensive Study List Regulations*:[15]

59. The Governor in Council may make regulations (d) prescribing any project or class of projects for which a comprehensive study is required where the Governor in Council is satisfied that the project or any project within that class is likely to have significant adverse environmental effects;	59. Le gouverneur en conseil peut, par règlement_: d) désigner des projets ou des catégories de projets susceptibles, selon lui, d'entraîner des effets environnementaux négatifs importants et pour lesquels une étude environnementale approfondie est obligatoire;

In my opinion, the above-quoted provision is properly interpreted as doing nothing more than creating a power to make regulations. Although it prescribes the basis upon which the Governor in Council may require the completion of a comprehensive study report, I do not believe that it can be taken as altering the provisions of s. 23 of the *Act,* the provision under which the Minister made the decision impugned in the present proceeding. Section 23 simply provides that the Minister, after taking into consideration the comprehensive study report and any other comments, shall take one of several courses of action. It allows her to conclude, on the basis of those materials, that a project is not likely to cause significant adverse environmental effects. Section 23 contains no indication that the Minister, in arriving at her decision, is required to have regard to any statutory presumption. In my view, if such a presumption were to exist, it would have to be made explicit in the decision-making provision itself, not in a regulation-making provision.

While the appellant is unable to rely upon any statutory presumption in attacking the Minister's decision, its remaining submissions may also be founded on the alternative basis that the materials placed before the Minister did not, on their own, provide her with a reasonable basis for concluding that the project was not likely to cause significant adverse environmental effects.

I will proceed with my analysis of the appellant's remaining submissions by moving from the broadest to the most specific. Each of these arguments is based upon several assertions of fact. The first is that used fuel bundles produced by the Bruce reactors are "twice as toxic" as that produced by the Pickering reactors (meaning that any analysis based upon experience with dry storage at Pickering is suspect). The second is that the final dry storage container design selected (the "Pickering" container) provides less effective shielding of radiation than the container provided for in the reference design. The third is that the wet transfer process will contaminate container surfaces due to their exposure to irradiated water. In the appellant's view, these alleged facts all point to the conclusion that the final design will expose members of the public to higher radiation doses than those predicted by the assessment of the reference design.

It is important to note that none of the alleged facts appears to have been commented upon by the Applications Judge. The validity of each is forcefully disputed by the respondents.

In my opinion, it is not for this Court to delve into the scientific complexities associated with determining the validity of the appellant's factual assertions. To do so would be contrary to the long-accepted principle discussed by my colleague Strayer J. in *Vancouver Island Peace Society*:

It is not the role of the Court in these proceedings to become an academy of science to arbitrate conflicting scientific predictions ... Whether society would be well served by the Court performing either of these roles, which I gravely doubt, they are not the roles conferred upon it in the exercise of judicial review under section 18 of the Federal Court Act.[16]

For the sole purpose of the following analysis, however, I will proceed on the assumption that the alleged facts have been established. As will be seen, the validity of the alleged facts has no impact upon my conclusions.

The broadest of the appellant's arguments is an implicit attack upon the use of *any* significance threshold for radiation effects. The appellant raises the so-called ALARA ("As Low As Reasonably Achievable") principle, arguing that the only appropriate design for the project was the one which caused the least environmental effect at a reasonable cost. For the purposes of the argument before us, it says that the reference design was the appropriate choice since its effects would be less than the final design and they could be achieved at a reasonable cost.

The appellant claims that the spirit of the ALARA principle is incorporated into subs. 16(2)(b) of the *Act*, which requires that a comprehensive study include a consideration of alternative means of carrying out a project that are technically and economically feasible and of their environmental effects. There is no question that this provision mandates consideration of alternatives with respect to cost and environmental impact. However, there is equally no question in my mind that it does not go as far as to mandate that the alternative with the least environmental impact be selected. To do so would be to contrary to the scheme of the legislation. The approach of the *Act* is to require a finding that the alternative chosen not be likely to cause significant adverse environmental effects in order for it to proceed.

The appellant's next argument is directed at the project's alleged non-compliance with the licences issued by the AECB in respect of the Bruce Nuclear Power Development. The basis for this argument is somewhat complex. The appellant claims that Ontario Hydro committed itself, as a condition of its licences to operate the Bruce complex, to limiting its radiation emissions to 1% of the regulatory limit. It says that simple addition of the estimated radiation dose to be received by a member of the public as a result of operations of the reference design and the measured dose resulting from existing and on-going operations of the complex's other facilities yields a total dose approaching 1% of the current regulatory limit of 1000 µSv. Relying upon its allegation that the final design will expose members of the public to higher doses of radiation than the reference design, the appellant concludes that the combined operations of the final design of the dry storage facility and the existing operations at the Bruce complex will result in public radiation doses that exceed the 1% limit. At the very least, it says, the total dose amount is uncertain. Under these circumstances, where the strong possibility existed that the final design would cause Ontario Hydro to breach a condition of its operating licence, it was unreasonable for the Minister to make the finding that she did.

Despite the efforts of counsel for the appellants, I am not persuaded by this argument. The record dealing with Ontario Hydro's licences for Bruce Development shows that its commitment was to limit the emission into the air or water of radionucleides (radioactive isotopes of chemical elements) by its existing facilities such as the generating stations. These emissions were to be limited to no more than 1% of the derived emission limits (DELs) which are calculated separately for each radionucleide produced by each facility. The DEL seems to provide a means of relating radioactive releases to dosage limits. However, the nature of that relationship has not been demonstrated by the appellant Thus, I cannot accept its assertion that Ontario Hydro was required by its existing licences to ensure that the radiation dose received by a member of the public did not exceed 1% of the regulatory limit.

In any event, it is clear from the record that the DELs for the existing Bruce facilities were considered during the environmental assessment that was placed before the Minister. More important, however, is the fact that at the time that the Minister made her decision, the process of licencing the dry storage facility had not even commenced. Any DELs relating to that facility had yet to be calculated. As a result, there was no licencing limit that Ontario Hydro could be said to be exceeding.

The final and most specific of the appellant's submissions is an attack upon the quality of the assessment which was done. The appellant's main concern was with the choice of methodology adopted in the comprehensive study.

In the appellant's view, the responsible authority was required to ensure that the final design was subjected to the same detailed scrutiny that the reference design was. In its submission, the methodology employed in the present case - detailed assessment of a reference design along with the application (using scientific expertise and experience gained from an operating dry storage facility at Pickering) of that assessment to different design alternatives - was inappropriate and unreasonable. In its view, there must be an actual study - including detailed calculations of the radiological effects - of the final system design that was actually selected.

The essence of the environmental assessment process is to predict the environmental effects of a proposed project and then assess their significance. This process must be conducted as early as practicable in the planning stages of a project. By its very nature, then, the process is subject to some uncertainty. As this Court recognized in *Alberta Wilderness Association* v. *Express Pipelines Ltd*, "No information about probable future effects of a project can ever be complete or exclude all possible future outcomes."[17] It went on to opine that "... given the nature of the task, we suspect that finality and certainty in environmental assessment can never be achieved."[18]

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)*[19] 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.[20] In my opinion, the assessment at issue in the present case was conducted at such a time.

Thus, the question to be decided by this Court is whether the comprehensive study report that was prepared in accordance with the methodology selected by the proponent provided the Minister with a rational basis for arriving at her decision that the project was not likely to cause significant adverse environmental effects. In my opinion it did. Although the bulk of the comprehensive study report (including the detailed calculations of radiological effects) was based upon analysis of the reference design, the materials making up the report did not ignore the design alternatives which were eventually adopted. In fact, the December, 1997 report and the July, 1998 addendum contain a number of explicit statements indicating that the conclusions reached applied equally to the reference design and the possible alternatives to it.

It is true that the alternatives which were adopted in the final system design were not subjected to the same detailed radiological calculations that the reference design was. It must be recalled, however, that the calculations conducted with respect to the reference design predicted effective annual radiation doses to members of the public that were, even in the worst case scenario, on the order of 100 times less than the current regulatory limit. To put it in more concrete terms, Dr Waight, a radiation scientist with the AECB presented evidence during the judicial review that a person standing continuously at the closest point to which a member of the public can approach the Bruce dry storage facility, would, in one year receive an effective radiation dose approximately *20 times less* than if that same person were to make one roundtrip airline flight from Toronto to Vancouver. Even the worst case accident scenario assessed with respect to the reference design would expose that same member of the public to an effective dose approximately *6 times less* than that provided by a single chest x-ray.

It must also be recalled that the final system design selected for the facility was very similar to the system that had been placed into operation at Pickering. By the time that the comprehensive study was completed, measurements of the actual radiation emissions of this facility were available that showed that the radiological effects of that facility were less than had been predicted.

Even if I were to accept the factual assertions made by the appellant, it is clear that the predicted effective doses caused by the final design would still be well below both the significance threshold set out in the report and the current regulatory limit of 1,000 µSv per year. Under these circumstances, I do not believe that the Minister or any of the Agencies advising her was required to conduct any further analysis. The comparisons conducted by the comprehensive study report did provide her with a rational basis for concluding that no significant adverse radiological effects were likely to be caused by the project.

Issue 3: The Appropriate Remedy

In light of my finding that the Minister's decision was reasonable, it is not necessary for me to consider the appellants submissions with respect to the appropriate remedy.

Costs

At the completion of oral argument the appellant sought leave to file additional written submissions with respect to the Applications Judge's award of cost to the respondents. It indicated that the award had been made notwithstanding its request to make separate submissions on the matter once the Court had addressed the merits of the application.

The award of costs against it was one of the grounds raised in the appellant's notice of appeal. However, until the conclusion of the oral appeal hearing, the matter had not been the subject of any submissions. The Court granted leave to the appellant to file its written submissions. It provided the respondents with the opportunity to file their own submissions and the appellant with the opportunity to file a brief reply.

The appellant asserts that its application for judicial review raised new and important issues of health and safety and of law, the litigation of which were in the public interest. It asks this Court to alter the Applications Judge's award. Presumably its submissions apply equally to this Court's award of costs in this appeal.

The awarding of costs between parties is addressed by Rule 400 of the *Federal Court Rules, 1998,*[21] the relevant portions of which are reproduced below:

400. (1) The Court shall have full discretionary power over the amount and allocation of costs and the determination of by whom they are to be paid.	400. (1) La Cour a entière discrétion pour déterminer le montant des dépens, les répartir et désigner les personnes qui doivent les payer.
...	...
(3) In exercising its discretion under subsection (1), the Court may consider	(3) Dans l'exercice de son pouvoir discrétionnaire en application du paragraphe (1), la Cour peut tenir compte de l'un ou l'autre des facteurs suivants :
(a) the result of the proceeding;	a) le résultat de l'instance;
...	...
(c) the importance and complexity of the issues;	c) l'importance et la complexité des questions en litige;
...	...
(h) whether the public interest in having the proceeding litigated justifies a particular award of costs;	h) le fait que l'intérêt public dans la résolution judiciaire de l'instance justifie une adjudication particulière des dépens;
(i) any conduct of a party that tended to shorten or unnecessarily lengthen the duration of the proceeding;	i) la conduite d'une partie qui a eu pour effet d'abréger ou de prolonger inutilement la durée de l'instance;
...	...
(o) any other matter that it considers relevant.	o) toute autre question qu'elle juge pertinente.

As Rule 400 makes clear, there are a number of factors that may be considered in making a costs award. The

public interest in having a matter litigated is but one of those factors. Before considering the public interest in this case, I propose to comment briefly upon two other factors which I believe would have been relevant to the matter of costs before the Applications Judge.

The first is the appellant's conduct of the application. The Applications Judge reported that the appellant's Notice of Application had consisted of some 58 paragraphs, containing approximately 12 discrete grounds of review. Considerably fewer matters ended up being argued in the written and oral submissions. In support of its submissions it filed three expert affidavits, requiring the respondents to cross-examine these experts and present rebuttal evidence. In the event, however, very little reference was made to this extensive (and expensive) body of evidence.

The second factor is the nature of the appellant's judicial review arguments. An examination of the appellant's submissions to the Minister during the public comment phase of the environmental assessment process reveals that the submissions to the Applications Judge were essentially rehashes of the arguments made to the Minister. No truly novel legal or factual arguments seem to have been raised.

With respect to the appellant's submission that it was acting in the public interest, I do not question the genuineness of the its motivation in bringing its application. However, that, in itself, is not a basis for not awarding costs against it. Moreover, although it cannot be said that the public interest is completely represented by governments, I believe that it is pertinent to note that all of the governments of the municipalities surrounding the Bruce Nuclear Power Development - the Village of Paisley, the Towns of Kincardine, Southampton, and Port Elgin, the Townships of Bruce, Huron, Kincardine and Saugeen and the County of Bruce - supported the findings of the environmental assessment upon which the Minister based her decision.

Therefore, I would not interfere with the costs order of the Applications Judge.

DISPOSITION

I would dismiss the appeal with costs.

"J. Edgar Sexton"

J.A.

"I agree

A.J. Stone J.A."

"I agree

B.L. Strayer J.A."

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[1] In 1999, as part of a restructuring of the Ontario electrical industry, Ontario Hydro was divided along functional lines into a number of corporations. The respondent, Ontario Power Generation (OPG) took over operation of the BNPD at that time.

[2] R.S.C. 1985, c. A-16. Since the commencement of the current proceedings, the relevant portions of the Act have been replaced by the *Nuclear Safety and Control Act*, S.C. 1997, c. 9. Under the terms of the new statute, the AECB was dissolved and its licencing function assumed by the Canadian Nuclear Safety Commission on May 31, 2000.

[3] S.C. 1992, c. 37.

[4] *Ibid*, subss. 5(1)(d), 11(1).

[5] *Ibid.*, s. 17.

[6] Pursuant to the *Comprehensive Study List Regulations*, SOR/94-638, subs. 19(f).

[7] The sievert is the international unit for measurement of equivalent and effective dose of radiation.

[8] For instance, Part 2 of the addendum discussed the progress of the system design study. It noted that the short-list of options being evaluated was within the range of options considered in the December, 1997 report with the exception of possible addition of indoor storage of the containers. In a table summarizing the progress of the study, the "Preferred System" was identified as "Likely wet loading/third bay with tray-to-module conversion" using the Pickering container.

[9] S.C. 1992, c. 37.

[10] [2001] F.C.J. No. 18.

[11] 1998 CanLII 778 (S.C.C.), [1998] 1 S.C.R. 982.

[12] reflex, [1992] 3 F.C. 42 at 51.

[13] *Supra* note 15 at para 78.

[14] 2001 FCA 62 (CanLII), 2001 FCA 62, [2001] F.C.J. No. 359.

[15] SOR/94-638.

[16] See *supra* note 12.

[17] 137 D.L.R. (4th) 177 at 181.

[18] *Ibid.* at 183.

[19] 10 C.E.L.R. 204.

[20] *Ibid* at 233.

[21] SOR/98-106.