

**NUCLEAR WASTE MANAGEMENT ORGANIZATION (NWMO)**

**BOARD OF DIRECTORS  
MEETING**

**September 25, 2014**

**AGENDA**

1. Constitution of Meeting and Approval of Agenda
2. Minutes of Previous Meeting
3. Business Arising from the Previous Minutes
4. *In Camera* Session
5. Report from the Siting Committee
6. Report from the Audit, Finance & Risk Committee
7. Report from the Advisory Council Meeting
8. President's Report
9. APM Five-Year Cost Review
10. Direction for Engineered Barrier Design
11. Update on Draft 2015-2019 Business Plan
12. Draft 2015 Performance Measures
13. Business Risk
14. Update on APM Technical Program
15. Path Forward on the Advisory Council
16. Update on OPG L&ILW DGR
17. Waste Owner Cooperation
18. Legal / Corporate Secretary Report
19. Next Meeting of the Board
20. *In Camera* Session

Conclusion of Meeting

**MINUTES**  
**OF THE MEETING**  
**OF THE BOARD OF DIRECTORS OF THE**  
**NUCLEAR WASTE MANAGEMENT ORGANIZATION (NWMO) /**  
**SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES (SGDN)**

**convened in Fredericton, NB**  
**on September 25, 2014**  
**commencing at 9:00 a.m. ADT**

**Present**

Pierre Charlebois	Chair
Wayne Robbins	Vice Chair (via conference call)
Robin Heard	Director
Ron Jamieson	Director
Ken Nash	Director, President & CEO
Deborah Poff	Director
Ian Ross	Director (via conference call)
Josée Pilon	Director
Darren Murphy	Director

**Staff in attendance:**

Paul Gierszewski	Director, Safety & Licensing (except items 1-4)
Chris Hatton	Director, APM Repository Design Development (except items 1-4)
Michael Hung	Chief Financial Officer (except items 1-4)
Pat Moran	General Counsel and Corporate Secretary
Gillian Morris	Assistant Board Secretary (except item 4)
Jennifer Spragge	VP, Human Resources (except items 1-4)
Sean Russell	Director, Environmental Assessment (except items 1-4)
Kathryn Shaver	VP, APM Engagement & Site Selection (except items 1-4)
Derek Wilson	VP, Design & Construction (except items 1-4)

**Guests:**

The Hon. David Crombie Chair, NWMO Advisory Council (item 7, via conference call)

1. **Constitution of Meeting and Approval of Agenda**

Notice of the meeting having been given to all of the Directors of the Company in accordance with the by-laws and a quorum being present, the Chair declared the meeting duly constituted for the transaction of business and called the meeting to order at 9:00 am.

The Chair, Pierre Charlebois welcomed Robin Heard, Senior Vice President, Chief Controller & Chief Accounting Officer at OPG to the Board of Directors.

2. **Minutes of Previous Meeting**

The minutes of the meeting of the Board of Directors held on June 12, 2014 copies having been sent to each member of the Board, were approved.

3. Business Arising from the Previous Minutes

Pat Moran reported on the action items from the previous meetings. The Chair asked Wayne Robbins, as the new Chair of the L&ILW DGR Oversight Committee to suggest when it would be appropriate to have experts from that Committee attend the Board meeting.

4. In Camera Session

The Board convened an *in camera* session to receive the report from the Chair of the Human Resources and Compensation (HRC) Committee on the September 24 HRC Committee meeting.

5. Report from the Siting Committee

Mr. Jamieson provided a report from the Siting Committee meeting held on September 24, 2014. Mr. Jamieson reported that the Committee discussed the following:

- the status of the APM site selection process and the 14 communities presently engaged in the process. A focus of the meeting was a review with management on the findings and the draft recommendations for Phase 1 Assessments concluding for 9 communities.
- recent activities with 4 communities involved in the Phase 2 Assessments and plans for the Phase 2 work program.
  - The Committee emphasized the importance of keeping the CNSC Commissioners and staff briefed on the project and advised management to think through timing for these discussions.
- considerations for Phase 2 to identify how best to focus activities and resources on priority areas to support continued engagement of communities. Discussion surrounded:
  - tools for moving forward in Aboriginal relations;
  - considerations for Phase 2, highlighting challenges and opportunities more broadly for consideration in business planning.
- proposed directions for NWMO's local and Aboriginal procurement procedure; and
- written reports on engagement; the external landscape; an update on the Council of Elders; and the media analysis.

6. Report from the Audit, Finance & Risk (AFR) Committee

Mr. Ross summarized items reviewed by the AFR Committee at its September 24 meeting, including the follow topics:

- a review of the External Audit Plan for both financial and the pension fund. The AFR Committee approved the proposed audit plans by Deloitte LLP and recommended that the Board approve the audit fees for both the audit of the financial statements and the pension fund statement.

- The Committee reviewed the proposed fees for the external audit and determined that they were reasonable:

**IT IS HEREBY RESOLVED THAT:**

On the recommendation of the Audit, Finance and Risk Committee, remuneration of the external auditors, for undertaking the external audit of NWMO's financial statements for the fiscal year ending December 31, 2014, is approved as proposed.

The Motion was made, seconded and unanimously passed.

- an update on progress on the 2016 lifecycle cost review for APM. It was noted that the preliminary results are showing a \$2 billion savings by adopting the Mark 2 container and engineered barrier design;
- changes being considered to NWMO's procurement process to further procurement opportunities for local and Aboriginal communities involved in the site selection process. The Committee agreed with management's proposed approach and will review proposed controls to ensure value for money and protection of corporate reputation;
- discussion on the preliminary 2015-2019 business plan which remained unchanged from the June meeting pending further work on Phase 2 site selection project planning and input from Members. The Committee discussed the potential impact to the business planning schedule as a result of input from Members.
- a review of business risks;
- 2014 performance report and draft 2015 performance objectives; and
- an update from the pension management Committee on the NWMO pension fund.

7. Report from the Advisory Council

David Crombie provided a report to the Board on the Advisory Council's recent September 15 meeting. At the meeting the Council discussed:

- an update from the President covering recent NWMO activities and developments in nuclear waste management nationally and internationally;
- NWMO's report on building relationships;
- preliminary findings on the assessments of the communities in the final stages Phase 1;
- an update on the status of the work in the four communities with Phase 2 Assessments underway;
- the intensive effort underway to plan out the multi-year Phase 2 studies and engagement;
- work underway related to transportation of used fuel to a DGR;
- the key milestones, decisions and assumptions leading to regulatory approval to construct a used fuel DGR;

- a regular update on key areas of business risk relevant to near-term activities in APM implementation was provided; and
- an APM technical update as well as an update on NWMO's support to OPG on the low and intermediate level waste DGR.

Mr. Crombie reported that the Council met in camera with NWMO management to discuss Council operations.

8. President's Report

Mr. Nash welcomed Robin Heard to the Board of Directors. Mr. Nash reported on the following key developments and activities since the June Board meeting:

- a joint meeting with NWMO's Council of Elders with Elders and former Grand Chiefs of Treaty 3;
- a meeting with the new Minister of Natural Resources;
- Bob Watts' appointment as Associate Vice President;
- the progress of NWMO's work on site selection and plans for proof testing the engineered barrier system;
- an additional corporate level objective to develop a safe and socially acceptable transportation plan;
- the success of the used fuel transportation mobile exhibit;
- a meeting of federal/provincial working group on transportation
- industry discussion continues regarding alternative fuel cycles;
- continuing work to develop an updated used fuel DGR reference design and new lifecycle cost estimate;
- the completion of the second round of Joint Panel Review hearings on the OPG low and intermediate level waste DGR;
- the government announcement regarding the reformulation of AECL; and
- internationally, the United Kingdom's work to re-define its siting process and plans to visit NWMO to hear about the APM siting process.

9. Progress on 2016 Lifecycle Cost Review for APM

Management provided an update on the plan to re-evaluate the lifecycle cost for APM by 2016. NWMO updates the APM lifecycle cost estimate every five years as part of the funding formula that was approved under the *Nuclear Fuel Waste Act*. The last lifecycle cost update was in 2011.

Directors asked questions about the schedule for preparing the cost estimate, how the estimate fits into OPG's review for the Ontario Nuclear Funds Act requirements and about NWMO's interaction with the regulator on NWMO's Mark 1 and 2 container designs.

10. APM – Direction for Engineered Barrier Design

Management is recommending to the Board that NWMO adopt the Mark 2 engineered barrier design and proceed with the associated proof testing. Mr. Wilson explained that the repository engineered barrier design, comprising the used fuel container and bentonite buffer, will be a critical part of the safety case. While large parts of the repository

construction and operation will be achieved by standard mining techniques, the engineered barrier and associated packing plant and handling system will be highly specialized. A high level of assurance will be needed to confirm that the system will meet safety and licensing requirements and can be efficiently built, operated and maintained.

It was reported that in 2014, an international expert peer review confirmed that the Mark 2 system was technically feasible and external contractors have verified the projected savings potential. They also identified that NWMO's proposed project schedule is optimistic.

Directors discussed other countries' involvement in NWMO's technical program and whether the geology of a site would impact the container system. Management confirmed that the Mark 2 program would be suitable for a repository in either sedimentary or crystalline rock.

The Chair asked the Board if there were a general consensus to move forward with the Mark 2 program. All Directors agreed and look forward to reviewing the project execution plan and how the technical program is integrated into the siting process at the next meeting.

11. 2015-2019 Business Plan Update

Mr. Nash highlighted the areas of refinement in the proposed business plan since the June Board meeting. Staff reviewed the updated strategic objectives and the milestones included in the plan to obtain a construction license.

Directors discussed the timelines for reaching milestones in the project. Management reiterated that the 2035 in-service date was established for financial planning purposes only and that APM would proceed as circumstances allowed. Directors discussed the projected in-service date and agreed that Member organization input was required for the discussion. Directors also discussed CNSC involvement in the NWMO's planning.

Directors reviewed the budget and what the estimated actual expenses are projected to be for 2014 as well as the level of contingencies built into the plan.

*The Board convened an in camera discussion on the business plan.*

12. Draft NWMO 2015 Performance Measures

Management reviewed draft 2015 performance measures with the Board noting that the objectives will be used to track performance throughout the year and for assessing performance for purposes of the Annual Incentive Plan (AIP) for management group staff. Consistent with the approach used for 2014, a number of high level key measures are proposed with weightings.

13. Risk Review

Management reviewed the key risks for both APM and the OPG L&ILW DGR. Michael Hung noted that the presentation of risks was consistent with the presentation provided in February 2014 which reflected suggestions/requests by AFR Committee, Board members and the Advisory Council. Mr. Hung reviewed the changes in several areas of risk.

Directors discussed risks related to the recent industry interest in alternative fuel cycles. Mr. Nash noted that historically NWMO's role has been one of anticipating what fuel cycles might come to fruition as a result of decisions made by waste owners and when they might be implemented. NWMO has not undertaken studies to evaluate the merits of alternative fuel cycles. Directors agreed and confirmed that NWMO's role is to implement APM while also adapting to changes that may emerge.

14. APM Technical Program Update

Derek Wilson updated the Board on progress in the APM technical program. He reported that NWMO is still waiting for a formal response from the CNSC with regard to NWMO's fourth and fifth case studies. Chris Hatton reported on the successful results of a weld crush test which involved crushing of a weld section of a container under a 500 ton load.

Directors discussed the results of the weld crush test. Directors also asked questions about packaging used fuel for transportation and if required, where the waste would be transferred into transportation containers.

As requested at an earlier meeting, Directors viewed animation of robotics of handling of containers from a transportation method to hot cells. Directors discussed the costs of a packaging plant. A Director suggested that when NWMO begins detailed design of the hot cells that it engages those with expertise in this area from the power plants.

15. Path Forward on the Advisory Council

Ken Nash reported that the current Advisory Council membership terms end on December 31, 2014. The Board discussed a review process to assess the current make up of the Advisory Council and determine if any changes need to be made to ensure the fulfillment of the *Nuclear Fuel Waste Act* is met and Council has sufficient range of expertise to advise NWMO on priority areas going forward. A Board member requested the matrix of expertise currently represented on Council. (\*)

The Board discussed the Advisory Council's operational matters raised by Chair David Crombie in his report. Board members requested that management arrange a joint meeting of some Board and Council members to discuss the Council requests concerning its operations. (\*)

16. Update on OPG L&ILW DGR

Derek Wilson provided some observations from the recent Joint Review Panel hearings on the OPG low and intermediate level waste DGR. He reported on the participants in the hearings and the discussions surrounding decommissioning waste. Mr. Wilson noted that the expert group on relative risk provided their report to the Panel.

Paul Gierszewski discussed the possible timeframes for the panel's report to the federal government.

17. Update on Waste Owner Cooperation

Derek Wilson reported that the NWMO Board and NWMO Members were provided with an update in June on the progress of the Cooperation and Coordination on Low and Intermediate Level Waste working group as established following the 2013 NWMO Annual General Meeting. He explained the goals of the working group.

Mr. Wilson also reported that in July, the Canadian Nuclear Association (CNA) assembled a Nuclear Leadership Forum. One of the actions emerging from this group is to: "develop an integrated strategy for long-term management of all radioactive waste". NWMO is also participating in this group and exploring how the two groups might work together to streamline efforts. A Board member suggested that the CNA working group might delegate this work to the already-established NWMO working group.

18. Legal / Corporate Secretary Report

Pat Moran updated the Board on two recent Supreme Court decisions - *Tsilhqot'in Nation v. British Columbia* and *Grassy Narrows First Nation v Ontario (Natural Resources)*.

19. Upcoming Meetings

The next meeting of the Board will be held on:  
Thursday, November 27, 2014  
9:00 am – 3:00 pm EST, Toronto, ON

20. In Camera Session

Board Members held an in camera session.

Conclusion of Meeting

There being no other business, the Chair declared the meeting adjourned at 3:05 pm.  
(\* ) Denotes actions to be taken.

---



Pat Moran  
Corporate Secretary



Pierre Charlebois  
Chair