

NUCLEAR WASTE MANAGEMENT ORGANIZATION (NWMO)

**BOARD OF DIRECTORS
MEETING**

September 29, 2011

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. President's Report
6. Report from the Siting Committee
7. Report from the Audit, Finance & Risk Committee
8. Report from the L&ILW DGR Oversight Committee
9. Report from the Advisory Council
10. Update on the APM Site Selection Process
11. Update Reference Cost Estimate for APM
12. NWMO Support to the Construction Phase of the OPG L&ILW DGR
13. 2012-2016 Draft Business Plan
14. Business Risk
15. Draft 2012 Performance Objectives and Measures
16. Reporting of Very Low Predicted Doses in Post-Closure Safety Submission to CNSC
17. Re-Development of the Elders Forum
18. Update on Advisory Council Appointments
19. Update on APM Technical Program
20. Legal Update (*In camera*)
21. Next Meeting of the Board
22. *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 Toronto, ON
on September 29, 2011
commencing at 9:00 a.m. EDT

Present

Gary Kugler	Director, Chair
Pierre Charlebois	Director
Donn Hanbidge	Director
Ron Jamieson	Director
Ken Nash	Director, President & CEO
Josée Pilon	Director
Deborah Poff	Director (via phone)
Ian Ross	Director

Regrets:

Darren Murphy	Director
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Guests:

Albert Sweetnam	OPG, Executive Vice President
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Staff in attendance:

Angelo Castellan	VP Environmental Assessment & Corporate Support
Michael Hung	Acting Chief Financial Officer
Chris Hatton	Director, APM Repository Design Development
Frank King	VP and Chief Engineer
Pat Moran	General Counsel and Corporate Secretary
Gillian Morris	Assistant Board Secretary
Sean O'Dwyer	VP, Human Resources
Jamie Robinson	Director, Strategic Communications
Sean Russell	Director, Repository Engineering
Kathryn Shaver	VP, APM Engagement and Site Selection
Bob Watts	Director, Aboriginal Community Relations (Item 10)
Derek Wilson	Project Manager, OPG DGR, EPCM

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 agenda for the September 29, 2011 meeting was approved.

2. Minutes of Previous Meeting

The minutes of the meeting of the Board of Directors held on June 15, 2011, copies having been sent to each member of the Board, were approved.

3. Business Arising from the Previous Minutes

Ken Nash reviewed the status of the actions list from the previous meeting. Two actions will be carried forward for completion at a future date.

4. In Camera Session

The Board convened an *in camera* session to discuss the report from the Chair of the Human Resources and Compensation (HRC) Committee.

The Board confirmed the appointment of Michael Hung as acting Chief Financial Officer and Treasurer.

IT IS HEREBY RESOLVED THAT:

On the recommendation of the Human Resources and Compensation Committee, the Board of Directors approves the appointment of Michael Hung to the position of Treasurer and Chief Financial Officer on an acting basis.

The motion was made, seconded and unanimously passed.

The Board also confirmed the appointment of Derek Wilson as VP L&ILW DGR Design and Construction.

IT IS HEREBY RESOLVED THAT:

On the recommendation of the Human Resources and Compensation Committee, the Board of Directors approves the appointment of Derek Wilson as VP L&ILW DGR Design and Construction [confidential compensation details omitted].

The motion was made, seconded and unanimously passed.

5. President's Report

Mr. Nash updated the Board on developments since the last Board meeting. He reviewed the following:

- an overview of the status of the APM siting process;
- highlights of engagement activities including work to develop an agreement with the Grand Council of Treaty 3 for NWMO to learn about Aboriginal Traditional Knowledge and provide education on APM;
- continuing work with the Elders Forum on its re-development;
- progress in the APM technical program which includes development of the scope of a logistics study on transferring used fuel from reactor sites to the DGR and visits from SKB staff to advise on NWMO's container development program;
- completion of the APM cost estimate which is being submitted for Board approval and will be formally published in this year's annual report;
- continuing work on OPG's Low and Intermediate Level Waste (L&ILW) DGR;
- an update on staffing;
- developments in the national waste management scene; and
- an update on the draft report of the Blue Ribbon Commission on the Future of Nuclear in America.

6. Report from the Siting Committee

Mr. Jamieson provided a report to the Board on the September 28, 2011 Siting Committee meeting. Siting Committee topics included:

- reports from management on the status of communities engaged in learning more about the APM project;
- a discussion regarding the broader external landscape for siting including NWMO's recent engagement activities with provincial governments, NGOs, media and Aboriginal Peoples;
- a report on the ongoing work to restructure the Elders Forum;
- planning for 2012 including preparations for the feasibility studies phase; and
- reviewing of the terms of reference for a new APM Geoscience Review group that will provide advice and guidance on the approach and findings of geosciences components for the feasibility studies.

The Committee also had a lengthy discussion on the importance of ensuring communities feel that they were treated in a respectful way and that their contributions and efforts are recognized throughout the siting process.

The Board discussed NWMO's work with Treaty 3 with Board members strongly supporting this effort.

7. Report from the Audit, Finance & Risk Committee

Mr. Ross provided a report from the Audit, Finance and Risk Committee meeting held on September 28, 2011. Mr. Ross reported that the Committee discussed the following topics:

- review and approval of the audit service plan for the 2011 fiscal year;
- a semi-annual review of NWMO's business risks;
- a review of the updated cost estimate;
- a review of the preliminary 2012-2016 business plan and budget;

- the draft 2012 performance objectives and measures;
- management reports; and
- a review of the chair and president's expenses, which were deemed to be in order.

Mr. Ross reported that at their August 11, 2011 meeting, NWMO Members appointed Deloitte & Touche LLP as the auditors for the fiscal year of 2011. As such, the Board was asked to approve, on the recommendation of the Audit, Finance and Risk Committee, the remuneration for the external auditors.

IT IS HERBY RESOLVED THAT:

Remuneration of the external auditors, for undertaking the external audit of NWMO's financial statements and pension fund, for the fiscal year ending December 31, 2011, is confirmed at the level proposed by management..

The motion was made, seconded and unanimously passed.

Mr. Ross reported that the Committee also considered proposed revisions to NWMO's pension plan text. The revisions were made to reflect amendments made to the OPG plan which remove a number of provisions in the NWMO plan text that distinguish PWU plan members from non-PWU plan members and to make changes required as a result of amendments to governing federal legislation. The Board approved the revisions on the understanding that further minor non-material changes may still be made.

IT IS HEREBY RESOLVED THAT:

On the recommendation of the Audit, Finance & Risk Committee, the Board of Directors approves the revised NWMO Pension Plan Text as attached and authorizes management to make any further non-material changes required to complete the process of review.

The motion was made, seconded and unanimously passed.

Mr. Ross reported that a formal asset/liability study of NWMO's pension plan was undertaken as required by the NWMO Statement of Investment Policies and Procedures (SIPP) in advance of the transfer of assets from the OPG pension plan expected later this year. Eckler Ltd. was commissioned to prepare the asset/liability study which was reviewed by both the Pension Management Committee and the Audit, Finance & Risk Committee. Eckler proposed an asset mix change and other changes related to the recent decision to retain a new investment manager. Mr. Ross reported that Eckler had been very knowledgeable and responsive and the Committee was pleased with their services.

IT IS HEREBY RESOLVED THAT:

On the recommendation of the Audit, Finance & Risk Committee, the Board approves the changes to the Statement of Investment Policies and Procedures as recommended by the external investment advisor.

The motion was made, seconded and unanimously passed.

8. Report from the L&ILW DGR Oversight Committee Meeting

Dr. Kugler provided the Board with a report from the L&ILW DGR Oversight Committee Meeting on September 22 held in Toronto.

Dr. Kugler reported that the Committee considered the following items:

- the progress in the Regulatory Review phase of work including the estimated timelines for the public review, hearings, handling of information requests and licensing;
- an update on the Detailed Design Phase of work, noting completion of two internal site audits and that there were no reportable health, safety or environmental incidents at the site;
- the 2012 work plan for NWMO's work on the L&ILW DGR;
- the revised contracting strategy plan;
- the timing of hiring the shaft sinking and development contractor; and
- a revised engineering, procurement, construction and management (EPCM) organization structure.

A Board member asked if the Committee Chair was satisfied with the progress being made on the work in the L&ILW DGR program. The Chair reported that he was satisfied with the progress, noting that the delay in the appointment of the Joint Review Panel was out of NWMO's control.

Frank King reviewed the timelines once the Joint Review Panel is appointed, estimating that the hearing would be approximately one year from appointment of the Panel and receipt of a construction licence another year after that.

Dr. Kugler asked Mr. King to confirm that a licence was not required for the current work at the site. Mr. King confirmed no licence was required for the current site investigation activities as they do not involve site preparation or construction.

9. Report from the Advisory Council

David Crombie, Chair of the NWMO Advisory Council, reported on the Council's discussion during its September 19 Advisory Council meeting:

- Council received an in-depth report from management on the status of the APM site selection process and related engagement activities. Council members discussed areas of potential risks to APM and requested a discussion of APM business risks at each meeting;
- Council discussed the details of the initial phase of the feasibility studies planned for 2012. Mr. Crombie reported that Council members acknowledged the importance of clarity on decision-making in community assessments and in who will make the assessments;
- management provided a briefing on the results of the consultations with the Elders Forum and other National Aboriginal organizations regarding the re-development of the Elders Forum. Council provided a number of perspectives and supported NWMO's approach for gaining advice and guidance on the re-development;
- Briefings were also provided to Council members on:

- NWMO's draft business plan;
- work underway regarding Council appointments;
- a briefing on the APM technical program
- the comparison of the SKB and NWMO safety case;
- the logistics study related to NWMO's used fuel transfer system development plan; and
- NWMO's work in support of OPG's low and intermediate level waste DGR.

10. Update on APM Site Selection Process

Ms. Shaver provided an update on the communities engaged in NWMO's site selection process. She reported that there are eight communities currently engaged in the process, with three in Saskatchewan and five in Ontario.

Ms. Shaver reported that these eight communities have passed the initial screening and are engaged in a range of capacity-building programs to broaden community understanding of the project and explore their communities' interest in the project. Communities have met with the Canadian Nuclear Safety Commission, attended municipal and waste management conferences, and are engaging independent experts. Week long open houses have been held by NWMO in each community. Communities are also working to form community liaison committees involving councillors and citizens from the communities.

NWMO is preparing to initiate feasibility studies in 2012 with communities interested in proceeding to that next phase in the siting process. A feasibility study will further explore geoscientific and community well-being considerations, and will be supported by expanded dialogue between NWMO and the community. These studies will assess, in a preliminary way, the suitability of a community and associated sites to host the project.

The Board discussed Ms. Shaver's report, asking questions relating to how much geological information was available in each of the interested communities at this stage of the process. Directors also discussed NWMO's plans for working with other communities that might enter the siting process in the future.

11. Update of Reference Cost Estimate for APM

The Board was briefed by Mr. Nash on the final version of the updated reference cost estimate for APM. Further to NWMO's obligations under the *Nuclear Fuel Waste Act*, NWMO must maintain an updated lifecycle cost estimate for the implementation of APM. Accordingly, NWMO will be submitting an updated estimate for the APM program as part of the NWMO's 2011 annual report, to be submitted to the Minister in March 2012. Mr. Nash reported that cost estimate and associated sensitivity and financial risk assessment had been reviewed by members and were consistent with drafts presented to the Board in June.

The Board discussed comments by the Swedish regulator on SKB's cost estimate and proposed fund contribution. Questions were also asked about assumptions regarding repository container materials.

A Board member suggested that the assessment of financial risk be presented in a different way to better reflect the current level of accuracy of the cost estimate. Management undertook to review the public communication of the estimate and what would be made public regarding financial risk and discuss with the Board in December.
(*)

The Board went on to approve the cost estimate.

IT IS HEREBY RESOLVED THAT

On the recommendation of the Audit, Finance & Risk Committee, the Board approves, for purposes of financial planning, a revised reference APM cost estimate of \$17.9 Billion. (2010\$)

The motion was made, seconded and unanimously passed.

12. NWMO Support to the Construction Phase of the OPG L&ILW DGR

Mr. Nash reported that, at the June meeting, the Board discussed a number of challenges related to the construction of the OPG L&ILW DGR and the need to review whether NWMO should continue to provide EPCM services during this phase. Mr. Nash discussed benefits and risks of taking on this work, how NWMO could deal with the identified challenges and a path forward to making the decision on whether to proceed as contemplated under the Engineering, Procurement, Construction and Management (EPCM) Services agreement that was signed with OPG.

During the construction phase, it is intended that NWMO will continue to provide EPCM services. This will include making recommendations to OPG on project strategy and risk mitigation and execution of the project using NWMO staff, contract staff and NWMO procedures. Mr. Nash emphasized that to be successful NWMO would need to amend its compensation structure to attract and retain a qualified EPCM team and have the freedom to develop its own processes to meet regulatory and safety requirements. Mr. Nash reported that at the September 22 L&ILW DGR Oversight Committee meeting, OPG confirmed the project will operate under NWMO's governance and will not be constrained by additional OPG governance. He also reported that the Human Resources & Compensation Committee (HRCC) had agreed with the outline plans for the EPCM team structure. NWMO will be the constructor and will be fully responsible for worker health and safety and protection of the environment.

OPG will be responsible for all costs and cost risks. The OPG oversight team will provide direction on all major aspects of the project and will retain responsibility for final decision-making on contracting strategies, selection of contractors, purchase orders and on how project risks will be managed.

Board members discussed the rationale for NWMO assuming the constructor role for this project, taking into consideration both the risks and benefits to NWMO. The Board considered, in particular, the synergies that would exist between the OPG L&ILW deep geological repository and the APM DGR, and the extensive capacity building that will be required for NWMO to implement its APM program, which would benefit from the experience and lessons learned on the OPG L&ILW project. The Board also discussed the required timing of the Board's decision, to ensure that NWMO has time to establish its team, engage suppliers, and ensure proper planning to be successful. Board

members agreed that the decision on whether NWMO should proceed with the management of the construction phase of the project should be made at the December 1st Board meeting.

13. 2012 – 2016 Draft Business Plan

Mr. Nash introduced the draft 2012-2016 Business plan for Board review and discussion. He noted that the APM section of the plan is consistent with the approved 2011-2015 business plan and the preliminary 2012-2016 business plan reviewed at the June meeting of the Board. There have been a number of further refinements to the work plans and cost flows.

Mr. Nash discussed a number of things in the plan that may change by December, including the number of communities engaged in feasibility studies and the pace of these studies.

Staff reviewed the key points in the APM Siting Process, APM Technical Program, the work to support the OPG L&ILW DGR and the Lifecycle Liability Management area.

Amongst others, Directors discussed the following aspects of the business plan:

- the logistics study on transferring used fuel from reactor sites to the APM DGR and re-packaging and container transport options;
- the licensing process for OPG L&ILW DGR and related issues; and
- time frames for training and education of staff to operate the L&ILW DGR.

Dr. Kugler commended NWMO for presenting a thorough, well thought out business plan. It was noted that the final business plan would be presented to the Board for approval at its December meeting.

14. Business Risk

Michael Hung reviewed the business risks, and, where appropriate, risk mitigation measures. Mr. Hung focused on the items with the highest levels of risk in implementing APM. He noted that the L&ILW DGR Oversight Committee reviewed health, safety and environment risks and that final decision-making on other risks associated with the OPG L&ILW DGR rests with OPG and not with NWMO.

At the request of the Chair, Angelo Castellan reviewed the processes, practices and controls employed by NWMO to safeguard its IT systems. Topics covered included threat risk assessment, controls for changes to IT applications and infrastructure, enterprise backup, IT system configuration, firewalls and virus protection, and access controls.

15. NWMO Draft 2012 Performance Objectives and Measures

Michael Hung discussed the draft 2012 performance objectives and measures with the Board. The objectives will be used both to track performance throughout the year and as the measure to be used in assessing overall corporate performance. The performance measures and objectives will be submitted to the Board for final approval at its December 1st meeting.

Consistent with the approach used in 2011, a small number of high level key objectives are proposed with measures and weightings.

16. Reporting of Very Low Predicted Doses in Post-Closure Safety Submissions to the CNSC

In response to a request from the Board at the June 15, 2011 for further information on CNSC requirements for dose predictions in post-closure safety submissions, Frank King informed the Board that it is necessary to report public dose predictions quantitatively, even when those dose predictions are extremely small, in the post-closure safety assessment of geological repositories. Canadian Nuclear Safety Commission Regulatory Policy Document P-290, *Managing Radioactive Waste*, requires that future impacts be calculated out to the time when maximum impact is predicted to occur. Typically for safety assessments of geological repositories the point of maximum dose is hundreds of thousands or millions of years in the future, and after consideration of radioactive decay, predicted public doses can be essentially zero, but to meet the P-290 requirement, they must be calculated to show that the point of maximum dose has been considered. Mr. King noted that in preparing summaries of safety assessment calculations it is common to refer to predicted doses as being so many orders of magnitude below the dose limit to facilitate understanding of the results.

17. Re-Development of the Elders Forum

Bob Watts discussed the potential direction and general principles that could be applied to a Terms of Reference for the Elders Forum based on advice received from the Elders Forum and from consultations with Advisory Council members, National Aboriginal Organizations and other corporations who work with Aboriginal Peoples.

Mr. Watts highlighted some of the key points taken from the consultations regarding the re-development of the Elders Forum.

Directors discussed the information provided. Board members expressed support for the direction management has taken in the re-development of the Elders Forum. Directors also suggested that it would be appropriate for the Board to hold a meeting with Elders Forum members once the re-development is complete.

Board members attending the upcoming Elders Forum in November of this year requested briefing information from management in advance of the meeting. (*)

18. Update on Advisory Council Appointments

Pat Moran reviewed the status of the Advisory Council appointments noting that NWMO has conducted a competitive search to identify a third party search firm to assist in identifying new candidates. The search firm has been selected and the process is moving forward. A revised Terms of Reference for the Council was included for Board consideration and approval.

A Director asked if there was any change to Council member compensation. Management confirmed that compensation would not change. A director requested one minor change to the proposed Terms of Reference and with that change, it was approved:

IT IS HEREBY RESOLVED THAT:

The Board approves the revised Advisory Council Terms of Reference.

The motion was made, seconded and unanimously passed.

19. Update on APM Technical Program

Sean Russell provided an update on the APM Technical program. Mr. Russell reported to the Board on the areas of:

- reference designs, cost estimates and safety cases;
- regulatory interface and pre-project review
- repository design development; and
- research and confidence building.

Chris Hatton reported on the proposed logistics study addressing the transfer of used fuel from reactor sites to the APM DGR.

Directors discussed some of the logistics regarding transportation and possible re-packaging of the used fuel bundles.

20. Legal Update (In Camera)

Pat Moran provided an update on recent legal developments and their implications for the NWMO.

21. Upcoming Meetings

Next meeting of the Board of Directors:

- November 14, 2011 - DGR Committee Meeting
- November 29, 2011 - AFR / HRC / Siting Committee Meetings
- December 1, 2011- Board of Directors Meeting

22. In Camera Session

It was determined that an additional in camera session was not required.

Conclusion of Meeting

There being no other business, the Chair declared the meeting adjourned at 2:30 p.m.
(*) Denotes actions to be taken.

Pat Moran
Corporate Secretary

Dr. Gary Kugler
Chair