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Written submission from University of Ontario Institute of Technology

Mémoire de l'University of Ontario Institute of Technology

In the Matter of

Ontario Power Generation Inc., Pickering Nuclear Generating Station

Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Pickering Nuclear Generating Station

Commission Public Hearing – Part 2

June 2018

À l'égard de

Ontario Power Generation Inc., centrale nucléaire de Pickering

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 Pickering

Audience publique de la Commission – Partie 2

Juin 2018

Canada

UNIVERSITY OF ONTARIO
INSTITUTE OF TECHNOLOGY

May 7, 2018

Canadian Nuclear Safety
Commission 280 Slater Street, PO
Box 1046 Ottawa, ON
K1P 5S9

By email: interventions@cnsc- ccsn.gc.ca

Subject: PUBLIC HEARINGS – Ontario Power Generation Inc.
Application to renew the Power Reactor Operating licence
for the Pickering Generating Station

To Whom It May Concern:

I am writing in support of Ontario Power Generation's (OPG) application for the renewal of the Pickering Nuclear Generating Station (PNGS) operating licence.

I support OPG's plan and hold confidence that measures and practices to ensure the continued safe and reliable operation of the Pickering Nuclear Generating Stations are in place.

In particular, we see continued effort by OPG to continue to have the highly competent staff necessary to run the facility safely. OPG continues to hire highly educated talent from our University into the OPG organization. As well, OPG demonstrates a focus on the future by continuing to invest in competency of its existing employees. We see that at the University, with OPG's participation in continuing education activities including Advanced Operations Overview for Managers, graduate diploma programs and graduate degree programs.

We note continued strong safety performance at the Pickering Nuclear Generating Station as highlighted in the public documents published by the CNSC such as the annual review of class 1A licencee performance. We also note the submission of documents for independent Regulatory oversight including the Pickering B Continued Operations Plan, the Pickering Sustainable Operations Plan, and the Pickering Decommissioning Plan in compliance with regulatory expectations. The systematic review and evaluation, and the improvements that are taken as a result of that review, will add confidence to the continuation of the strong safety performance of the plant.

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The well-established safety record of PNGS, and the plans and capabilities that are in place, will continue to ensure worker and public safety, and will contribute much-needed base load electrical generation with virtually no emissions of greenhouse gases. This will contribute to human, environmental and economic health for the Greater Toronto Area, Ontario and Canada.

The electrical energy generated by the Pickering A and B power plants is a significant contributor to the high quality of life and economic productivity in Ontario enjoyed by its residents, and by the commercial and industrial enterprises of the province. The Pickering units are amongst the lowest cost generators of electricity in Ontario, and as such are an essential component of enhancing the province's industrial strategy. In particular, the continued operation of PNGS will help to counteract the higher cost of electricity production from renewable energy sources. Without the renewal of the PNGS operating licence, electricity prices may increase significantly more than currently projected, and the reliability of the bulk electric system in Ontario would reduce. While points may be debated, PNGS does contribute to energy security in Ontario. Given this, the manufacturing, as well as the commercial sectors in the province, require stable electricity prices and a highly reliable supply of electrical energy to maintain employment and provide for economic growth, and to maintain the standard of living of the people of the province. The prudent decision by the Government of Ontario to eliminate coal-based generation of electricity and thereby avoid the negative health impacts, as well as carbon emissions, is made possible by the ability of nuclear reactors such as the ones at Pickering and Darlington to generate electricity without the significant emissions of CO_2.

The safe and reliable operation of the Pickering A and B nuclear-electric generating units demonstrates the soundness of the CANDU design and the accumulated operating experience of Ontario Power Generation. The additional safety enhancements undertaken in response to the Fukushima event further increase the safety robustness of this design. The continuous improvement plans, including foremost the biggest clean air project in Canada in the refurbishment of Darlington Nuclear Station, are testimony to OPG's strong record of compliant and safe operations.

The University of Ontario Institute of Technology (UOIT) is pleased to note the improved human performance documented by OPG's application to renew the reactor operating licence for PNGS. Since 2007, many graduates of UOIT's nuclear engineering, health physics and radiation science degree and diploma programs have been employed at the Pickering A and B, and Darlington Nuclear Generating Stations, and I believe that these employees are contributing to the continued safe and reliable operation of PNGS.

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The University of Ontario Institute of Technology offers Canada's only undergraduate nuclear engineering program. We also offer programming in health physics and radiation science within our Faculty of Energy Systems and Nuclear Science. Situated between Pickering and Darlington, our programs were developed to address the skills, knowledge, talent and innovation needs of the industry. Safety is both a priority and responsibility for us as we train the next generation of engineers, health physicists and radiation science professionals, whether it be in our undergraduate, masters or PhD programs, our graduate certificate programs or our Advanced Operations Overview for Managers (AOOM) program to upskill the current workforce. Internationally recognized faculty members, many with industry experience, teach these programs. Our faculty serve on national and international panels, associations and standards committees, and these national and international bodies recognize their expertise.

The university is fully engaged in nuclear safety through our senior and associate industrial research chairs in health physics and environmental safety. We connect to the local community through membership of the Durham Nuclear Health Committee, which meets quarterly and is chaired by the Region's Commissioner and Medical Officer of Health.

The university's students are also actively engaged in the sector, including active participation in North America Young Generation Nuclear (NAGYN) Durham, Canadian Nuclear Society, and Women in Nuclear chapters. Our students interact with the industry through internships as well as ad hoc initiatives. For instance, in 2016 UOIT students provided their insights into the repurposing of the OPG Pickering Nuclear station upon its decommissioning.

Currently, I am the Dean for the Faculty of Energy Systems and Nuclear Science at UOIT. I have served on the American Nuclear Society's President's Committee on the 2011 Fukushima Daiichi nuclear power plant accident in Japan, and was technical co-author of a book on the accident. Previous to joining the university I was at NuScale Power LLC, a nuclear energy startup company in Oregon, where I was senior Principal Engineer finalizing the design certification application of a Small Modular Reactor. From 2007 to 2014, I was Professor of Mechanical and Nuclear Engineering and Director of Nuclear Engineering at the University of Idaho. Prior to 2007, I was also a faculty member at Kansas State University and the University of Missouri. At Missouri, I was also Director and U.S. NRC-licenced Senior Reactor Operator of the university's research reactor. I received my PhD in Nuclear Engineering from Purdue University. I have a wide array of expertise in nuclear reactor engineering, design and safety.

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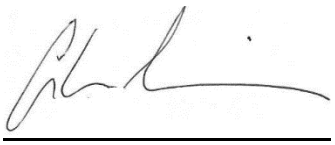
The Pickering A and B nuclear plants have operated reliably and safely since they were placed into service, and are major contributors to the supply of electricity in the province of Ontario. The continued operation of the Pickering nuclear units to supply their share of base load electricity is essential to assure that the high standard of living enjoyed in the province is maintained and further enhanced. We take for granted that electricity is available on demand. Given the environmental and safety record of the Pickering A and B Nuclear Generating Stations, I have confidence that the continued operation of the existing reactors and related facilities will meet or exceed the regulatory requirements.

I look forward to attending the hearings and addressing points I have emphasized in this letter.

Respectfully submitted,



Akira Tokuhiro, Ph.D.
Dean and Professor
Faculty of Energy Systems and Nuclear Science
Tel: 905-721-3142
akira.tokuhiro@uoit.ca