

Annual Report 2022

Adaptive Phased Management (APM) Project Environment Review Group (ERG)



The ERG: Tammy Tremblay, Helen Temple, Bill Ross, Suzanne Livingstone (at the WLON-Ignace site August 2022)

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1 Message from the Chair

I am happy to share that in August of 2022, I was nominated for the role as Chair of the Environmental Review Group (ERG) and humbly accepted the position. What an exciting time to take on this new role as the ERG were able to meet the Council of Knowledge Holders for the first time. The Council of Knowledge Holders is an advisory group that helps align the Nuclear Waste Management Organization (NWMO) with Indigenous Knowledge (IK) and traditional practices with Adaptive Phased Management (APM). The timing is perfect to develop this relationship as the ERG is working towards building capacity with IK and how it can be applied to impact assessment.

In August, the ERG met with the NWMO at the Northwest Site, which is one of the remaining two areas in the site selection process for APM. Now having visited both sites, it has personally provided a better understanding on the key ecological differences and paints a better picture on the location dynamics of each site. Much work is needed to fully appreciate each site and the communities in both regions to help determine the best path forward.

I am pleased to report that the NWMO has been working diligently to ensure that all the appropriate studies are put in place and have been integrating and building upon their Reconciliation Policy into all the work that they do. The NWMO have been kindly accepting and incorporating the advice from the ERG. We are fortunate for our exceptional working relationship and that their staff are knowledgeable and a delight to work with.

I am lucky to have such admirable and talented colleagues. It is my pleasure to thank Helen Temple for her service on the ERG and welcome back Suzanne Livingstone (April 2022) after her maternity leave. I look forward to the work ahead as we continue to advise the NWMO on impact assessment planning and environmental studies, and how to integrate IK and international best practices. Miigwetch!

Tammy Tremblay (Chair of the ERG), MG KWE Consulting, Ontario, Canada



Bill Ross, Emeritus Professor of Environmental Design, University of Calgary, Calgary, Canada



Suzanne Livingstone, Senior Principal Consultant, The Biodiversity Consultancy, Cambridge, UK



2 About the ERG

The Environmental Review Group (ERG) provides independent expert advice and guidance on environmental programs and impact assessment to the Nuclear Waste Management Organization (NWMO). The group contributes to the establishment of a transparent process to ensure environmental aspects of the Adaptive Phased Management Plan (the safe, long-term management of used nuclear fuel) are in line with both national and international best practice.

We understand impact assessment is not solely a scientific and technical process, and believe it is essential for NWMO to engage with both Indigenous and non-Indigenous communities who are affected by the proposed project (their livelihoods, their lifestyles, their rights and their desires for sustainability). For this reason, we not only provide technical input, but strategic advice on the importance of early, pro-active, and transparent engagement with communities, and on the development of effective and long-lasting relationships.

The NWMO can use a combination of western science and Indigenous knowledge to provide reliable information enabling them to continually improve the sustainability of the APM Project. NWMO can use strong community relationships to effectively to create mutually beneficial outcomes for both the NWMO and stakeholders and rights-holders.

The ERG is composed of three members, each with a different, but complementary expertise: impact assessment professional practice, biodiversity assessment and management, and the integration and balancing of Indigenous knowledge and western science. As appointed individuals, we are expected to use our professional judgement and serve in an independent capacity. We conduct our input based on four core principles:

- **Independence:** We will retain our independence from NWMO to provide unbiased guidance. We act as individuals within our specialist fields but respond to NWMO as one voice to offer multidisciplinary oversight.
- **Transparency:** We ensure opinions and advice given to NWMO are transparent and justified, based on expert opinion, and backed by science/Indigenous knowledge.
- **Inclusivity:** We will ensure inclusion of Indigenous knowledge and the social aspects of the project when providing guidance on environmental issues.
- **Integrity:** We will approach all requests from the NWMO with an open mind and will carry out our work with diligence and integrity.

Our aim is to ensure that the information gathered through environmental programs and in preparation for the impact assessment will be of the highest quality. Only then, we believe, will the NWMO be able to use that information to improve the project and to prepare a truly effective and inclusive impact assessment. In short, our advice to the NWMO is intended to enable it to create a sound, sustainable and just APM project.

3 ERG activities

3.1 Meetings and workshops

3.1.1 NWMO – ERG Meeting (March 2022)

Video Conference with the NWMO (2022-03-23)

Content: We were told that the NWMO is growing and realigning itself to move beyond site selection, into the regulatory phase, and eventually to operate as a licensee. The ERG suggested that there is a need for the NWMO to break down the current silos and work together. Practical alignment of Indigenous Knowledge and contemporary science, a requirement of the Impact Assessment Act, was discussed. It continues to be a challenge not only for the NWMO but most organizations/institutions in Canada who are striving to do so. The NWMO, we were told, is advancing towards an IK-informed sustainability policy.

Discussions on impact assessment studies relating to the excavated rock management area had occurred during previous ERG-NWMO meetings and workshops. The NWMO provided an update on actions that are being taken to address some of the issues the ERG raised on impact assessment studies associated with the excavated rock.

It was noted that WLON has recently expressed interest in acid generation potential from the excavated rock. Opportunities to collaborate with WLON on the design and implementation of these studies are being sought.

ERG advice: Regarding the timeline (early engagement with affected communities) and impact assessment planning, the ERG suggested to the NWMO that the APM timeframe is both a challenge (so much to do in so little time) and a gift (the earlier start than is usual has allowed more to be done) when defining what sustainability means for the NWMO and other aspects of the impact assessment. The ERG recommends that the NWMO aggressively continue its forward-planning.

A discussion about biodiversity led the ERG to recommend landscape approaches to project planning and impact assessment when dealing with biodiversity.

The ERG expressed that NWMO is optimistic regarding its timelines to be sufficiently ready for initiating the regulatory process in 2025. Substantial gaps need to be addressed in project design, preliminary (baseline) studies, and effects assessment prior to filing both the Initial Project Description and then the impact assessment.

The ERG recommended the NWMO seek advice on study methods and results interpretation from relevant federal authorities, especially Natural Resources Canada.

3.1.2. Virtual meeting to participate in WLON cultural training (April 2022)

Video Conference with the NWMO (2022-04-28)

Content: In preparation for a planned meeting with the Wabigoon Lake Ojibway Nation (WLON), we met with culturally knowledgeable people from both WLON and NWMO, who walked us through cultural awareness training the WLON developed. This cultural training is required by WLON of all contractors before they are allowed to work in the field at the northwest Ontario site.

ERG advice: We offered no advice, but we were very pleased to have had this opportunity to learn important cultural lessons, lessons that will help us to better engage with the WLON and which should help us to offer better advice to the NWMO regarding the IA.

3.1.3. IAIA Vancouver Meeting (May 2022)

In person meeting (2022-05-06)

Content: This was a short (breakfast) meeting to take advantage of the fact that Bill and Tammy as well as Allan Webster and Melissa Mayhew of the NWMO were attending the annual conference of the International Association for Impact Assessment (IAIA) in Vancouver. Some planning issues, especially regarding the agenda for the August workshop, were discussed.

ERG advice: None.



Tammy and Bill at IAIA conference May 2022

3.1.4. ERG field visit (August 2022)

ERG in Canada in person

3.1.4a. NWMO meeting – IA and Indigenous Knowledge and Impact Assessment

The NWMO provided high level updates on the issues of most concern in the two potential siting communities (in impact assessment, these (things worth studying in the conduct of an IA) are called valued components (or VCs)). The efforts NWMO is taking to work with communities to better understand their priorities before site selection was presented. Recent findings from the municipal community studies were presented and discussed.

Dealing with members of the public who are opposed to the project was another topic. It was agreed that critical voices are important in the process, and that the onus should be on the NWMO to continue to provide opportunities to engage in a way that is suitable for those with differing points of view and information needs.

ERG advice: Regarding the selection of VCs, the ERG recommended that NWMO be sure it has identified what needs to be studied to support communities in their own decision-making. Any necessary studies should be completed with sufficient time and detail to provide communities with the information they need. In selecting preliminary studies to undertake, ERG also recommends considering various scenarios and applying systems thinking when determining the potential impacts and the need to carry through to full impact assessment.

The ERG strongly emphasized the need to ensure that project-related impacts to a VC are addressed holistically and, in their totality, ensuring that all potential impact pathways are addressed to fully describe the impacts that can be expected to the VC, and that the balance of positive and negative consequences are fully and transparently described. Positive and negative impacts should be described for different groups of affected people as they may differ for different groups.

3.1.4b. Council of Knowledge Holders, NWMO and ERG at Casino Rama (2022-08-23-24)

ERG met with Council of Knowledge Holders and made a presentation to the Council. The intended outcome was to start to build a relationship between the two independent advisory bodies. In our presentation, we shared the principles on how we work and gave an overview of our role in advising the NWMO on carrying out its impact assessment studies related to the biophysical environment.



Bill Ross making the presentation to the Council of Elders and Youth at Casino Rama, August 2022

The Council shared its wisdom, encouraging the ERG and the NWMO to emphasize respect, relationships, and reciprocity in all interactions with Mother Earth. The Council also urged further learning on Traditional Law and bringing the environmental expertise of Elders fully into the NWMO's environment program. The Council raised questions on how the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), Traditional Laws, recognition of jurisdiction, and honouring of Treaties within the context of the impact assessment can advance Reconciliation.

The Council shared with both the ERG and the NWMO the importance of respecting and protecting Indigenous Knowledge (IK), in conducting impact assessment.

Joanne Barnaby made a presentation regarding the development of an Indigenous-led impact assessment.

The Council asked the NWMO if it is open to working with Indigenous communities and organizations near the potential siting areas to support a similar process for Indigenous-led assessment. NWMO leadership confirmed that NWMO is actively supporting such initiatives through financial and other capacity building.

ERG advice: The ERG provided an explanation of what ERG is and who we are to the Council of Knowledge Holders. We made no recommendations to the Council, but we received important advice from members of the Council regarding the understanding and use of Indigenous Knowledge in our work.

3.1.4c. ERG Meeting in Ignace (2022-08-25) (new chair and workplan discussion)

The ERG selects its Chair each year during the Workshop. It meets alone, without members of the NWMO staff for this and other ERG deliberations. Tammy Tremblay was elected Chair.

We discussed the important topic of how we could better make use of both Indigenous Knowledge (IK) and western science (WS) and how these could be aligned in the impact assessment. We discussed how we could improve our capacity to understand IK, keeping in mind our remit – which is to advise the NWMO. We also agreed we should write a letter to the Council thanking it for allowing us to attend its meeting and exploring how best we could work together in future.

We discussed other aspects of the Workshop and noted there has been a lot of data collected at both sites. However, the NWMO may be behind in interpreting this data and communicating it. We determined we would be willing to offer advice to the NWMO regarding prioritisation of the most important aspects of these preliminary studies. This could well be done through our review of the work as it becomes available.

The ERG is pleased to hear of the announcement of extending the decision of which site to propose by a year. This will enable NWMO to complete more preliminary studies and community engagement and thus be in a better position to conduct the impact assessment.

ERG advice: None offered.

3.1.4d. Site visit to the WLON-Ignace site (2022-08-26)

The ERG made a visit to a number of sites within the Area of Interest and Local Study area for the APM Project in the potential WLON-Ignace siting area. This siting area is situated on the Revell Batholith, south of Highway 17 on Crown Land.

The recently installed meteorological monitoring station was visited and an overview of the data parameters collected was provided. We also had the opportunity to visit upland and lowland areas that are sampling/surveying locations for various biophysical environment baseline studies. Kevin Muloin (NWMO staff) noted that WLON members continue to have ceremony and undertake traditional studies within the potential siting area, and to participate in the western scientific biophysical environment baseline studies. We are very appreciative of receiving such site-specific information.

The ERG and NWMO staff discussed the importance of advancing rigorous baseline studies on groundwater conditions and the need for a sophisticated flow model that adequately captures the interface between groundwater and surface water. The ERG cautioned the NWMO technical staff on setting appropriate model boundaries to generate a reliable model for impact assessment.

ERG advice: We encouraged work on groundwater and its interaction with surface water, as this appears to be a very important VC for the project, both at the WLON-Ignace site and at the SON-South Bruce site.



NWMO and ERG at WLN-Ignace site August 2022



Meteorological Monitoring Station WLN-Ignace site 2022

3.1.5. NWMO - ERG Meeting – (November 2022)

Video Conference with the NWMO (2022-11-10)

Content: We were provided with an update on excavated waste rock management environmental studies, which we very much appreciated. The update included information relating to acid drainage potential among other geochemical characteristics of rocks from depth that will require long-term management as part of The APM Project and will need to be dealt with in the IA. We also discussed the review schedule for biodiversity studies with the ERG.

ERG advice: We stressed the importance of the excavated waste rock studies because of the related water quality effects that could be caused by either acid generation or metal leaching from the waste rock pile.

3.2 Review of documents

3.2.1. NWMO - ERG Meeting – Review of Confidence in Safety Reports (August 2022)

Video Conference with the NWMO (2022-08-16)

Content: The NWMO had released “confidence in safety” reports, one for each of the two sites to reassure the respective communities of the safety of the APM project. The ERG briefly reviewed the reports and offered some advice. There was no suggestion by the ERG that the APM project would be at all unsafe, but the ERG believes that the reports were expressed in language that was too technical, and used safety thresholds and standards that, while they were widely accepted in the regulatory world, did not reflect community discussions that could have been carried out prior to releasing the documents. The authors of the reports provided responses to ERG concerns and an amicable exchange ensued.

ERG advice: The ERG provided the advice suggested above because, in many ways, the content of the “confidence in safety” reports was much like material that could later appear in an impact statement, and we wanted the NWMO to ensure the impact statements would become clearer and more based on community engagement.

3.3 Challenges encountered

The ongoing COVID-19 pandemic and associated restrictions on travel and face-to-face meetings have relaxed somewhat. We are delighted that we met up for an in-person workshop and a site visit to WLON-Ignace in August. However, we continued to take precautions, with Covid testing daily and mask wearing when in the meeting with the Council of Knowledge Holders.

The ERG was scheduled to meet with WLON while in the area in August; however, due to unforeseen circumstances, the meeting was cancelled. An alternative meeting date was selected but again the meeting had to be rescheduled. The ERG is hopeful that a meeting with WLON can take place in 2023.

4 Consolidated advice from the ERG

This section of the report states the consolidated advice from the ERG to the NWMO, in light of the work carried out over 2022:

1. As we noted in last year's annual report and in this report, it is very clear that water will be an important valued component in the impact assessment. NWMO has increasingly carried out studies related to water this year. Such studies should continue, with a focus on information needed by NWMO for the APM project design and for the impact assessment, and by the communities for their decisions concerning the project.
2. The inclusion of IK and WS is explicitly required under the Impact Assessment Act and is essential if NWMO is to be successful in carrying out the APM project (both are well known to NWMO). Continued engagement with both Indigenous and non-Indigenous communities will be very important as NWMO gets closer to APM project decisions.
3. The year 2023 will be very important in progressing to the next steps of the APM project. It is very important for the NWMO to continue to progress and accelerate on both community engagement and preliminary environmental studies.

5 Potential activities for 2023

This section makes suggestions of potential activities for 2023. These may be subject to change but are based on current knowledge and input from NWMO.

- Continue to build and strengthen our relationship with the Council of Knowledge Holders after meeting them at Rama in August 2022.
- Provide sound recommendations on the impact assessment process.
- Continued work on sustainability and what that means for the AMP Project in the long-term. Sustainability is one of the factors that must be used by the Government of Canada in determining whether the Project is in the public interest. NWMO is working towards a reconciliation-informed sustainability assessment framework.
- Provide suggestions to help NWMO draft project descriptions for the siting area selected.
- Review of impact assessment methods for the biophysical environment, including a process for Valued Component identification.
- Review of early baseline and assessment reports related to the biophysical environment – expected to be carried out in Q1 and 2 of 2023.
- A visit with WLON (due to being unable to meet with them previously in August 2022).

- Participation in the NWMO's Reconciliation Training Series. Planned to be held in person at the end of March 2023. A visit to the Oakville facility to see progress since the previous ERG visit in 2018.

6 Appendix 1: Bios of current members of the ERG

Tammy Tremblay BSc (ERG Chair)

Tammy Tremblay (Monedo Giizhigo Kwe) is a member of Sagamok Anishnawbek First Nation and part of the Marten (waabzeshi) Clan (doodem). Ms. Tremblay is the Founder and operator of MG Kwe Consulting, an independent consultant that provides expertise on building healthy relationships with Indigenous people and the land. Tammy brings over 10 years of experience within First Nations Environmental and Natural Resource Management in the Robinson Huron Treaty and Treaty 9 territories. Tammy has limitless experience with boots on the ground and strives towards balancing traditional knowledge and western science. Tammy is a strong believer in collaboration through all forms of communication that is needed to build healthy relationships amongst First Nations, supporting organizations, government, and industry. Tammy values the 3R Principle (Respect, Reciprocity, Responsibility) and believes this principle should be applied to all projects and initiatives.

Dr. Bill Ross

Dr. Bill Ross is an emeritus professor of Environmental Design at the University of Calgary. His scholarly expertise is the professional practice of impact assessment. He has been teaching impact assessment since 1973 and has served on eight Canadian environmental assessment panels from 1978 to 2015. Dr. Ross taught impact assessment training courses around the world, has many papers and professional publications, and has received awards including the Lifetime Achievement Award from the International Association for Impact Assessment. From 1997 to 2015, he served on the Independent Environmental Monitoring Agency, an independent watchdog for good environmental management at the Ekati Diamond Mine in Northern Canada. In 2019, Bill was appointed to the Technical Advisory Committee of the Impact Assessment Agency of Canada. In 2020, he was appointed to the Technical Advisory Committee of the Indigenous Centre for Cumulative Effects and in 2022, he was appointed to the External Advisory Committee for the T̓silhqot'ín National Government to help with the development of an Indigenous led Impact Assessment Process.

Dr Suzanne Livingstone

Suzanne has 25 years' experience in global biodiversity conservation and has been working in the field of biodiversity and business since 2011. She has extensive experience working internationally with large development projects (particularly mining and renewables) in both terrestrial and marine environments. Suzanne specialises in ecological and environmental impact assessment, specifically to understand and manage biodiversity risk. Her expertise includes navigating IFC PS6 and other international best practice standards. She has considerable practical experience in biodiversity risk profiling, critical habitat assessment, strategic baseline survey design and management, biodiversity action plans, offset design, strategy, feasibility assessment and implementation planning, as well as monitoring plans. She also has experience of working directly with lenders on E&S due diligence. Suzanne is skilled at technical delivery and project management of the biodiversity-related risks and opportunities of large infrastructure projects, providing strategic advice and guidance to clients. Prior to TBC, Suzanne worked for the IUCN Red List Unit and several international NGOs, including Conservation International and WWF. In these roles, she developed conservation programmes on the ground in the Caribbean and Africa, resolving conflicting demands of diverse stakeholder groups.