



Supplementary Information

Renseignements supplémentaires

Written submission from Ontario Power Generation

Mémoire d' Ontario Power Generation

In the Matter of

À l'égard de

**Request for authorization to return
Pickering Nuclear Generating Station
Unit 5 to service, following its current
forced outage**

**Demande concernant l'autorisation de la
remise en service de la tranche 5 de la centrale
nucléaire de Pickering à la fin de son arrêt
prévu actuel**

Public Hearing - Hearing in writing based on
written submissions

Audience Publique - Audience fondée sur des
mémoires

October 2021

Octobre 2021

From: IRVINE Sara -INTFLTMGMT <sara.irvine@opg.com>
Sent: Tuesday, October 12, 2021 10:37 AM
To: Leblanc, Marc <Marc.LebLANC@cnsC-ccsn.gc.ca>; Secretariat / Secretariat (CNSC/CCSN) <Secretariat@cnsC-ccsn.gc.ca>
Cc: KNUTSON Mark -ENTENG <mark.knutson@opg.com>; FABIAN Paul -ENTENG <paul.fabian@opg.com>; CARNEIRO Trevor -ENTENG <trevor.carneiro@opg.com>; VECCHIARELLI Jack -INTFLTMGMT <jack.vecchiarelli@opg.com>
Subject: OPG Responses to EAC Comments for Pickering 5 Restart

OPG Proprietary

NK30-CORR-00531-08344

Mr. Leblanc,

Please find below OPG's responses to the EAC comments related to Pickering 5 restart, inserted in red font below the associated EAC comment.

- The assertion that the number of debris frets in Pickering B is small is a bit of a stretch. Typically, Pickering B has more fretting indications than any other OPG units for historical reasons (related to debris produced during initial fuelling of the reactors after hot conditioning). Some of these flaws have historically caused Pickering B units to be cycle-limited (a cycle is unit heat up or cool-down).
- OPG agrees that Pickering 5-8 contains more flaws per inspected channel when compared to Darlington units when the full axial length of the pressure tube is considered. Within 75mm inboard of the outlet burnish mark, the average number of reportable and dispositionable flaws is significantly lower, as shown in the table below.

Unit/Station	Length of Region Considered	Average No. of Reportable and Dispositionable Debris Flaws in Region Considered
P5-8	500mm inboard of burnish mark, 360 degree	0.15
P5-8	75mm inboard of burnish mark, 360 degree	0.04
P5-8	75mm, inboard of burnish mark, top 120 degree	0.01
D1+4	500mm inboard of burnish mark, 360 degree	0.07
D1+4	75mm inboard of burnish mark, 360 degree	0.008
D1+4	75mm, inboard of burnish mark, top 120 degree	0

Flaws that are cycle limited are scheduled for replica to obtain root radius information or are being further analyzed through Finite Element Analysis Techniques. There are no cycle limited flaws in the area of interest.

- while the order quotes any flaw deeper than 0.15 mm as being of concern, a flaw 0.17 mm is described as a "very small" flaw. It is excluded from the statistical analysis, even though its origin is unknown. This suggests that the criterion of >0.15 mm is really "shorthand" for "flaws that are not very small", where the attributes of a "very small flaw" are not specified. Subjectivity in the criterion is not ideal.
 - OPG agrees that flaw depth is not the primary indicator of flaw severity, as increased flaw sharpness results in an increased susceptibility to delayed hydride cracking. P5O05-IND1 with a depth 0.17mm was characterized as "very small" as the depth is slightly larger than the CSA N285.4 criteria which specifies that flaws less than 0.15mm are unconditionally acceptable. The presence of this flaw was incorporated in the statistical analysis in NK30-CORR-00531-08328.

Regards,

Sara Irvine

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