



Oral Presentation

Exposé oral

**Submission from
Glenn Sutton**

**Mémoire de
Glenn Sutton**

In the Matter of

À l'égard de

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

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

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

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

Commission Public Hearing – Part 2

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

May 28-31, 2018

28-31 mai 2018

527 Stornoway
Kincardine, Ontario
N2Z 0A4

April 11, 2018

Attention:

Louise Levert
Secretariat
Canadian Nuclear Safety Commission
280 Slater St., P.O. Box 1046
Station B
Ottawa, ON
K1P 5S9

Dear Ms. Levert:

**Renewal of Bruce Power PROL (Power Reactor Operating Licence) for Bruce NGS
A & B For 10 Years**

Please find below my comments in support of the renewal of the Bruce Power PROL (Power Reactor Operating Licence) for Bruce NGS A & B for 10 years.

Introduction & Disclosure Statement

I am appearing as a private individual. I am a retired former employee (nuclear engineer) of Ontario Hydro. My experience was at the NPD NGS (Nuclear Power Demonstration NGS) and at Bruce NGS-B. After retirement, I did contract work both at BNGS-A and BNGS-B. I was also a Councillor and Mayor of the former Town of Kincardine and a Councillor and Mayor of the Municipality of Kincardine for 18 years.

I have been a member of the Canadian Nuclear Society since the mid 1970's. As such, I did work on their "Community Outreach Committee" for several years. I also served on their Environment and Waste Management Division. Recently I volunteered to serve as a member of the Canadian Standard Association's Technical Committee for N294 (Decommissioning of Nuclear Facilities). Finally I volunteered as well to serve on the Township of Huron-Kinloss Nuclear Waste Community Advisory Committee in July 2013.

Opening Remarks

I would like to welcome the CNSC to the Municipality of Kincardine again. It is very important for the CNSC to travel from Ottawa and have hearings in local communities that are located adjacent to nuclear facilities. This trend should continue into the future

CMD 18-H4-1-Submission from Bruce Power Licence Renewal for Bruce A and BNGS

This detailed document is a total of 250 pages long.

Attachment A Supplemental Material (35 pages) contains five main sections : Business Plan (2018 – 2028), Fitness For Service Of Pressure Tubes, PSA (Whole-Site Risk), Emergency Management and Community And Indigenous Relations.

Attachment B is a 15 page Update To Performance Review January 2018.

Enclosure 1 is the original Performance Review of Bruce A and Bruce B June 2017. It is a 192 page document. I will comment briefly on two sections of this document:

- a) **15.5: Licensee public information program** – I am aware of most of these activities by Bruce Power. The Community Update is mailed out on a routine basis. The public visitor' centre is always staffed and has new displays on a regular basis. Media releases are covered by local newspapers and electronic newspapers. I did take a bus tour of the site with the Georgian Bay Chapter of the PEO. Bruce Power is always present in the local media making various sponsorship presentations. One year an Open House was held at the Bruce site (Doors Open Ontario). Of particular note is their annual golf tournament where the proceeds are donated to both local hospitals in Kincardine and Southampton. The Kincardine Kinetic Knights are also sponsored. Each summer a Beach Party is held for the local communities and alternates between Kincardine and Port Elgin. All of these activities are summarized in the corporate website on a routine basis.

- b) **15.12: Community And Indigenous Relations** - I have read in the local media of the outreach program for the Chippewas of Nawash Unceded First Nation and Chippewas of Saugeen First Nation who together form the Saugeen Ojibway Nation (SON), the Metis Nation of Ontario (MNO), and Historic Saugeen Metis (HSM). More comments on this will be made later.

CMD 18-H41A Presentation from Bruce Power Licence Renewal for Bruce-A and BNGS

This 56 slide powerpoint summarizes the 250 page detailed submission by Bruce Power. The colour photographs show various improvement that Bruce Power has made in the last several years. The graphs illustrate various data for regulatory requirements.

CMD 18-H4 Submission from CNSC Station Application by Bruce Power for Renewal

This 457 page documents the entire submission from CNSC staff. After a large volume of data and analysis, the CNSC staff have recommended on page 2 & 3:

CNSC staff recommend the Commission take the following actions:

- accept the following conditions to be included in the proposed licence requiring Bruce Power to:
 - implement the Integrated Improvement Plan resulting from the current Periodic Safety Review (PSR)
 - maintain pressure tube fracture toughness sufficient for safe operation
 - implement a return to service plan for MCR activities
 - obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points during return to service
 - conduct and implement a PSR prior to the renewal of the next licence
 - amend the PROL to consolidate the specified licences (Class II and nuclear substances and radiation devices) identified in Part 2 of this CMD that support the operations of Bruce A and B
- authorize Bruce Power to operate Bruce A and B up to a maximum of 300,000 Equivalent Full Power Hours
- delegate authority as set out in Section 5.12 of this CMD
- issue, pursuant to section 24 of the *Nuclear Safety and Control Act*, a single Bruce A and B operating licence to Bruce Power for a period of 10 years from September 1, 2018 to August 31, 2028.

CMD 18-H4A Presentation from CNSC staff on Application by Bruce Power for Renewal

This slide powerpoint summarizes the 457 page detailed submission by CNSC. Once again, this method of presentation condenses a great deal of information into an easy to understand format.

Review of CMD 18-H4.1/18-H4.1A Oral presentation by Bruce Power Inc.

Here are my brief comments on the Oral Presentation by Bruce Power Inc. on March 14, 2018:

- Bruce Power at 6,400 MW of electrical output is the largest nuclear site in the world.
- A recent regional poll gave Bruce Power an 93 % approval rating with respect to safety of their facility.

- Bruce Power produces 30% of Ontario's electricity at 30 % less than the average cost to generate electricity.
- Cobalt 60 is produced and used to sterilize medical supplies and to treat brain tumors.
- From the 2017 provincial Long-Term Energy Plan, Ontario's Independent Electricity System Operator made a long term agreement with Bruce Power. This funds the Major Component Replacement program and Asset Management Program to successfully refurbish the six outstanding reactor units.
- Site electrical output performance has continuously improved during 2013, 2014, 2015 & 2017.
- Chalk River Laboratories test pressure tube specimens.
- Fukushima enhancements and fire protection safety projects continue.
- A new Fire Training Facility has been built.
- A new main Emergency Management Centre (close to site) and separate Emergency Management Centres in Kincardine and Port Elgin have been provided.
- Emergency mitigating equipment has been placed off site (fire trucks, pay loaders and small generators etc.).
- A digital data transmission service has been provided. Backup is via a satellite using a VSAT set-up.
- A major emergency exercise called Huron Resolve was held in 2016.
- In 2016, Bruce Power was registered to the new ISO 14001 environmental management system standard.
- nuclear is at par with hydro and wind and far below solar when it comes to life cycle greenhouse gas emissions.
- Bruce Power does not have an adverse effect on the environment.
- Industry polling shows that 80 % of people in Ontario support refurbishment.
- In 2018, Bruce Power was recertified through the Canadian Council for Aboriginal Business in their Progressive Aboriginal Relations Program as a gold member.
- Other examples by Bruce Power of Indigenous engagement are the Indigenous Community Investment Fund and the Indigenous Employees Network.

Review of CMD 18-H4/18-H4.A Oral Presentation by CNSC Staff

Here are my brief comments on the Oral Presentation by CNSC Staff on March 14, 2018:

- Bruce Power is requesting approval of:
 - operation of Bruce A and B up to a maximum of 300,000 EFPH (equivalent full power hours) each (current licence allows for operations up to 247,000 EFPH).
 - accept the scope of the refurbishment project, as identified in the integrated implementation plan.
 - consolidation of the Class II Nuclear Facilities and Nuclear Substances and Radiation Devices licences with the PROL.

- “Commission Member Document CMD 18-H4, provides CNSC staff’s conclusions and recommendations to support the Commission’s decision on the licence renewal application”.
- CNSC site staff conduct regular inspections and evaluations.
- Bruce Power completed a Periodic Safety Review in support of its licence extension to 10 years.
- Current compliance verification activities by CNSC staff showed that: “CNSC did not identify any significant findings as a result of the compliance activities that were performed at Bruce A and B.”
- With respect to Periodic Safety Reviews: “In accordance with international practice, 10 years is considered an appropriate interval between PSR’s”.

Nuclear Liaison Committee

The Nuclear Liaison Committee of the Municipality of Kincardine meets with Bruce Power on an as required basis. It consists of all members of Council. Both parties discuss items of mutual interest and update each other on their ongoing activities.

Economic Development and Innovation Initiative

Bruce Power and the County of Bruce developed a plan for economic development and innovation in late 2016.

Quoting from an article entitled “Building The Community” from the Candu Owners’s Group: “Bruce Power and the County of Bruce have teamed up to establish a regional Economic Development and Innovation Initiative to maximize opportunities for local communities given Bruce Power’s multi-year Life Extension Program. The goals of the initiative are to:

- Increase regional supply chain presence that meets Bruce Power’s long term needs
- Enhance regional training and employment opportunities
- Work with the community to support an expanded regional supply network and increased employment opportunities
- A Regional Advisory Committee with representatives from Bruce, Grey and Huron counties has been established with the goal to provide input and advice on the development and implementation of an Economic Development and Innovation strategy, while also serving as a resource to facilitate opportunities.”

Companies so far already present, or that have relocated to this region are:

Kincardine:

CTS North America

EMC Power Canada

ES Fox

Framatome

Kinetrics
NA Engineering
RCM Technologies
Sargent & Lundy
Stantec
Tundra Technical
Tiverton:
Black & McDonald
Ian Martin Group
Kinetrices
Modu Strategies
Sierra Systems
Port Elgin:
Acuren Nuclear
BWXT
Hatch
OCNI
Promation
Rolls Royce
SNC Lavalin

Paisley:
Abraflex

Elmwood:
Energy Solutions

Teeswater:
Kinetrics

The presence of these companies locally will ensure that the supply chain for the refurbishment is enhanced and vendor contacts are optimized.

On March 21, 2018, the Organization of Canadian Nuclear Industries opened a new satellite office in Port Elgin. This office is also shared with the new Indigenous Relations Supplier Network to strengthen relationships with local Indigenous communities.

Small Modular Reactor Work Group

In a March 21, 2018 article in the Nuclear Energy Insider (Bruce Power to lead SMR work group as Canada builds business case), it was announced that Bruce Power will take part in a effort to advance the development of SMR's. Quoting this article:

“Nuclear operator Bruce Power is to co-chair a regulatory readiness working group and expand its knowledge of small modular reactor (SMR) technology as part of the Canadian government's new SMR roadmap, Mike Rencheck, President and CEO of Bruce Power, told Nuclear Energy Insider. Last month, the Canadian Ministry of Natural

Resources (NRCan) launched a national study into the potential for on-grid and off-grid applications for small modular reactor (SMR) technology in Canada. Stakeholder engagement will inform a roadmap for SMR development which is expected to be completed in the fall of 2018.

The initial phase will involve a consultation of utilities, regional governments and public groups to better understand the priorities and challenges of the deployment of SMRs in Canada. Participation in the roadmap will then be expanded to other stakeholders including manufacturers, research groups, waste management organizations and the Canadian Nuclear Safety Commission (CNSC).

Bruce Power, Canada's largest private nuclear power generator, will co-chair a regulatory readiness working group which will help define the business cases for SMR deployment, Rencheck told Nuclear Energy Insider in an interview.

"As part of the industry's roadmap we will look at the value proposition for different types of SMR technology categories, then we will form that case," he said. Canadian Nuclear Laboratories (CNL) has designated SMR technology as a research priority and aims to build a demonstration SMR plant by 2026. A recent Request for Expressions of Interest (RFEOI) by CNL yielded 19 proposals for a prototype or demonstration reactor at a CNL site and a further three developers propose to move straight to commercial deployment in Canada. To date, 10 developers have applied to use the CNSC's pre-licensing vendor design review process, which allows developers to engage with the regulator at an early stage on new design concepts."

One of the main objectives of this effort is to build SMR's in Northern Canadian communities that currently use diesel fuel to produce electricity. This would be a significant contribution to reduce the effects of climate change.

Sustainable Energy Research Group

In the April 07, 2018 edition of the Kincardine Record, quoting the following article entitled "Bruce Power signs \$1-million deal for sustainable energy research group":

"Bruce Power, MIRARCO Mining Innovation and Laurentian University have signed a Memorandum of Understanding that will enhance strategic research opportunities, including the long-term potential for Small Modular Reactors (SMRs) to generate clean, low-cost and reliable electricity in rural/remote regions.

"The chairman position will allow MIRARCO to further explore the use of SMRs application to remote mining operations", said Vic Pakalnis, P.Eng., president and chief executive officer of MIRARCO Mining Innovation and the associate vice-president of Laurentian Mining Innovation and Technology.

The five-year, \$1-million research agreement will create an industrial chairman position at MIRARCO Mining Innovation, which will further highlight opportunities in sustainable and clean energy solutions in Ontario's north, bringing an enhanced perspective to the university's current research.

MIRARCO Mining Innovations is currently working with Laurentian on sustainable energy solutions in mining and remote communities.

“The chairman position will allow MIRARCO to further explore the use of SMRs application to remote mining operations”, said Vic Pakalnis, P.Eng., president and chief executive officer of MIRARCO Mining Innovation and the associate vice-president of Laurentian Mining Innovation and Technology”.

This effort will support the previous announcement about the SMR work group. In addition to displacing diesel fuel in Northern Canadian communities, the mining industry will be included in efforts to combat climate change by increased use of sustainable energy.

Note: the potential use of SMR’s for advancements in sustainable energy and the mining industry show the support of Bruce Power in the area of innovation.

Council of the Great Lakes Region Climate Change Study

In the April 04, 2018 edition of the Kincardine Record, quoting the following article entitled “Community Matters: Council of the Great Lakes Region to conduct climate-change study”:

“Bruce Power will partner with the Council of the Great Lakes Region (CGLR) to conduct a climate-change study over the next three years, providing leadership in this emerging area of importance.

The study will provide insight into the following issues:

The state of climate change science in the Great Lakes Region.

The impact of a changing climate on various ecosystems and sectors in the Great Lakes, including the region’s aquatic environment, fisheries and Bruce Power’s operations.

The knowledge and decision-making systems companies and communities need to better manage changing risks as a result of climate change.

The role that Bruce Power and other sectors might play in tackling climate change on a local and regional level, and how companies can adjust their corporate sustainability strategies to limit their impact.

The Great Lakes region is both an economic powerhouse and a globally-significant bioregion and freshwater resource. As the region continues to grow and prosper, it’s crucial that business, government, academia and the non-profit sector work together to

understand and limit the impact of climate change in the Great Lakes, while seeking new ideas and technologies that will help accelerate our transition to a sustainable, low-carbon economy”.

This is another example of Bruce Power working to reduce the effects of climate change.

Bruce Power Kincardine Office Complex & Training Facility

The October 11, 2017 edition of the Kincardine Record described Bruce Power breaking ground on its new Kincardine Office Complex & Training Facility.:

“The 129,000-square-foot building will be located on 7.5 hectares behind existing businesses and homes on Sutton Street and Philip Place. It will hold offices and the unique training tools that will be vital to the success of the Major Component Replacement projects, set to begin in 2020 with Unit 6 and occur on six of Bruce Power’s eight reactors through 2033. These projects will extend the life of the Bruce Power site to 2064.

The new building will feature a two-storey office area, including office space, classrooms and amenities for the occupants; a one-storey, high-bay shop area to host training, shop, and storage space; 330 office workers and 150 workers in the shop space; and parking, amenities, and facilities for about 500 employees”.

Summary & Recommendations

In summary, for the reasons given above I support the application by Bruce Power with respect to their application to renew the PROL (Power Reactor Operating Licence) for Bruce NGS A & B for 10 years. I would also like to point out that there is strong local support for the refurbishment of Units 3 - 8.

I therefore agree with the conclusions of the CNSC staff and urge the CNSC to approve the application by Bruce Power for:

- operation of Bruce A and B up to a maximum of 300,000 EFPH (equivalent full power hours) each (current licence allows for operations up to 247,000 EFPH).
- accept the scope of the refurbishment project, as identified in the Integrated Implementation plan.
- consolidation of the Class II Nuclear Facilities and Nuclear Substances and Radiation Devices licences with the PROL.

Respectfully Submitted


Glenn R. Sutton

P. Eng., PMP