



Oral Presentation

Submission from Women in Nuclear Canada

In the Matter of

Bruce Power Inc. – Bruce A and B Nuclear Generating Station

Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Bruce A and B Nuclear Generating Station

Commission Public Hearing – Part 2

May 28-31, 2018

Exposé oral

Mémoire de Women in Nuclear Canada

À l'égard de

Bruce Power Inc. - Centrale nucléaire de Bruce A et Bruce B

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 Bruce A et Bruce B

**Audience publique de la Commission –
Partie 2**

28-31 mai 2018

April 14, 2018

Canadian Nuclear Safety Commission

c/o Adam Zenobi, Policy Officer, Aboriginal Consultation and Participant funding Program, Policy, Aboriginal and International Relations Division

280 Slater Street, P.O. Box 1046

OTTAWA, ON K1P 5S9

Attention: Canadian Nuclear Safety Commission (CNSC) Tribunal Chair and Commission Members

Re: Women in Nuclear Canada Intervention in Support of the Submission from Bruce Power on Application for Licence Renewal for Bruce Power Inc. Bruce A and Bruce B Nuclear Generating Station.

Tracy Primeau, Co-Chair of Women in Nuclear Bruce Chapter and member of Women in Nuclear Canada Board has been retained by WiN-Canada to submit a written report to the CNSC summarizing comments from the technical review of the Bruce Nuclear Generating Stations licence renewal and participate in the Commission hearing in May. Mrs. Primeau is also employed as a Bruce A Shift Manager by Bruce Power and is a member of the Nipissing First Nation.

About WiN

Women in Nuclear (WiN) Global is a world-wide non-profit association of women working professionally in various fields of nuclear energy and radiation applications, established in 1993. WiN Global currently has approximately 35,000 members, including national chapters' members and individuals from about 100 countries, with over 30 national, regional and international chapters throughout the world.

Women in Nuclear Canada (WiN-Canada), established in 2004, represents over 1,700 women and men across Canada and nearly 1,000 of them reside in Ontario. While many WiN members are employed in the nuclear energy sector (Bruce, Darlington, Pickering and Point Lepreau), WiN-Canada welcomes members from industries who use nuclear and radiation technologies, such as hospitals, medical facilities, mining, academic and research institutions and the suppliers that support all of these industries.

WiN-Canada's goals are to:

1. To open a dialogue with the public and in particular with other women on the contribution that nuclear technologies make to people and society;
2. To facilitate the exchange of knowledge and experience among our members; and,
3. To promote and support an interest in nuclear-related careers especially among women and young people.

In our industry, made up of a little less than 20 percent women, our organization works to showcase the vital contribution women are making as leaders in the nuclear industry. WiN members devote a great deal of their volunteer time working with young women and girls introducing them to non-traditional, but rewarding careers in science, technology and the skilled trades. Chapter events share knowledge of the nuclear industry among members. Our WiN Speakers Clearinghouse provides this information to the public especially women's groups and students.

WiN-Canada believes that knowledge exchange between our members, about all aspects of the industry, provides them with the information they need to help educate our family, friends, community and members of the public. This dialogue provides an opportunity for the public to make informed decisions about whether or not they support the industry. When the person sitting in front of you looks like you and shares similar life experiences the level of trust is increased.

Women are strong opinions leaders in our country. As a result of its efforts to promote the careers of women, WiN-Canada has become a strong, credible voice in the nuclear industry. It is important for our voice to be heard, including our participation in public hearings in the nuclear industry such as this Bruce Power Operating Licence Renewal.

WiN-Bruce and Bruce Power

Many members of WiN-Bruce are employed by Bruce Power and Bruce Power is very supportive of our chapter. Other members work for OPG, many other nuclear related companies and in the medical community. Obviously, many of our members would be directly affected by the outcome of the Bruce Power licence renewal application. WiN-Bruce currently has close to 400 members. Bruce Power has supported WiN-Bruce financially, sponsors our events and supports the attendance of our members at the annual WiN-Canada conference. Our members come from a variety of work experiences and education. They are involved at every level of the organization from operations to regulatory affairs, radiation technicians, welders and senior leadership to name only a few.

WiN-Bruce runs a STEM (Science, Technology, Engineering and Math) camp for boys and girls at March Break and in the summer as well as supports the Skilled Canada competition/conference for young women interested in the trades. We aim for a networking/learning event once a quarter and have organized simulator demonstrations (with a full female team), and speakers from Bruce Power and outside the industry to share their experiences with our members.

We have worked hard to encourage women to pursue careers in STEM, but women are often unaware of the highly skilled, well-paying jobs within the nuclear industry; so, although we have made great strides towards increasing the number of women in these roles, we want to see more women enter these careers and move into senior leadership roles. There is also a gap in the current numbers of skilled trades workers and we believe they would benefit from having more women entering those careers.

Review of Application for Licence Renewal for Bruce Power Inc. – Bruce A and Bruce B Nuclear Generating Station and Commission Member Document CMD 18-H4

The WiN-Canada findings from the review of the Application for Licence Renewal for Bruce Power and the associated CMD 18-H4 are stated in the sections below sorted by Safety and Control Areas (SCAs):

1. Management System

The WiN-Canada reviewer concurs with the conclusion in CMD 18-H4 that the Management System at Bruce Power is in accordance with CNSC requirements and that Bruce Power has promoted a nuclear safety culture. In particular with the request for a 10 year licence including MCR, WiN-Canada believes the ongoing improvement in the Change Management program and the use of OPEX will support the site remaining a safe workplace for all including WiN members.

As WiN represents women working in the nuclear industry, WiN is particularly interested in a strong safety culture. WiN concurs that Bruce Power's safety culture program met requirements and that the assessments indicate improvements since 2013 and now include contractors and security culture. Information shared in the licence renewal application reflects this focus on a strong safety culture. Self-assessments and the use of OPEX are both highlighted in the renewal and CMD 18-H4 and WiN agrees both of these are important to promoting and evaluating safety culture at Bruce Power.

2. Human Performance Management

WiN observes that the Human Performance program at Bruce Power also supports a strong safety culture. The WiN-Canada reviewer agrees that Bruce Power has workers who possess the necessary knowledge and skills to safely carry out the licensed activities. WiN concurs that Bruce Power has instituted a Fitness for Duty protocol to mitigate risks of fatigue due to severe weather and any minimum complement issues as well as increasing numbers of certified staff. WiN looks forward to reviewing Fitness for Duty, Volume II: Managing Alcohol and Drug Use in the future.

In summary the WiN Canada reviewer concurs that planned initiatives in the Human Performance Management area, particularly training, fitness for duty and staffing plans for the period to 2028 are satisfactory. WiN-Canada would like to see future plans in Human Performance include programs to effectively utilize female talent and diversify the senior leadership team.

3. Operating Performance

In the area of Operating Performance, the WiN-Canada reviewer;

- agrees that Bruce Power continues to operate Bruce A and B within the bounds of the operating policies and principles and the safe operating envelope limits.
- believes reporting in a timely manner to the CNSC is imperative to ensuring corrective actions are taken when necessary.
- concludes that procedures for the operation of Bruce A and Bruce B are sufficient to ensure safety to workers and the public including the Severe accident management guidelines (SAMGs) ensure personnel involved in a beyond design basis accident (BDBAs) have the information, procedures and resources they need.

4. Safety Analysis

In the area of Safety Analysis the WiN-Canada reviewer:

- is pleased with the Fully Satisfactory rating for both Bruce A and Bruce B.
- concur with the analysis around the impact of standing flame in containment, neutron overpower protection trip setpoints, the impact of aging on margins and the Large LOCA safety margins.
- believes the adoption of lessons learned from Fukushima with regards to safety analysis is necessary to assist us in educating the safety of the nuclear industry with the broader audience.

5. Physical Design

In the area of Physical Design, the WiN-Canada reviewer:

- concur that the performance in physical design at Bruce A and Bruce B meets CNSC requirements. The plant design basis, engineering change control and configuration management as well as the fuel usage and fuel requirements continue to be met.

6. Fitness for Service

In the area of Fitness for Service, the WiN-Canada reviewer:

- was particularly interested in Bruce Power's response to the triple seal failure in U3 and is confident in the additional measures put in place to increase monitoring and the level of investigation in place to prevent recurrence of this event.
- notes the improvements to the corrective and deficient maintenance backlogs as a positive performance indicator.
- believes that understanding aging degradation specifically around feeders, steam generators and preheaters and fuel channels is important to the future of the site operation.
- is satisfied in the improvement in the equipment reliability index since 2012. This is a clear indication of the effectiveness of the programs in place to monitor and manage equipment performance and condition.
- is interested in the burst test program and the request to operate beyond 247,000 EFPH.

7. Radiation Protection

Radiation Protection is an area of heightened interest to WiN members in particular and women in general. In the area of Radiation Protection, the WiN-Canada reviewer:

- is pleased that both Bruce A and Bruce B received a Fully Satisfactory rating from the CNSC.
- believes that Bruce Power's radiation program continues to implement an effective ALARA program, based on industry best practices.
- concur that Bruce Power has included radiation safety and keeping doses ALARA in the planning and execution of MCR as well as continued dose reduction initiatives including better filtration the primary heat transport system the use of the Bruce Reactor Inspection and Maintenance System (BRIMS) technology and the use of robotics in the future.
- notes that these items and improve remote monitoring systems are important to women in particular who are pregnant and men who are attempting to become fathers.

8. Conventional Health and Safety

In the area of Conventional Health and Safety, the WiN-Canada reviewer:

- believes that conventional health and safety are issues of particular importance to female employees at Bruce Power, particularly the awareness of occupational hazards and prevention of injury. WiN concludes that this SCA will be adequately managed in the future licence period.
- is concerned about the two worker injury events at Bruce B in 2016 and 2017 but pleased with the response in the You Can Count On Me campaign once again focusing on safety culture at work and beyond.

-concur that the MCR program will need this sharpened focus going forward to ensure all contractors on site abide by the same standards.

9. Environmental Protection

Past studies by WiN-Canada and the Canadian Nuclear Association show that women are particularly concerned with the effects of nuclear power on the environment. Any hazardous releases to the air or water can affect the health of their families. Although these concerns are not unique to women, it has been shown that these risks can more significantly affect women's perspectives of the risks of the nuclear industry.

In the area of Environmental Protection, the WiN-Canada reviewer:

- is concerned that the environment be protected during the MCR period over the next ten years of the licence renewal and beyond.
- concur with the CNSC assessment that the risk to the public due to hazardous substances released to the environment is low to negligible.
- is pleased that Bruce Power includes environmental spill response in their drill activities.
- is pleased with the relationship Bruce Power has with the Department of Fisheries and Oceans with regards to environmental impact and the continuous consultation with Indigenous peoples.

10. Emergency Management and Fire Protection

WiN-Canada research shows that women are particularly concerned about the potential effects of a nuclear accident on their families. One of the most significant impacts of the Chernobyl accident was the increase in thyroid cancers amongst children. Women have been shown to be more concerned about nuclear emergencies.

In the area of Emergency Management and Fire Protection the WiN-Canada reviewer:

- supports the assessment that Bruce Power has sufficient provisions for emergency preparedness and response capability that would mitigate the effects of releases of nuclear substances and hazardous substances on the environment, and maintain the health and safety of persons and national security.
- concur that Bruce Power's fire protection program, including fire response complies with CNSC requirements for fire protection (industrial fire brigade).
- is pleased with the improvements in the Emergency Response Organization including the new Emergency Management Center (including two off site locations and the mobile unit), the change in the 4 crew on call ERO schedule and the structural changes up to the Crisis Management Team.
- is reassured that post-Fukushima both off site gamma monitoring and Emergency Mitigating Equipment have been implemented, tested and used in drill scenarios.
- is impressed with the new fire training facility and pleased that other fire departments are able to use it to train fostering positive community relations.

11. Waste Management

Waste management is also an issue of particular importance to women including safe long term storage of fuel and other nuclear waste as well as the shorter term management day to day. In the area of Waste Management, the WiN-Canada reviewer:

- is pleased that both Bruce A and Bruce B received Fully Satisfactory overall ratings with regards to Waste Management.
- believes that Bruce Power's programs for waste minimization specifically with radioactive waste minimizes impacts from such wastes for both workers and the environment.
- concludes that waste management is an issue of great importance to WiN members and women in general, but that Bruce Power has adequate plans for waste management during the proposed ten year licence renewal and has included the management of waste from MCR activities in their licence renewal appropriately.

12. Security

In the area of Security, the WiN-Canada reviewer:

- observes, based on the review of CMD 18-H4 that security at Bruce Power is given the importance it requires and continues to improve nuclear security.
- is concerned that the security rating went from Fully Satisfactory to Satisfactory due to security practices, drills and exercises but is confident Bruce Power has addressed this through corrective actions.
- is pleased that Bruce Power is leading the industry in North America by including security as part of the Nuclear Safety Culture assessments and supporting other nuclear power plants with the learnings from that assessment.

13. Safeguards and Non-Proliferation

The WiN-Canada reviewer believes that the Safeguards and Non-Proliferation SCA will be adequately managed during the proposed licence period.

- WiN Global is committed to the further development and peaceful use of nuclear science technologies and has an interest in non-proliferation and nuclear security, the WiN-Canada reviewer observes that the measures taken by Bruce Power in the period of continued operation are important to WiN and its members as well as women in general. It appears to the WiN-Canada reviewer that Bruce Power is doing all the right things.

14. Packaging and Transport

In the area of Packaging and Transport, the WiN-Canada reviewer:

- is pleased with the emergency response to incidents involving damages to radioactive packages during shipment and in particular the emergency response personnel from Bruce Power.

15. Other Issues of Concern

There are many other matters of regulatory interest and issues of concern, WiN-Canada will comment on those important to them.

Fukushima Action Items:

The WiN-Canada reviewer is impressed with both the physical and organizational changes to the plant/procedures with regards to post Fukushima upgrades and lessons learned.

-concur with CMD 18-H4 that Bruce Power has made significant progress in addressing Fukushima Action Items specifically the shield tank overpressure protection project, containment filtered venting system, coolant makeup and external event hazard assessment.

Licensee Public Information Program

The WiN-Canada reviewer agrees that Bruce Power has a well-established public information and disclosure program ensuring that information about health safety and security of persons and the environment are effectively communicated to the public.

-the WiN-Canada reviewer accessed the corporate website, social media, the Bruce Power app as well as attended an open house to assess the communication as being thorough, fulsome and transparent.

Aboriginal Consultation and Engagement Activities

The WiN-Canada reviewer recognizes that the Bruce Power site lies within traditional Indigenous territory. It is recognized that Bruce Power has committed to having open transparent, and regular two-way communication with Indigenous communities. WiN-Canada members are interested and supportive of Indigenous rights and collaboration and as such are pleased with Bruce Power's engagement with local communities for both consultation and engagement.

Socio-Economic Impact

Socio-economic impact considerations are another matter related to the Application for Licence Renewal that is important to WiN-Canada. WiN seeks to promote career interest in nuclear engineering, science, technology, the trades and other nuclear related professions specifically among women and young people. Increased participation of women in Science, Technology, Engineering and Math (STEM) is a national goal that will allow Canada to utilize more of its human potential to be more competitive internationally. Continued operation of the Bruce Power site can provide meaningful job opportunities for women in STEM.

Bruce Power has and will continue to have positive socio-economic effects such as increased employment, income, business activity, municipal revenue and support for charities in the community. Bruce Power provides jobs for a variety of highly qualified professionals such as engineers and physicists, as well as supporting positions in both technical positions and beyond.

We in WiN-Canada and WiN-Bruce would like to see our community's young people, especially Indigenous young people remain in the area for employment. These highly skilled jobs are also well paying jobs, which will provide our families and friends with a high standard of living, while working in a safe environment.

Supporting the continued operation of Bruce A and Bruce B for the next ten years including MCR will create many well-paid jobs and provide opportunities for continues skilled employment of women working in the field of nuclear science and technology as well as skilled trades.

Conclusion

This review of the Bruce Power Application for Licence Renewal and CMD 18-H4 concludes that:

-the fourteen SCAs will ensure that Bruce Power will continue to maintain a strong safety culture, manage operational performance and safety analysis, protect workers, the public and the environment and manage waste appropriately.

WiN-Canada supports the Application for Licence Renewal Bruce Power Inc.-Bruce A and Bruce B Nuclear Generating Stations.

Summary

WiN-Canada members are highly skilled workers and would not be working in the nuclear industry if we did not believe in the benefits of nuclear technology to society and its safety. It is important for all of us that when we leave for work in the morning (or the evening) we know that we will return safely at the end of the day and that our families and friends who live in our communities will be safe each and every day.

Due to our day to day interaction with the nuclear industry and our strong belief in the expertise of Bruce Power's employees and their proven history of safe operation, WiN-Canada supports the application before the Commission.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tracy Primeau", with a large, stylized flourish extending upwards and to the right.

Tracy Primeau
WiN-Bruce Co-Chair
WiN-Canada Board Member

References:

1. CMD 18-H4-Submission from CNSC Staff for Bruce Power Licence Renewal
2. CMD 18-H4.1 Submission from Bruce Power for Licence Renewal
3. WiN Global <http://www.win-global.org/>
4. WiN Canada <https://canada.womeninnuclear.org/>
5. Transcript/webcast March 14th hearing.