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Supplementary Information

Presentation from
Paul Sedran, RESD Inc.

Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2022 and Mid-term update for Ontario Power Generation's Pickering Nuclear Generating Station

Commission Meeting

December 13 and 14, 2023

Renseignements supplémentaires

Présentation de
Paul Sedran, RESD Inc.

Rapport de surveillance réglementaire des sites de centrales nucléaires au Canada : 2022 et Rapport de mi-parcours d'Ontario Power Generation pour la centrale nucléaire de Pickering

Réunion de la Commission

13 et 14 décembre 2023

Canada

Review of Submissions for the PNGS Midterm Review and the CNSC ROR for 2023

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December 13th, 2023

Presentation Contents

1. Introduction – Components of the review
2. Main Finding from the Review of the PNGS Midterm Report: Calibration of CT-PT Gap Measurements

2.1 Gap Calibration Procedure

2.2 Validity of Gap Calibration – CT ID profiles

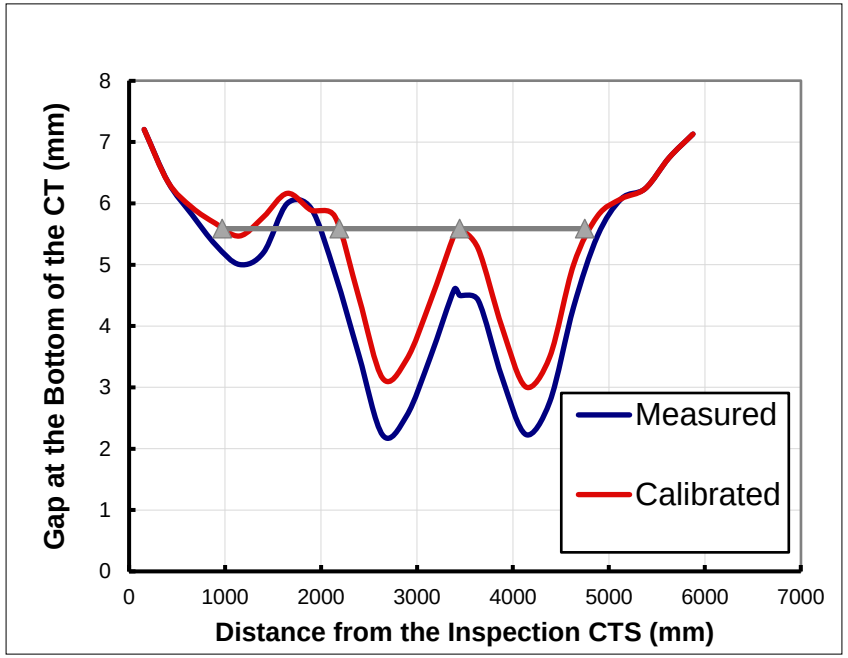
2.3 Effect of Gap Calibration on CT-PT time-to-contact

3. Conclusions

1. Introduction – Components of the Review

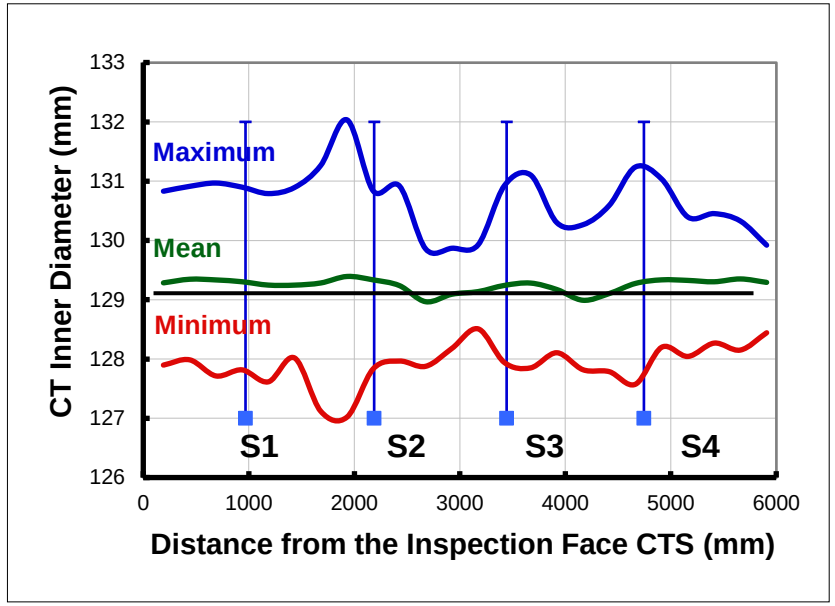
1. OPG's Midterm Report on Licensing Activities for PNGS was reviewed.
2. The CNSC ROR was reviewed
3. For 1. the main emphasis was a finding on CT-PT gap calibration

2.1 CT-PT Gap Calibration Procedure

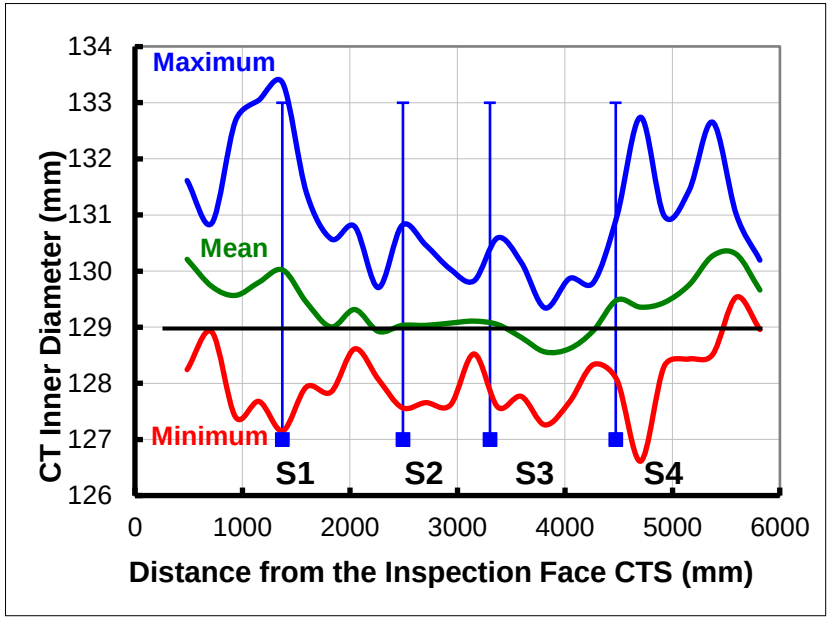


2.2 Validity of Gap Calibration

CT ID Profiles from the 2005 Inspection of Fuel Channel G-2 H14 with No Gap Calibration

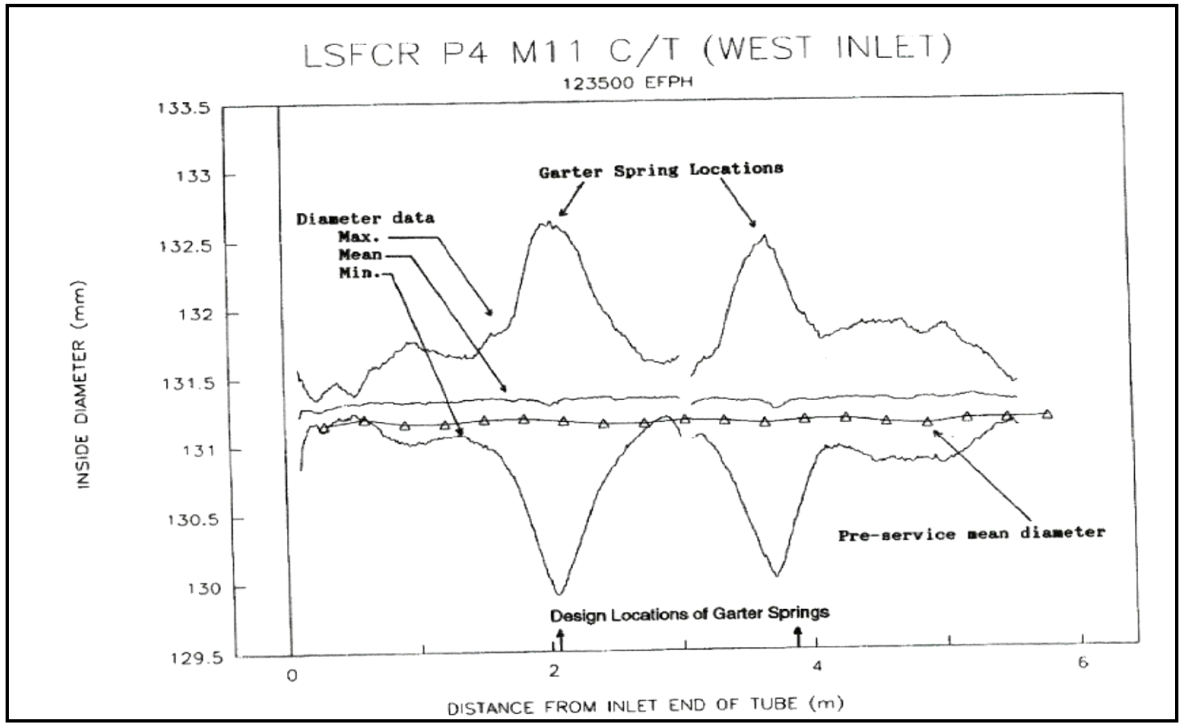


CT ID Profiles from the 2004 Inspection of Fuel Channel PLGS F06 with Gap Calibration

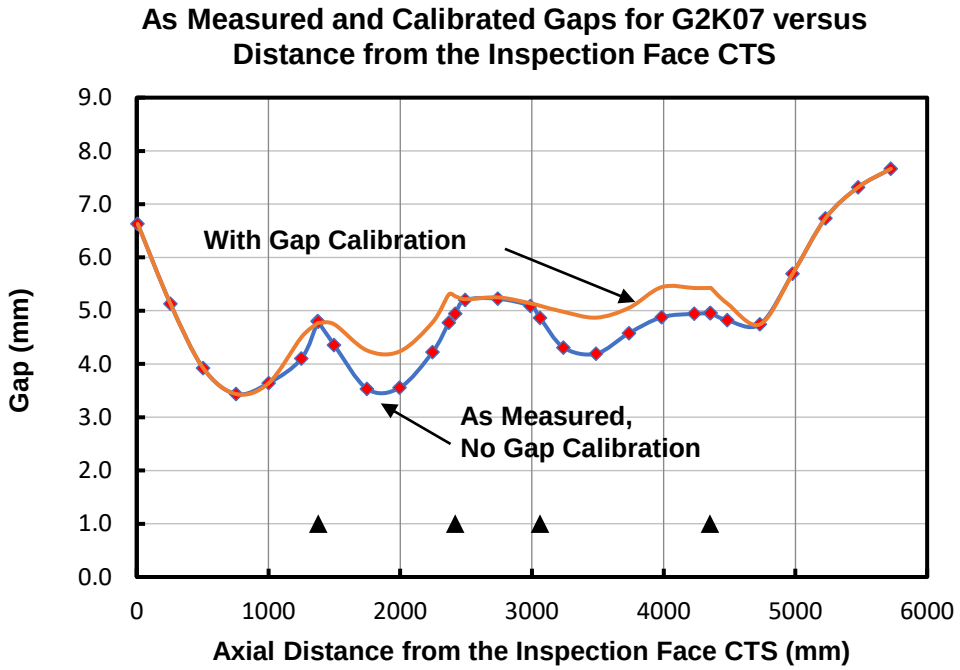


2.2 Validity of Gap Calibration Continued

CT ID Profiles from the Gauging Measurements of The CT Removed from Fuel Channel P4M11



2.3 Effect of Gap Calibration on CT-PT time-to-contact



Calibration	x	EFPH	Measured Gap	Fuelled Gap at x	Time-to-contact at x
	(mm)	(h)	(mm)	(mm)	(EFPH)
None	1870.4	161000	3.430	3.427	417125
Calibrated	1897.9	161000	4.140	4.137	622061

3. Conclusions

1. In-service CTs are expected to have a nearly uniform mean CT ID profile over the length of the CT
2. With as-measured gap profiles, CT ID values conform to condition 1.
3. With gap calibration, CT ID values do not conform to condition 1.
4. The above indicate that gap calibration may be technically incorrect and further investigation will be required to make the finding conclusive.
5. With gap calibration, time-to-contact predictions may be anti-conservative.