



NUCLEAR WASTE MANAGEMENT ORGANIZATION SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES


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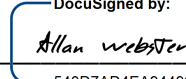
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*Annual Report (2020) of the Adaptive Phased Management (APM) Environment Review Group (ERG)*

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## Annual Report (2020) of the Adaptive Phased Management (APM) Environment Review Group (ERG)



**Photo credit:** Helen Temple. The ERG: Bill Ross (top left), Suzanne Livingstone (top right), Helen Temple (past member, bottom left), Tammy Tremblay (bottom right).

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## 1 Message from the Chair

I am pleased to report that the Nuclear Waste Management Organisation has listened carefully to our advice and accepted it. The Environment Review Group (ERG) is confident that the NWMO wishes to carry out its environmental studies and its impact assessment well. It also appears willing to use the findings of the studies and the assessment in such a manner as to benefit the environmental and human systems in the region surrounding whatever site is ultimately chosen. Moreover, the staff at NWMO with whom we interact regularly are smart, helpful and pleasant to work with.

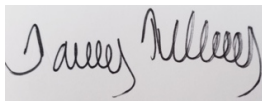
We will, of course, continue to argue strongly for the adoption of good international practice in carrying out the work in which the NWMO is engaged. The ERG is proud of the advice we have offered to date and pleased with the response received from NWMO. We have, for example, pointed out the critical need for the various consultants working to carry out the environmental studies to cooperate and collaborate. This is important both because there may be opportunities to do the work at a lower cost, but, more importantly, only with collaboration can the results of one study (e.g., the environmental media) be properly used to support another (e.g., biodiversity). This advice has been fully accepted both by NWMO and by the respective consultants, who now meet regularly to implement these ideas. A second example involves engagement of NWMO and the consultants with Indigenous communities near the sites. Our strong recommendations are more fully fleshed out later in this report. Again, the acceptance and implementation of our advice is satisfying to us and we expect it to be quite beneficial to the NWMO.

I cannot help but observe that my two colleagues on the ERG, Suzanne and Tammy, are also both talented and pleasant to work with. This makes the ERG tasks so much easier to do than might have been the case. It has been a pleasure working with them. Similarly, it is my pleasure to thank Helen Temple and Ross Assinewe for their service on the ERG. They have stepped back from the ERG and been replaced by Suzanne Livingstone and Tammy Tremblay.

**Bill Ross (Chair of ERG), Emeritus Professor of Environmental Design, University of Calgary, Calgary, Canada**



**Tammy Tremblay, MG KWE Consulting, Ontario, Canada**



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



## 2 ERG updates

### 2.1 Who is the ERG?

The NWMO has been tasked with implementing Canada's plan for long-term management of used nuclear fuel. The plan is referred to as the Adaptive Phased Management (APM) Project. The Environment Review Group (ERG) was established in 2018 by the NWMO for the purpose of providing independent expert advice and guidance on environmental programs and impact assessment planning for the APM Project. The ERG advises and provides guidance to the NWMO on developing an effective impact assessment processes, environment programs, ensuring the inclusion of Indigenous Knowledge, and international best practice.

The group has three members and connects quarterly or as needed, to discuss issues relating to assessing potential impacts of the APM project on the natural environment. The chair of the ERG is Dr. Bill Ross (independent consultant) and the other two members are by Dr. Suzanne Livingstone (The Biodiversity Consultancy) and Tammy Tremblay (independent consultant). The biographies for the members are detailed in Appendix 1.

There were some changes in the ERG in early 2020, and two members left the group: Dr. Helen Temple (The Biodiversity Consultancy) and Ross Assinewe (independent consultant). These two were replaced by Suzanne and Tammy.

### 2.2 ERG Statement of Principles

At the suggestion of the NWMO, the ERG have been working on the development of a 'Statement of Principles', which outlines the principles under which the ERG undertakes their work with the NWMO. As part of the statement, the ERG has set out four core principles, which are included below.

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 provide multidisciplinary oversight.

**Transparency:** We ensure that our 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.

This document is currently in progress, was drafted in 2020, and will be finalised in Q1 2021.

## 3 ERG activities

### 3.1 ERG activities in detail

The main activities of the ERG in the reporting period are the following:

#### Meetings and workshops

1. Opportunity for new ERG members to meet NWMO team and receive updates on NWMO's Impact Assessment activities, April 2020

**Method:** Video Conference with the NWMO

**Content:** Tammy Tremblay and Suzanne Livingstone were welcomed to the ERG, and briefly introduced themselves. The meeting dealt with updating work being done by NWMO and its consultants under the constraints of the Covid-19 pandemic. Discussion about sustainability under the Impact Assessment Act was held and a foundation was laid for future work on this subject. NWMO explained how ERG advice, especially regarding cumulative effects was being integrated into baseline program design.

**ERG advice:** The ERG committed to look for lessons that might be useful to the NWMO from the Ontario Power Generation Low and Intermediate Level Waste Deep Geologic Repository impact assessment recently carried out approximately 45 km from the Southwestern Ontario site. The ERG also noted that there is an on-going impact assessment for a proposed Iron Ore project near the Northwestern Ontario site and that it would be advantageous for the NWMO to be familiar with the data and anticipated impacts of that project due to the close proximity to the Revell study area.

2. Update on progress for South Bruce and Ignace site activities, July 2020

**Method:** Video Conference with the NWMO

**Content:** This meeting dealt with updating the South Bruce site and Ignace site activities by NWMO, and discussion of sustainability in impact assessment under Canada's new Impact Assessment Act including discussion of a NWMO draft document concerning sustainability. The Canadian Impact Assessment Act has a new requirement to examine the extent to which a proposed project, such as the APM project, contributes to sustainability, hence the importance of dealing with this topic.

**ERG advice:** NWMO should ensure equitable opportunities for Saugeen Ojibway Nation (SON) in the design and execution of the baseline programs as well as involve SON meaningfully throughout the planning and impact assessment process. The NWMO should work hard to foster a good relationship between Indigenous communities and local municipalities regarding the APM Project. The NWMO should prepare an impact assessment that is credible, reliable, appropriate, and defensible.

3. Detailed look at South Bruce site, with a focus on sustainability and implementing reconciliation, September 2020

**Method:** Video Conference Workshop with the NWMO (2020-09-15, 16, 17 and 21)

**Content:** This workshop included a large amount of information about the South Bruce site and region. (A site visit to the area had been planned but the Covid-19 pandemic restrictions precluded such a visit). The workshop included presentations by NWMO staff working directly at this site, and drone videos showing the area. The workshop included continuing discussion about sustainability, presentations on progress on implementing reconciliation by NWMO, and, most significantly, a role-playing exercise about the meaning of sustainability using an interactive software program. Tammy Tremblay provided a presentation in Indigenous views of sustainability and Dr. Suzanne Livingstone provided a presentation on Biodiversity and sustainability assessment.

**Photos taken during the September workshop:** Top left: Bob Watts sharing information on the reconciliation program; Top right: Melissa Mayhew smiling (as usual), providing information to the ERG; Middle left: Bill Ross sharing some sage advice to the NWMO; Middle right: Helen Temple sharing some ERG insights; Bottom left: ERG and NWMO colleagues online; Bottom right: Brainstorming and sticky notes on sustainability planning.





**ERG advice:** Aside from making suggestions concerning sustainability in impact assessment, the ERG suggested that specific examples of Reconciliation actions should be given wherever possible. We suggested that land-based learning, learning from Elders, and sharing knowledge through stories and art are good ways of building a good working relationship with Indigenous peoples.

4. Project update including NWMO's role, and further discussions on sustainability, November 2020

**Method:** Video Conference with the NWMO (2020-11-20)

**Content:** This meeting included the NWMO describing its new role leading the development of an integrated radioactive waste management strategy for Canada. Further discussion of sustainability in impact assessment was a major part of the meeting, as was the question of alternatives to the APM project, how to select valued components to study in the impact assessment and how best to combine western science and Indigenous knowledge in impact assessment (required in the Impact Assessment Act).

**ERG advice:** The main discussion at this meeting related to sustainability and how it contributes to the decision by the Government of Canada's determination whether the APM project would be in the public interest. The ERG pointed out that six matters must be considered in such a decision: the Panel report, sustainability, significant adverse effects of the project, effectiveness of mitigation measures, the impact on Indigenous groups and the rights of Indigenous peoples, and effects of the project on the government's climate change commitments and obligations. Much discussion of these matters followed.

### **Review of NWMO documents**

In addition to the above meetings, the ERG reviewed several documents and developed advice to the NWMO and its consultants, with a view to improving the document content and vision. We provided formal evaluation of the following documents:

1. Environmental Media Baseline Program Design – Northwestern Ontario Region (Canada North Environmental Services, Feb 2020)

**ERG advice:** The ERG suggested that Indigenous communities desire to have the impact assessment and monitoring work done in a culturally appropriate manner, e.g., using ceremonies. We also indicated there is a need to pay more attention to cumulative effects, even during baseline studies. A third important suggestion was the need to select some effects that would need much more detailed monitoring programs: effects that are less certain, of great importance to affected peoples and/or government regulators and may require challenging mitigation. These should have monitoring programs that allow much better understanding, and that provide essential information in the event of environmental surprises. For such valued components, monitoring results should be available so that, should there be an appearance of some sort of related upset, NWMO will have developed a good understanding of the systems that affect the component and hence, will be in a good position to develop and implement a sound mitigation



measure. These recommendations were all accepted by the consultant and inserted into the preliminary design for the baseline program.

2. Biodiversity Impact Studies – Northwestern Ontario Region: Best practices and preferred approach (Zoetica, April 2020).

**ERG advice:** Overall the ERG thought this was a good document and made comments in order to suggest improvements. Comments focused on wording to make things clearer, advice around ensuring that the Impact assessment Agency of Canada (IAAC) the Tailored Impact Statement Guidelines (TISG) are used in determining Valued components and are followed in general, understanding the Area of Interest of the Project, the overall structure of the document, the significance of monitoring and ensuring clarity between doing research and mitigation measures, ensuring inclusion of ‘Species at Risk’, and clarity around achieving the goal of no net loss of biodiversity. Advice around stakeholder engagement was focused on providing more opportunities for engagement and capacity building (in both directions) and combining western science and traditional knowledge in the field, to ensure the inclusion of ceremony and sacred places and to check lists of culturally significant plants with indigenous communities, and generally ensure to use indigenous communities as a source of information.

3. Biodiversity Impact Studies – Southwestern Ontario Region: Best practices and preferred approach (Zoetica, December 2020).

**ERG advice:** This document had taken on much of the ERG advice from the review of the Northwestern Ontario Region. Significant advice given focused around how to manage and discuss cumulative effects and adaptive management and valued components in the report. Again, there were questions on the intertwining of traditional and western science and how this will actually happen, and questions on the cultural importance of some taxonomic groups of species. Commitment to no net loss of biodiversity was raised again with the suggestion of strengthening language within the report. The ERG requested to see the baseline survey design resulting from the work carried out in this document.

### 3.2 Challenges encountered

The major challenge that ERG faced in 2020 was the Covid-19 pandemic. Travel restrictions did not allow for any in person meetings, where interactions with ERG members and NWMO staff are invaluable. More importantly, the pandemic did not allow for any site visits to the Southwestern Area of Interest, where deeper connections could have been made through ceremony, getting out on the land and interacting with the local indigenous groups.

The ERG has overcome this challenge in part by having online workshops and meetings with the NWMO and having more regular online ERG meetings to discuss findings and advice given to NWMO. The ERG remains hopeful that a site visit to the Southwestern AOI will occur in 2021.

## 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 2020:

- The ERG notes that there are a number of different consultants working on the AMP project, and advises that the NWMO ensures and fosters open and transparent and regular coordination and correspondence between consultants e.g. consultants CanNorth and Zoetica. This advice has been noted and generally accepted by the NWMO.
- ERG highlights the importance of understanding differing levels of monitoring required for a valued component (VC). Some impacts on VCs are well understood and are easily managed if adverse impacts arise. Some are less certain, of great importance to affected peoples and/or government regulators and may require challenging mitigation. The former can be routinely monitored. The latter should have monitoring programs that allow much better understanding, and that provide essential information in the event of environmental surprises. While not at all certain, we suspect that Indigenous rights and culture, hydrogeology, water quality and 'species at risk' are in the important category. For these VCs, we suggest robust monitoring and careful development of understanding the systems.
- The ERG highlights engaging and working closely with Indigenous peoples as essential because of IAAC requirements, Constitutional protection and, especially, because they will be neighbours and employees of APM project should it proceed. Several impact assessment principles come together to recommend this strongly.
  - Indigenous views and approaches to sustainability need to be integrated: land-based learning, learning from Elders, use of ceremony in carrying out studies.
  - Requirements in the Impact Assessment Act to consider the impact that the project may have on any Indigenous group and any adverse impact that the project may have on the rights of the Indigenous peoples of Canada.
  - Local Indigenous peoples have much valuable expertise to offer to NWMO as it carries out its studies. They should be included in the project as much as possible, not only for IK purposes, but for opportunities in field work and monitoring.
- The ERG is pleased to see that the NWMO has stated that a goal of the Project is to achieve no net loss (NNL) for biodiversity. While this is an inspiring goal to aim for and fits in well with the overall sustainability goals for the project, the ERG advises that the NWMO look into what that actually means for the project in terms of measuring biodiversity losses and gains and being able to show progress and that NNL has been achieved at some point in the future of the project. This not a small commitment, and resources will be required (financial and human) to do this properly.

## 5 Potential activities for 2021

This section makes some suggestions of potential activities for 2021. These may be subject to change but are based on current knowledge and input from NWMO.

### ERG:

- The ERG has plans to complete the Statement of Principles document and to share it with NWMO in the first quarter of 2021.
- The ERG is also hopeful to be able to get into the field to make useful visits to the two proposed sites during the baseline data collection, and to meet with communities, when this is allowed and safe (from the COVID perspective).

- Face to face meetings have been very much missed in 2020, and we hope to be able to discuss and dine with our NWMO and ERG friends/colleagues in person.
- In terms of the ERG membership, Suzanne Livingstone will be going on maternity leave at the end of March 2021 and will be replaced by Helen Temple for the duration of her leave. Helen was previously a member of the ERG and therefore is well placed to take up this position as she already knows the project well.

#### **NWMO:**

NWMO has confirmed that the project schedule is still on track to select a site in 2023, and submission of the project description in mid 2024. In light of this, potential activities for the ERG may include:

- Continued work on sustainability and what that means for the AMP project in the long term.
  - Water has been identified in both sites Southwestern Ontario and Northwest Ontario, as a key value component and therefore a reconciliation-informed sustainability framework will be developed and will include a cohesive water protection strategy for each site.
- Review and input into developing the “Project Envelope” and preparation of draft project descriptions for both siting areas.
- Review of biodiversity baseline design and approaches for both sites.
- Input into an annual update of the Environmental Media Baseline program design.
- Review of detailed impact assessment methods for the biophysical environment, including Value Component identification.

## **6 Appendix 1: Bios of current members of the ERG**

### 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.

### Dr. Suzanne Livingstone

Dr. Suzanne Livingstone is a Senior Principal Consultant at The Biodiversity Consultancy. She is a conservation biologist with twenty years of experience, with ten years working with business and biodiversity. She has expertise in mining and hydro dam projects, and Oil and Gas Projects in terrestrial and marine environments. Dr. Livingstone specializes in impact assessment, Critical Habitat assessment, biodiversity risk profiling, baseline survey design and management, and offset design and implementation. Suzanne joined The Biodiversity Consultancy from IUCN (International Union for

Conservation of Nature), where she worked as a senior programme officer managing assessments of extinction risk to species globally. She has worked for several international NGOs, including Conservation International and WWF, and the Universities of Glasgow and Edinburgh.

#### Tammy Tremblay

Tammy Tremblay (Monedo Giizhigo Kwe) is a member of Sagamok Anishnawbek First Nation and part of the Marten (waabzesh) 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 is currently the Environmental Manager for Sagamok Anishnawbek and brings over 10 years of experience within First Nations Environmental and Natural Resource Management, striving towards balancing traditional knowledge and western science. Her recent work includes developing a bat program in Sagamok Anishnawbek. The program includes acoustic monitoring both in the community and in the traditional territory. Collecting Indigenous Knowledge and locating critical habitat based on its findings has been a focus of the work.