



**Written submission from the
Canadian Nuclear Association**

**Mémoire de
l'Association nucléaire canadienne**

In the Matter of

À l'égard de

**Bruce Power Inc.
Bruce Nuclear Generating Stations A and B**

**Bruce Power Inc.
Centrales nucléaires de Bruce-A et B**

**Application to amend the power reactor
operating licence for the Bruce Nuclear
Generating Stations (NGS) A and B**

**Demande visant à modifier son permis
d'exploitation d'un réacteur de puissance pour
les centrales nucléaires de Bruce-A et B**

Hearing in writing based on written
submissions

Audience par écrit fondée sur des mémoires

April 2023

Avril 2023

April 17, 2023

Canadian Nuclear Safety Commission
c/o Louise Levert, Secretariat
280 Slater St. PO Box 1046
Ottawa, Ontario K1P 5S9

Subject: Canadian Nuclear Association Intervention in support of Bruce Power's application to amend the power reactor operating licence for Bruce Nuclear Generating Stations A and B to reflect recent Commission decisions.

The Canadian Nuclear Association (CNA) has approximately 100 members, representing over 76,000 Canadians employed directly or indirectly in exploring and mining uranium, generating electricity, advancing nuclear medicine, and promoting Canada's worldwide leadership in science and technology innovation and we are pleased to have this opportunity to support Bruce Power's application to amend its power reactor operation licence.

At the time of Bruce Power's licence renewal in 2018, it was projected that the end of life, Heq values for some pressure tubes would exceed the 120 ppm limit, therefore the Commission placed a licence condition on Bruce Power to demonstrate that fracture toughness will be sufficient for operation beyond 120 ppm.

In 2021 and 2022, Bruce Power reported to the CNSC that elevated Heq concentrations were discovered near the outlet and inlet joint (ORJ and IRJ respectively). Following hearings in November 2021 and January 2022, the Commission concluded that pressure tube fracture toughness in the ORJ region was sufficient for safe operation beyond the 120 ppm based on the low likelihood of flaws in the region of interest that would lead to crack initiation. The Commission agreed that a reduction in fracture toughness was only a concern for regions of pressure tubes where cracks can form.

Since these findings, the Commission has approved the operation of Units 3, 4, 5, 7 & 8 with pressure tubes in excess of 120 ppm of Heq based on the low likelihood of flaws in the region of interest that would lead to crack initiation. Furthermore, CNSC staff have determined through risk assessment that the risk due to the issue of Heq at the IRJ of pressure tubes where flaws are known to exist in tubes is negligible for up to 3 years of continued operation.



In light of these findings, and supported by advancements in the understanding related to pressure tube behavior, the CNA supports Bruce Power's request that Licence Condition 15.3 be removed from PROL 18.02/2028 and that going forward all aspects of pressure tube fitness for service be managed in accordance with Licence Condition 6.1 which requires that all station components be maintained fit-for-service in accordance with Bruce Power's long established and well performing fitness-for-service program.

CNA also supports Bruce Power's recommendation that as a product of the consolidation, all remaining pertinent elements of Licence Condition 15.3 be consolidated within Licence condition 6.1 and that the Compliance Verification Criteria documented within the LCH be in turn updated to reflect the expanded scope of Licence Condition 6.1.

Safety is Bruce Power's number one priority, and they are committed to maintaining defense in depth with respect to the overall operations of Bruce A and Bruce B and specifically as it relates to pressure tube integrity, through the continued demonstration of the fitness for service of plant components. This commitment, Bruce Power's unblemished safety record and the thorough research done by Bruce Power and overseen by CNSC staff give CNA great confidence in supporting Bruce Power's request.

Should you have any questions or require any additional information please contact Steve Coupland at scoupland.sgcresearch@gmail.com or 519 -386-0704.

Sincerely



Jill Baker
Vice President
Canadian Nuclear Association

