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Written submission from AtkinsRéalis

Mémoire d' AtkinsRéalis

In the Matter of the

À l’égard d’

Ontario Power Generation Inc.

Ontario Power Generation Inc.

Applicability of the Darlington New Nuclear Project environmental assessment and plant parameter envelope to selected reactor technology

Applicabilité de l’évaluation environnementale et de l’enveloppe des paramètres de la centrale à la technologie de réacteur sélectionnée pour le projet de nouvelle centrale nucléaire de Darlington

Commission Public Hearing

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AtkinsRéalis

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AtkinsRéalis submission in support of the Darlington New Nuclear Project

Introduction

At AtkinsRéalis' Canadian Nuclear headquarters in Mississauga, we are privileged to work on Traditional Territory of the Mississauga's of the Credit First Nation.

Understanding treaties and concepts of land use is complex and is a key component of reconciliation. Our office is located on Traditional Territory ceded through Treaty 13 in 1805 (previously the Toronto Purchase of 1787). Eight subsequent Treaties further broke out this land. In 1806, Treaty 14 confirmed the Head of the Lake Purchase between the Mississauga's of the Credit and the Crown. This region includes modern cities of Mississauga, Oakville and parts of Burlington. In 1820, Treaty 22 and 23, known as "Credit Treaties" were also signed (Mississauga/Credit River region).

We acknowledge that the Mississauga's of the Credit First Nation entered into the early treaties as a covenant of trust believing they would be sharing the land with newcomers. However, the Crown considered the treaties outright land purchases. By the 1820's, the population of the Mississauga's of the Credit had been reduced by 60 per cent, from about 500 people to 200 people. In addition, their territory had been reduced from 4,000,000 to 200 acres.

AtkinsRéalis recognizes Indigenous Peoples and their ancestors as Peoples who inhabited and cared for these lands since time immemorial. We are grateful for the Traditional Knowledge Keepers and Elders who are with us today, those who have gone before us and the youth that inspire us. We recognize the land and the benefits it provides all of us and are grateful to have the opportunity to work on this land.

In addition to our acknowledgement of Traditional Territory, we respectfully recognize the unique history, culture, language, way of life and distinct contributions of the Métis Peoples.

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We acknowledge this truth to move forward with sincerity in truth and reconciliation and commit to our allyship with Indigenous Peoples. We are all Treaty People.

This document constitutes AtkinsRéalis' written submission to the Canadian Nuclear Safety Commission in support of Ontario Power Generation's selection of the BWRX-300 technology and the applicability of this reactor technology to the Darlington New Nuclear Project (DNNP) plant parameter envelope and environmental assessment.

Our Experience

AtkinsRéalis has played a pioneering role in developing the commercial nuclear industry in Canada in the 1960s, and has become the world's top provider of refurbishment expertise for CANDU® reactors. We oversee new-build nuclear power plants, major refurbishments, and life extensions, and offer specialized services in safety analysis, environmental qualification, metrology/spatial analysis, geotechnical investigations, decommissioning and waste management services.

We are a global company with significant Nuclear presence in Canada, the US and the UK. Our combined team is involved in both nuclear steam plant (NSP) and balance of plan (BOP) projects for many reactor technologies around the world. Our combined team of over to 3,400 nuclear power experts are part of one of the most complete nuclear services companies in the world, with full architect engineer and management & operations (M&O) capability, and a full suite of engineering and field services, project management, project controls, commercial and of plant life management for not just CANDU reactors, but also boiling water reactors (BWRs) and pressurized water reactors (PWRs). The AtkinsRéalis team has extensive design and execution experience gained during the course of more than 70 years in the nuclear industry.

Netzero Needs Nuclear

In 2021, AtkinsRéalis released a report titled "Engineering NetZero". It was authored by a wide range of experts in grid solutions & planning, nuclear power, renewables, and major infrastructure projects.

We concluded at that time that the overall demand for energy in Canada was going to increase by 2-3 times its current level in order to fully decarbonize our economy and as such, we concluded that Canada needs a combination of large nuclear reactors, small nuclear reactors including those for smaller jurisdictions and industrial decarbonization, and micro modular reactors to displace diesel in off-grid communities and remote industrial facilities.

Specifically, building a combination of large CANDU nuclear reactors, SMR nuclear power like the DNNP project, and wind, solar, and storage are all vital steps on the path to NetZero 2050.

To have nuclear deliver just 25% of Canada's energy needs, we need to build 20 new large CANDU plants, and 45 BWRX-300 SMRs over the course of the next 3 decades. OPG has

taken the commendable step to move ahead with the DNNP project, charting the course for this significant build of both reactor scales required.

In 2022, the IESO published a report “Pathways to Decarbonization” which held many similar projections and models to our own, just for the Ontario market. It holds a similar mix of both large and small nuclear power plants.

How we are contributing to DNNP

AtkinsRéalis is pleased to be part of the Integrated Project Delivery team, announced in January of 2023, where we are the Architect/Engineer for the DNNP project. We have experts in nuclear engineering, safety, environment, and project management actively working with our partners to deliver this unique nuclear project.

Our engineers work every day to develop the DNNP project designs, where we leverage our decades of project experience to ensure a safe, high quality, carbon-free power generation project.

Our environmental teams are working closely with OPG and our construction partners to help manage the construction site and future impacts of this new facility.

Our extensive supply chain is being engaged to help build the BWRX-300 technology with a localized community of vendors and contributors.

And finally, our highly focused team of Indigenous & Community engagement professionals are working closely with OPG and local communities to ensure that all stakeholders are represented, listened to, and their own knowledge and experiences are brought into the project scope.

This year, we have hired more than 220 new staff into our organization to support the DNNP project and others, allowing us to create new, well-paying jobs in Ontario. We continue to hire at a rapid pace.

Conclusion

The DNNP project is an exciting, and important, step forward to develop clean, reliable electricity generation for the province of Ontario.

AtkinsRéalis has a long history of working closely with OPG and is intimately familiar with the strong culture of engineering design, safety, commitment to environmental stewardship, and quality of work.

The Darlington New Nuclear Project (DNNP) was subject to an Environmental Assessment (EA) under the Canadian Environmental Assessment Act (CEAA). Once the BWRX-300

reactor was selected, OPG thoroughly assessed the technology to demonstrate that it fits within the existing accepted EA.

OPG completed a comparison of BWRX-300 design parameters with the DNNP Plant Parameter Envelope (PPE) values, and a comprehensive review of the Environmental Impact Statement (EIS) for the selected reactor technology.

It was concluded that the effects of the BWRX-300 Small Modular Reactor (SMR) deployment on the environment are within the existing assessment envelope and generally less than those examined in the EIS. The EIS review has determined that the conclusion of the 2009 EIS remains valid for the deployment of the BWRX-300 at the DNNP site.

CNSC reviewed the OPG assessment and responded through CMD (Commission Member Document) 24-H2. CNSC staff note that the majority of the parameters assessed in the EIS Review fall within the scope of the impacts assessed and accepted in the EA, or are not applicable due either to the design of the BWRX-300 reactor, and/or due to OPG's approach to the design.

Consequently, CNSC staff expect no significant residual adverse environmental effects from the deployment of up to four BWRX-300 reactors, provided the mitigation measures identified in the EA are implemented, as required by OPG's EA follow-up program.

We support the CNSC staff and OPG assessments that the BWRX300 technology is not a fundamentally different technology, and that it falls within the DNNP plant performance envelope used as the basis for environmental assessment.

In summary, a netzero economy needs nuclear power, working alongside other energy technologies to provide clean, safe, stable, and cost effective electricity for the people of Ontario. AtkinsRéalis reflects this in our vision and how we work with our customers on a daily basis – "Building a better future for our planet and its people".

Sincerely,

Gary Rose
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