Nuclear Energy Canada Inc.

Community Liaison Committee
Meeting Record

Meeting Date: September 28, 2021

BWXT NEC: Natalie Cutler, Director, Communications & Government Relations
David Snopek, Director, EHS & Regulatory Affairs
Jordan Brown, Fuel Shop Operations Production Manager
Kathleen Augustin, Communications & Community Relations Specialist

CLC Members: D. Gannon, S. Hay, R. Keenan, C. Lemelin, B. Roxburgh.

Absent: J. Ingram, J. Aherne, C. Shadbolt.

Guest: Bill Riddoch, BWXT Medical Ltd.
Julian Amalraj, Canadian Nuclear Safety Commission

Action Items:

Action Item	Responsible	Status
1. Review utilizing radio and newspaper advertising options.	N. Cutler and K. Augustin	Ongoing
2. Provide input on who else could be included in the target audience.	CLC Members	Ongoing
3. CLC to review BWXT NEC's current website, FAQ and provide feedback and ideas on newsletter content.	CLC Members	Ongoing
4. Share video content and infographics with CLC.	N. Cutler and K. Augustin	Ongoing
5. Have medical isotope guest speaker in 2021.	N. Cutler and K. Augustin	Complete
6. BWXT to recruit for the CLC throughout the year (encourage interested parties to apply during discussions)	N. Cutler and K. Augustin	Ongoing
7. Incorporate feedback from year-end evaluation.	N. Cutler and K. Augustin	Ongoing
8. BWXT to review incorporating internal safety spotlights into future CLC meetings.	N. Cutler and K. Augustin	Open
9. BWXT to share information about uranium and beryllium soil sampling with CLC and public once available.	N. Cutler and K. Augustin	Open
10. BWXT to share CLC best practices from industry discussions with CLC	N. Cutler	Open
11. BWXT to review adding more detail to its website on the buildings occupied by BWXT on Monaghan Road	K. Augustin	Open

Discussion Notes:

Due to the COVID-19 pandemic, the meeting was held virtually. The meeting began with a roundtable of introductions, overview of the agenda and a safety moment.

Natalie Cutler reviewed the action items from the previous meeting.

Natalie then asked the CLC Co-Chair to share updates and feedback collected by the CLC members. The Co-Chair noted that there has not been much media, demonstrations or banter in the community regarding BWXT lately.

Next, Natalie shared that she has done some research on effective science communicators for a guest speaker, as this was a suggestion made by a CLC member in Toronto. Natalie noted that she requested a quote from the Canadian Centre for Science Communication and would then review booking a workshop for CLC members and BWXT representatives.

Bill Riddoch, a guest speaker from BWXT Medical Ltd., then provided an overview of nuclear medicine. He began by explaining that radioactive materials are substances that spontaneously give off electromagnetic energy or small energetic particles and that this process is known as Radioactive Decay. Bill shared that there are Alpha particles which deposit lots of energy over short distance, Beta particles which deposit modest energy over longer distance and Gamma rays which are highly penetrating (like x-rays). He noted that Gamma Rays are used for diagnostic imaging and that Alpha and Beta Particles are used for therapeutic applications. Bill continued to share that Nuclear Medicine is a medical specialty that uses radiopharmaceuticals to specifically image and to selectively treat disease – a form of personalized medicine. He also shared that a radiopharmaceutical is a specialized drug containing a radioactive isotope. Bill then outlined the difference between Diagnostic Radiopharmaceuticals and Therapeutic Radiopharmaceuticals. He noted that Diagnostic Radiopharmaceuticals are gamma emitting isotopes that are highly penetrating, detectable by camera and conduct imaging function, not just form. Bill then noted that Therapeutic Radiopharmaceuticals are beta or alpha emitting isotopes that have low penetration and high energy deposition which kills cells and are used (mostly) for treatment of cancer. Next Bill shared the isotopes that BWXT Medical produces. He listed off the following: I-123 used for thyroid imaging, Sr-82 used in rubidium generators for myocardial perfusion imaging, TheraSphere™ used for treatment of liver cancer (contract for Boston Scientific), In-111 Oxine used for infection imaging, Ge-68 used in gallium generators for oncology imaging, and In-111 an isotope used in cancer imaging. Bill shared that there are two in development: Tc-99m an isotope used in a variety of imaging products and Ac-225 a targeted alpha therapy (TAT). Bill concluded that nuclear medicine can be broken down into diagnostic imaging (images the function of cells & organs) and therapy (treatment of disease - typically cancer). He shared that the concept of personalized medicine has resulted in major industry growth and that BWXT Medical has more than 40 years of experience in producing medical isotopes and commits to supporting and growing this promising field of medicine. A CLC member asked about rapid turnaround with radioisotope treatment to a tumour and whether there are side effects. Bill shared that this is different than chemotherapy and that there are fewer side effects, sometimes some nausea, but more from the peptide used to guide the radioisotope to the tumour. He also explained that it is not just radiation that causes the dramatic effects to treat tumours – noting that once you treat the tumour you are able to use less radioactivity as the body's immune system begins to kick-in. A CLC member asked about the growing field of nuclear medicine and what BWXT's presence is in Canada. Bill shared that BWXT Medical has two locations – one in Kanata and one in Vancouver. He noted that nuclear medicine in Canada is very cooperative and

many organizations come together to collaborate. He shared that BWXT Medical may grow its portfolio through collaboration within the industry. A CLC member asked what process is done at each location. Bill shared that in Kanata there is no production on-site but that the site receives products from the reactors. He also shared that in Vancouver, we partner with TRIUMF located within UBC to use their cyclotrons for research and to produce isotopes. The CLC member asked if there was risk involved and whether it was similar to the Peterborough operations. Bill shared that emissions are extremely low at both locations and that the CNSC monitors the doses. Natalie shared that both near zero emissions locations that operate safely, which are similar to Peterborough. A CLC member asked if the medical isotope operations would expand to Peterborough. Natalie shared that we are licenced at the sites for different operations and that we would only do work within the bounds of our licence. A CLC member asked if nuclear medicine focuses on specific types of treatment. Bill shared that the current focus is on cancers (prostate, breast, lung, bone) and untreated diseases (pancreatic cancer). A CLC member asked if the materials used are in high demand in other markets. Bill shared that materials are scarce and that they need to be clever during development of products. A CLC member asked about waste. Bill shared that the industry, FDA, Health Canada, CNSC and NRC are all very cognizant of waste and work to find ways to ensure waste is limited and accounted for.

Next, Kathleen Augustin provided some updates on BWXT NEC's Public Information Program starting by sharing that there was one public disclosure made since the last CLC meeting. She noted that on September 8 at approximately 5:10 a.m. Peterborough Fire Services responded to a sprinkler system alarm at the Peterborough plant. The alarm was determined to be a false alarm and there was no activation of the sprinkler system. There was no health or safety risk posed to the public, employees or the environment. Kathleen shared that the website is up to date with all public disclosures. She continued to share that BWXT NEC will be having a Community Webinar on Tuesday, October 5th starting at 7:00 p.m. and noted this would be an opportunity for participants to ask questions (two-way dialogue). She shared that attendees would be entered for a chance to win a local prize basket and outlined the event would be advertised through social media, targeted advertisements, mailers to 5000 neighbours, and that it would be posted on the BWXT NEC website. Kathleen next shared that the Canadian Nuclear Safety Commission (CNSC) will be holding its virtual Annual Public Meeting where CNSC Staff present their Regulatory Oversight Report for 2020 to the Commission. This meeting is scheduled for December 15 or 16 and will be webcast live on CNSC website. Kathleen noted that written comments from the public are due November 1st. Kathleen then noted that BWXT NEC will be holding an emergency drill in October and that the date is to be confirmed but more information will be shared soon. Natalie also noted that soil sampling for the presence of uranium and beryllium was conducted on August 25th and that one of the CLC members observed the process. The CLC member shared that she wanted to see how the sampling was conducted and had some previous experience with sampling. She noted that the technician was well experienced and careful and followed the usual process. Natalie thanked the CLC member for coming and providing the feedback. She shared that when the results are available that they would be shared. A CLC member asked how many samples were taken. David shared that there were about 11 samples at eight sites and some had field duplicates taken.

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Natalie then provided an overview on the current CLC makeup as well as the plan for recruitment for new CLC members for 2022. She outlined that BWXT would use a multipronged approach to advertisement, such as: social media posts, social media targeted advertisements, mailers, newsletters, website posts, letters to community organizations, fence banners, and email updates. Natalie shared that the application form will be made available on the website soon and outlined that the company is looking for the following applicants: a local first responder (fire or police) and an NGO environmental group representative. Natalie then shared that the current CLC has 8 external members and that according to the Terms of Reference, the maximum is 12 members. She continued to note that the minimum is a two-year term with the option to extend for a third.

As she had done in the previous meeting, Natalie then re-shared with the CLC some concerned citizens and groups in the community to ensure CLC members understand the broad perspectives in the community. Natalie shared the website for a local Peterborough Group called Citizens Against Radioactive Neighbourhoods (CARN) and noted they have Facebook and Twitter accounts. Natalie shared that there is a Facebook group called “Stop BWXT’s Toronto licence renewal in West End Toronto” and encouraged CLC members to look at the page and outlined that the page is now private so members need to request to join. Natalie also shared a group called Global Nuclear Awareness and the name of a local activist, Zach Ruiter. She noted that Zach writes for West End Phoenix, Now Magazine, Trent Arthur and shared he was recently featured on Project Save the World Podcast. Natalie shared a group called Ontario Clean Air Alliance and noted there is a change.org petition called Stop BWXT’s licence renewal.

The meeting terminated. Year-end meeting to be scheduled in November, 2021.