



## **Anonymous Email**

## **Courriel anonyme**

In the Matter of

À l'égard de

**Bruce Power Inc. – Bruce A and B  
Nuclear Generating Station**

---

**Bruce Power Inc. - Centrale nucléaire de  
Bruce A et Bruce B**

---

Request for a ten-year renewal of its Nuclear  
Power Reactor Operating Licence for the  
Bruce A and B Nuclear Generating Station

Demande de renouvellement, pour une période  
de dix ans, de son permis d'exploitation d'un  
réacteur nucléaire de puissance à la centrale  
nucléaire de Bruce A et Bruce B

**Commission Public Hearing – Part 2**

**Audience publique de la Commission –  
Partie 2**

**May 28-31, 2018**

**28-31 mai 2018**





The Canadian Nuclear Safety Commission  
Marc Leblanc, Commission Secretary  
280 Slater St., P.O. Box 1046  
Ottawa, ON K1P 5S9

**RE:** Receipt of Anonymous Letter and Inclusion for Part Two of Bruce Power Licence Renewal  
(Hearing Ref. 2018- H- 02)

*Delivered via E-mail [Marc.Leblanc@canada.ca](mailto:Marc.Leblanc@canada.ca)*

May 2, 2018

Dear Mr. Leblanc:

The Canadian Environmental Law Association (CELA) wishes to provide the following attachment appended to this letter to the Commission for consideration during Part Two of the hearing in the above-referenced matter. While we recognize the deadline for submissions for Bruce Power's Licence Renewal has passed, we request the CNSC exercise its discretion and accept this email for review.

On April 30, 2018, CELA received an email from an anonymous engineer working for a nuclear service supplier. The anonymous individual details safety concerns related to the pressures tubes at the Bruce NGS, and notes their primary concern is that neither the CNSC nor its staff have sufficient information to make an informed decision on the issue.

While CELA is not seeking the opportunity to comment on the email's contents, as Canada's nuclear regulator we believe it is within the CNSC's public interest mandate to consider the issues raised by the anonymous individual. Furthermore, as a public interest, legal-aid funded clinic, it is also within CELA's mandate that the views of the public, and concerns of transparency be considered in the CNSC's decision-making process.

We appreciate your response to this anonymous email and ask that due to the nature of the issues being raised, it be considered during Part Two of the Bruce Power licence renewal hearing.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kerrie Blaise', is positioned above the typed name.

CANADIAN ENVIRONMENTAL LAW ASSOCIATION  
Kerrie Blaise, Counsel  
cc Louise Levert





---

## Upcoming BP and Pickering Re licensing

---

**Nuclear\_expert** <Nuclear\_expert@protonmail.com>  
Reply-To: Nuclear\_expert <Nuclear\_expert@protonmail.com>  
To: "kerrie@cela.ca" <kerrie@cela.ca>

Mon, Apr 30, 2018 at 8:33 PM

Hi,

I am a professional Engineer, presently working for a nuclear service supplier for the Canadian CANDU industry. I have more than 25 years of experience in the CANDU Industry mainly on the Pressure Tube structural integrity assessment and their aging management. I am actively involved in the relevant standard development also. I am writing this e mail to you to bring yours and public attention to the main issue faced by the Canadian Industry specifically related to the aging of the pressure tubes.

I request you to bring this to public attention either by releasing this information to new outlets or by other proper means.

My primary concern is that the CNSC Staff and the Industry do not provide sufficient information either to the Commission or to the public to make an informed decision. Before I go into the specifics of my concerns, I would like to clarify the following:

- Pressure Tubes are the heart of the CANDU reactor and they carry the nuclear fuel. These are 6 meter long 4mm thick tubes made from Zr 2.5%Nb.
- Pressure tubes degrade during operation due to the high temperature and hostile environment. This means if the operating temperature are high the degradation rate will be also relatively high.
- During operation Hydrogen enters the pressure tube (rate is dependent on temperature as it is a corrosion mechanism) and make the material brittle.
- When sufficient hydrogen collects in a region (limit is called as TSSP), they form brittle hydrides. These brittle hydrides can initiate zipping of flaws or cracks during operation.
- Hence the governing standard limits the amount of hydrogen in a pressure tube. The current limit is 100 ppm for outlet and 70 ppm for inlet. Above these limit, the collected hydrogen could form hydrides during normal operation itself and if there were any flaw in the vicinity of these hydrides, the pressure tubes could rupture.
- The current million dollar question is not whether the pressure tubes going to fail or not, the failure of the pressure tube is given, the question is when it is going to happen?

I gone through the Day 1CMDs for BP and Pickering (both CNSC and BP and OPGs )and observed the following. I humbly request you also to go through these two CMDs and compare them yourself.

In regards to BP: CNSC is silent on the current condition of the fuel channels and did not include any special condition for current operation. However as the BP Units operate at a higher temperature, the BP pressure tubes should have crossed the TSSP limit and I am pretty sure that the pressure tubes are operating with hydrides present. If this is not happening now, it is going to be imminent. This was confirmed by the BP staff during the Day 1 hearing when they informed the Commission that they will be reaching the 120 ppm in 2019. This means that the BP Pts should have already reached the 70 and 100 ppm limit or imminently going to reach.

In regards to Pickering, as these Units operate at a lower temperature, I don't think they will ever reach the TSSP limit or the 70 and 100 ppm limit. Nevertheless, it is shocking that draft LCH for Pickering (in Section 6) includes some additional requirements that Pickering should meet should the Pickering Pressure tubes reach the 70 and 100 ppm limit. This requirement is not identified in the draft LCH for BP pressure tubes. Why? Further, the CMDs (both CNSC and OPG) raise several issues and provide some current status of those issues with respect to Pickering operation. One case is how OPG measure and predict hydrogen. If we compare BP and Pickering CMDs, we can observe that OPG discusses these issues and provide a path forward, but BP just ignores these issues. CNSC also ignores most of these issue , but ignores only in the BP CMD, but highlight it in the Pickering CMD.

The next issue is related to the CNSC past compliance actions for both BP and Pickering. In the Pickering CMD, CNSC discusses multiple focussed inspections carried out by CNSC inspectors' specifically focussing on the Pickering pressure tubes. Have CNSC implement the same rigor in the compliance activities for BP reactors, if yes, what were the results, if not, Why not?

My biggest worry is that CNSC is just focussing on the Pickering reactors due to the local public perception (near to the site), and missing the mark for BP reactors as the local public there are silent as the BP is the largest employer there. My expert opinion (not only mine, most of the experts in the field) is that if a pressure tube is going to fail, it is going to happen at BP. The question is how many pressure tubes are going to fail due to the cascading effect and whether BP could safely shut down the reactor to a cold state before radio activity releases.

Regards

XYXY

Sent with [ProtonMail](#) Secure Email.