

Open Plenary Minutes – 24th November

Venue: MSTeams Videoconference

Timing: 10.00-12.30

Chair: Nigel Thrift (CoRWM Chair)

Members: Claire Corkhill, Penny Harvey, Neil Hyatt, Ray Kemp, Mark Kirkbride, Derek Lacey, Richard Shaw, Geraldine Thomas Stephen Tromans and Andrew Walters

Attending: Mariana Ghosh (CoRWM Secretariat), Robert Heymer (CoRWM Secretariat), Catherine Draper (Nuleaf), Bruce Cairns (RWM) and Cherry Tweed (RWM)

Apologies: Campbell Gemmell (CoRWM)

Agenda Item 1. Welcome and introductory comments (Chair) 10.00

1. Nigel Thrift (NT) welcomed all attendees to the Open Plenary.
2. NT stated that CoRWM has provided comments to the NDA Strategy consultation 4. CoRWM has had lots of communication with the Devolved Administrations and Government over Cm 2919. CoRWM has presented at Nuleaf meeting and NDA Integrated Waste Management (IWM) conference.
3. NT stated that Campbell Gemmell (CG) and Richard Shaw (RS) will leave CoRWM at the end of November. NT thanked RS and CG for their dedicated service and the contribution they have made to CoRWM.
4. NT asked CoRWM members and external attendees for suggestions for replacements for CG and RS, with links to the Scottish Government and geosciences. As such, two subgroup Chairs are empty. Mark Kirkbride becomes the Chair of subgroup 2 (GDF Geology and Delivery) and Andrew Walters (AW) will take on as the Chair of subgroup 4 (Scottish Government Activities).
5. NT stated that due to only having ten members for the next few months, the Task and Finish group (subgroup 7) will temporarily close.
6. NT stated that AW has had his contract extended as a member of CoRWM for another nine months until the end of September 2021.

7. NT stated that the Deputy Chair position will be filled jointly by Penny Harvey (PH) and Derek Lacey (DL) subject to Ministerial approval.
8. NT thanked Claire Corkhill (CC) and subgroup 1 for their attendance and presentation at the NDA IWM conference on 20th November and stated there is further work to do concerning CoRWM visibility.

Agenda Item 2. Declaration of Interests 10.10

9. No new Cols were declared.

Agenda Item 3. Approval of Minutes from the Previous Plenary 10.15

10. The Open September Plenary Minutes were approved.

Agenda Item 4. Update on Subgroup Activities and Plans 10.20

Key topics:

a) SG 1 Working with Communities (Penny Harvey)

11. PH stated that the purpose of SG 1 is to scrutinise and advise BEIS, NDA and RWM communications with communities.
12. PH stated that they are following the 4th November announcement of the Copeland Working Group closely.
13. PH stated their support of RWM's aim of building social acceptance and partnership, including ethical, environmental, and intergenerational fairness concerns.
14. PH stated that in response to the Copeland Working Group announcement, SG1 built a FAQ document on key concerns, which will shortly be published on the CoRWM website and developed in more detail in an upcoming Position Paper.
15. PH stated SG1 participated in the NDA IWM event, in an independent session alongside regulators and NuLeAF. This event focused on stakeholder engagement, and outlined the need to work on information access via social media and other non-traditional channels. The event also emphasised learning from previous experiences, looking to other big industries for improving social acceptance of large projects, and how best to support communities through this process.

b) SG 2 GDF Geology and Delivery (Richard Shaw)

16. RS stated that SG2 had met with John Corderoy at RWM and discussed the draft Position Paper on GDF construction costs, focusing on the costs of the above-ground facility rather than underground facility costs. This Position Paper should be published by the end of the year. MK may wish to add to the paper.
17. RS stated that SG 2 had met on 17th November to discuss starting to write a Position Paper on inshore GDF siting, which MK will begin to write.
18. MK added that the Position Paper will cover policy, permissions, legal, technical and engineering aspects of an inshore / offshore GDF.

c) SG 3 Planning and Regulation (Stephen Tromans)

19. ST stated that the main focus of SG 3 this year is the production of a Position Paper on regulation, which is moving towards completion. Radioactive waste management policy is changing quickly, and preliminary engagement with regulators on GDFs is necessary.
20. ST raised that if a GDF is to succeed, there are three main obstacles:
 - Agreement of a volunteer community
 - Suite of regulatory consents
 - Government financial support

The second of which is the focus of this paper. On-land, there are three consents required; developmental consent under the Planning Act 2008, the site license under Licensing Nuclear Installations, and a permit to cover the environmental impact.

21. ST stated that written feedback from ONR, EA, SEPA and NRW had been received, and that SG 3 had met with EA and ONR and are planning to meet with EA and NRW soon to discuss their feedback. ST noted the professionalism of the responses, and the quality of communications were better for having a position paper drafted beforehand.
22. ST stated that transparency and clarity in policy is critical.
23. ST commented that there is no doubt about the willingness of regulators to deal with communities, but is concerned on the limited resources allocated to regulators to deal with multiple communities.
24. ST stated that Cm. 2919 is old, though has been updated with content related to NSD, LLW and VLLW, but a more coherent statement of policy is required. BEIS are working on this and will release this in 2021.

25. ST stated that in March, the EA put emphasis on “risk-informed decision-making”, which was derived from NDA Strategy rather than policy. This was driven by a lack of clarity on the ILW/LLW boundary, focusing only on radioactivity. ST stated that regulators now have more recognitions that “risk-based decision making” in conjunction with ALARA/ALARP principles allows for this flexibility with more clarity.

26. ST stated that the Position Paper should be completed shortly, with a focus on capturing all regulators’ comments.

d) SG 4 Scottish Government Activities (Andrew Walters)

27. As a follow through with a meeting with Scottish Government in March 2020, SG 4 have supported the SG in its review of HAW Policy Review. Overall while there is a recognition of the development of National UK strategy and policy SG 4 have been active in their advice to the Scottish Government in each of key points on the scope of their review:

- Access to independent expert advice that go beyond technical issues – eg skills, investment and international engagement
- Waste Identification and treatment, including treatment and alternative solutions for ‘difficult’ wastes
- Disposal routes including research into near surface technologies
- Legislation, Regulation and Guidance
- Waste Identification, Treatment and Packaging
- Social and Economic Costs and Benefits
- International Best Practice & feedback
- Consider Brexit withdrawal implications
- Consider emerging technologies and innovation
- Key Performance Indicators
- Risk management
- Industry engagement
- National Planning Framework & Infrastructure
- Building capacity (people, skills, contractors)

28. While HAWSSIG review will represent a refreshing of the policy, the Radioactive Substances Team has been subject to a movement in personnel as well as restrictions as a result of the CV-19 Pandemic, and as a result the review was in its early stages of progression.

e) SG 5 Welsh Government Activities (Gerry Thomas)

29. GT stated the Welsh Government are currently focused on COVID, EU exit and the implications of leaving Euratom.

30. GT stated that the policy review from BEIS is nearing review by the Welsh Minister, as well as the Concordat and outlined framework agreement.

31. GT stated changes are required for Article 37 concerning transboundary effects on managing radioactive waste, and outlined the importance on maintaining reporting on transboundary effects after the transition period.
 32. GT stated that there are ongoing discussions on excluding LLW from the nuclear liability scheme, and that environmental agencies are responsible for exclusion eligibility for LLWR sites.
 33. GT stated that there are internationally agreed standards to follow after the transition period, and Wales will adopt the IAEA standards.
 34. GT commented that her colleagues in Wales are looking forward to the NSD and construction costs Position Papers as they may be relevant to the Trawsfynydd site in Wales, and noted that public communication may be challenging.
- f) SG 6 Storage of Waste, Spent Fuel, and Materials (Derek Lacey)
35. Subgroup 6 is tasked with the scrutiny of the end of the Magnox reprocessing programme and the storage and disposal of spent fuel, uranium and plutonium. SG6 also provides advice to the Nuclear Decommissioning Authority (NDA) on integrated waste management.
 36. SG6 has been able to maintain engagement with NDA throughout the Covid-19 pandemic. DL reported that:
 - Magnox reprocessing is set for completion in 2021 following disruption due to Covid-19. The intent is to minimise the residual amount of Magnox fuel that would require conditioning and storage for ultimate disposal.
 - CoRWM provided comments to the NDA on its draft strategy which was issued for consultation. SG6 provided comments on the extent to which climate change is considered over the duration of the NDA mission, on the information available to communities near nuclear licensed sites on the wastes that need to be managed at these sites and on research, development and innovation. DL noted that the Strategy does not introduce any significant changes for management of spent fuel, uranium and plutonium and that it reflects recent developments in integrated waste management.
 - SG6 has held discussions with NDA on options for Uranium management, optimisation of research, development and innovation, and the radioactive waste inventory.
 37. SG6, with SG1, participated in the NDA integrated waste management stakeholder event on Friday 20th November. CoRWM posed two questions to

the participants: how might NDA change its approach to stakeholder engagement; and what can the UK learn from experience of stakeholder engagement in other countries that are managing waste from large nuclear programmes.

g) SG 7 Task and Finish (Mark Kirkbride)

38. MK stated that the focus of SG 7 has been on the BEIS policy update and review. Members' comments (including comments on a lack of clarity on risk terminology) have been compiled, reviewed and submitted to BEIS in a constructive and helpful process. An updated version of the document is expected soon, and a final pass with fewer comments is expected. A meeting was held with Adrian Simper of NDA on the strategy consultation, and CoRWM submitted comprehensive responses to the consultation's questions.
39. MK stated the GDF construction costs estimate Position Paper is prepared and finalised, and was confident that it will be published by the end of the year.
40. MK stated the NSD paper has been taken over by Neil Hyatt (NH), and that this is likely the end of the current work for SG 7

Agenda Item 5. Presentation

11.00

Speaker: Professor Neil Hyatt - "Immobilisation options for the UK plutonium inventory" *TBC*

41. NH introduced the presentation, focusing on the technological developments of plutonium immobilisation, sponsored by EPSRC, NDA, UKRI and TRANSCEND.
42. The UK has 140 metric tons of civil separated plutonium from reprocessing: the most in the world.
43. In 2006, CoRWM recommended that uranium, spent fuel and plutonium should be dealt with as wastes. In 2011, the government policy favoured conversion of separated plutonium into mixed oxide (MOX) fuel. In the more recent NDA Strategy 4 paper, it was stated that at least some plutonium needs to be stored as waste and disposed in a GDF; hence immobilisation technology development is necessary.
44. Currently, conversion of plutonium into LWR MOX fuel is the preferred option with highest technical readiness. There are several possible technology options for immobilisation of plutonium, including: encapsulation in cement, hot isostatic pressing (HIP) and Disposal MOX. The proposed waste products resulting from a Hot Isostatic Pressing (HIP) technology have several advantages, primarily based on the process producing a robust wasteform

(which has proliferation advantages). However the technology is at a Technology Readiness Level of ~4. Disposal MOX has similar advantages and is more technologically mature, involving production of MOX pellets but disposing of them instead of using them. Both HIP and disposal MOX require new facilities and technology development.

45. NH is focusing on HIP technology development. At the University of Sheffield, a glovebox line has been allowed to work with milligram quantities of nuclear materials, to enable further research.
46. In summary, long term storage and some immobilisation of plutonium is required. Research is well underway on HIP technology. However, it will be a long wait until the concept is fully assessed, and other issues such as retrievability are solved.

Agenda Item 6. Questions from the public

11.30

47. ST thanked NH for the clear explanation and raised the issue of the long-term safeguards concern that plutonium creates in a GDF. ST asked if HIP technology is an answer to this; if plutonium was impossible to extract afterwards or if human ingenuity could fault it. NH replied that the IAEA said GDFs will be safeguarded until no fissile material remains.
48. RS asked about the effect of alkaline pH on release rate. NH stated that it is even lower than at pH 2 (nitric acid), and that in a cementitious GDF, the surface would recondense to passivate under alkaline pH also.
49. RK stated that COVID vaccine production assurance is managed by a joint committee on immunisation and undergoes a lengthy process and asked what the equivalent for this technology is. NH replied that ONR regulate nuclear operations, but the onus is on the waste producer to show they can satisfy regulations for disposability. Evidence of this is required and factored into the overall safety case for the GDF. Pass/fail cases do not give a holistic overview of performance. CC added that the formal transfer of responsibility is when the GDF accepts the waste, though informally all parties co-operate around the whole lifecycle to balance costs and benefits.
50. CC and NH added that reuse of MOX fuel will produce further plutonium waste, which will require subsequent disposal.
51. DL commented that IAEA had made good progress in preparing for the Swedish and Finnish facilities, and technological developments have aided this. When the repository is shut down, proliferation resistance is the important factor. DL asked how many technological options are necessary to research. NH replied that two options are always carried.
52. RK raised that it would be beneficial to include this discussion in a Position Paper.

53. CC raised the concern of plutonium to uranium decay, producing delayed criticality and chemical effects, and asked how this decay may affect the wasteform. NH replied that uranium's chemistry is very different from plutonium, and uranium oxidises to U^{6+} . ^{239}Pu decays into fissile ^{235}U , though the types of criticality are fundamentally different, and assessments show that it is not a primary concern for the transmutation safety case, and criticality calculations show that this should not be a long-term concern.

Agenda Item 7. Any other business

11.50

54. NT thanked NH for the presentation and thanked all attendees.

55. NT raised a final plaudit for RS and CG.

Agenda Item 8. Next Meeting: 17th March 2021, London

Close of Meeting

12.00