Open Plenary Minutes – 17th March 2021

Venue: MS Teams video conference

Timing: 10.00-12.00
Chair: Nigel Thrift (CoRWM Chair)
Members: Claire Corkhill, Penny Harvey, Neil Hyatt, Ray Kemp, Mark Kirkbride, Derek Lacey, Geraldine Thomas, Stephen Tromans and Andrew Walters

CoRWM Secretariat: Mariana Ghosh and Robert Heymer

Agenda:

1. Meeting open, welcome and introductory comments (Chair) 10.00

Chair's recent meetings

2. Declaration of Interests 10.10

3. Approval of Minutes from the Previous Plenary 10.15

4. Update on Subgroup Activities and Plans 10.20

Key topics:

a) SG 1 Working with Communities (Penny Harvey)
b) SG 2 GDF Geology and Delivery (Mark Kirkbride)
c) SG 3 Planning and Regulation (Stephen Tromans)
d) SG 4 Scottish Government Activities (Andrew Walters)
e) SG 5 Welsh Government Activities (Gerry Thomas)
f) SG 6 Storage of Waste, Spent Fuel, and Materials (Derek Lacey)

5. **Presentation** 11.00
Speaker: Claes Thegerström- "Experiences of siting a deep Geological Disposal Facility for spent nuclear fuel in Sweden"

7. **Questions from the public** 11.30

8 **Any other business** 11.50

9. **Next Meeting:** 19th May 2021, Video conference

Close of Meeting *12.00*

Minutes

Agenda Item 1. Meeting open, welcome and introductory comments (Chair)

1. Nigel Thrift (NT) welcomed all attendees. NT stated that he was pleased to see so many people on the call which is a tribute to the CoRWM speaker, Claes Thegerström.

2. NT stated that these Open Plenaries have followed a set format for some time now. NT added that CoRWM will start with a report on recent CoRWM activities, followed by a talk from their invited speaker. The CoRWM segment will consist of reports back from our Subgroup Chairs.

Agenda Item 2. Declaration of Interests

3. Stephen Tromans (ST) has given details of his interests in nuclear matters, unrelated to CoRWM's remit on waste disposal.

Agenda Item 3. Approval of Minutes from the Previous Plenary

4. The minutes of the November Plenary were approved.

Agenda Item 4. Update on Subgroup Activities and Plans

a) SG 1 Working with Communities (Penny Harvey)

5. SG 1 scrutinises and advises on communications between BEIS, NDA and RWM, and how they communicate with communities.

6. SG 1 have been following RWM's program of Working With Communities. The launch of the Allerdale Working Group was successful. The Copeland Working Group have launched a virtual exhibition, with Allerdale to launch later this month.

7. At the November Plenary, questions were raised over CoRWM's lack of visibility. It is important CoRWM are accessible to the Working Groups and related communities. CoRWM met with Allerdale Borough Council and are in the process of creating a short video on the role of CoRWM to increase visibility.

8. The format of Open Plenaries will change, due to the typically low attendance. Twice yearly, a topic of interest will be chosen, and 2-3 experts will discuss the issue from different positions. The first event will be held in September online. The quarterly plenaries will be continued in a different format.

b) SG 2 GDF geology and Delivery (Mark Kirkbride)

9. Mark Kirkbride (MK) has taken over from Richard Shaw as chair of SG 2.

10. SG 2 focuses on geology and site selection and offers advice and scrutiny to RWM in moving towards GDF construction and delivery.

11. SG 2 have prepared a GDF Costs Estimate Position Paper. It is in its final form and will be issued in the next few months.

12. SG 2 have also drafted a Position Paper on Nearshore GDF Siting; a sub-seabed GDF accessed from onshore. CoRWM make key recommendations for aspects to be considered by RWM.

13. SG 2 maintain regular contact with RWM.

c) SG 3 Planning and Regulation (Stephen Tromans)

14. SG 3 focuses on GDF regulation, in the context of regulation of radioactive waste more generally.

15. SG 3 has produced a Position Paper on Regulation of a GDF and radioactive waste. Publication is imminent. SG 3 had discussions with ONR, EA, SEPA and NRW and were impressed with the expertise and engagement of the regulators. The Position Paper recommends that more clarity is needed in regulation, and the ageing government guidance needs to be updated.

d) SG 4 Scottish Government Activities (Andrew Walters)

16. SG 4 continued to liaise with the Scottish Government on matters of radioactive waste management as it reflects the position on Higher Activity Waste in Scotland.

17. The HAW policy revision continues to be in play with an expected early draft in the second or third quarter of the year and following the outcomes of UK Policy revision / Command Paper on radioactive waste management.

e) SG 5 Welsh Government Activities (Gerry Thomas)

18. SG 5 liaise with the Welsh Government on matters of radioactive waste management.

19. The Welsh Government are ensuring policies are aligned following leaving the EU and Euratom, including looking at transboundary issues.

20. There may be a change in minister after the May Senedd elections.

f) SG 6 Storage of Waste, Spent Fuel, and Materials (Derek Lacey)

21. SG 6 has been able to maintain engagement with NDA throughout the Covid-19 pandemic. Derek Lacey (DL) reported that:

    a. Magnox reprocessing is continuing following disruption due to COVID-19. The intent remains to minimise the residual amount of Magnox fuel that would require conditioning and storage for ultimate disposal.

    b. SG 6 has continued discussions with NDA and RWM on options for Uranium management, optimisation of research, development and innovation, and the radioactive waste inventory.

22. Neil Hyatt (NH) stated that SG 6 is developing a position paper on the radioactive waste inventory for geological disposal. This is to meet the identified need on behalf of stakeholders, in particular potential host communities, for an up-to-date synthesis of the inventory and its relationship to key and strategy positions. The paper is in draft form and will be developed over the next quarter, including any emergent recommendations.

Agenda Item 5. Presentation

Speaker: Claes Thegerström- "Experiences of siting a deep Geological Disposal Facility for spent nuclear fuel in Sweden"

23. NT was pleased to present Claes Thegerström. Claes has worked on matters related to nuclear energy, radioactive waste management and radiation protection since 1974, both in Sweden and internationally. From the beginning of the 1990s he held leading positions within SKB, the Swedish Nuclear Fuel and Waste Management Company. He became executive vice president in 1998 and was president of SKB for 10 years from 2003 to 2012. Since 2012,

he has had his own company, Thegerström Consulting, and has worked as a Senior Consultant on strategy and planning of complex programmes and projects. In addition, he is an independent non-executive director of RWM. He has kindly agreed to update us on the radioactive waste situation in Sweden.

24. 30 – 40 % of Sweden's supply of electricity arises from nuclear power, and Sweden has an inventory of 12,000 tonnes of spent fuel. This spent fuel will not be reprocessed and is declared as waste for disposal in a deep geological repository.

25. The spent fuel assemblies will be encased in copper canisters and disposed of in a facility 500m underground, surrounded by bentonite clay.

26. Sweden have used full-scale laboratory tests to research and develop all the necessary components. RWM have been an active member in experiments at the Äspö Hard Rock Laboratory, in operation since 1996. The Canister Laboratory has been in operation since 1998 and has focused particularly on welding. The Bentonite Laboratory has researched the properties of bentonite clay since 2007.

27. The bedrock in Sweden is mostly crystalline hard rock. 50km of boreholes were drilled across the country in the 1970-80s. There was limited interaction with stakeholders during this period, and drilling was met with opposition.

28. In 1992 SKB proposed a site selection process based on voluntary participation of municipalities with potentially suitable bedrock. SKB had discussions with around 20 of the 291 Swedish municipalities. Storuman and Malå were the first to undergo a feasibility study, but a local referendum failure prevented further site investigation. 6 municipalities covering 8 possible site locations accepted a feasibility study.

29. In December 2000, 3 sites were selected for site investigation: Östhammar (Forsmark), Oskarshamn (Simpevarp/Laxemar) and Tierp (Tierp North/Skutskär), and Nyköping (Skavsta/Fjällveden) was selected for further study. The municipality councils in Östhammar and Oskarshamn accepted these site investigations, but Tierp and Nyköping did not accept further participation in the siting process.

30. Site investigations began at Laxemar and Forsmark in Oskarshamn and Östhammar in 2002. Site specific layouts and environmental impact assessments were completed.

31. In 2009, a safety evaluation was performed of each site. Canister failure due to earthquake and accelerated sulphide corrosion after buffer erosion were considered as contributing risks. Forsmark was predicted to remain below the criterion dose emission for much longer than Laxemar, though both were

found to release less than the background radiation level for over 100,000 years.

32. In addition to this, the higher thermal conductivity in Forsmark allowed a smaller repository design, and rock construction in Laxemar was impaired by large water inflows and extensive development of grouting and backfilling would be required.

33. As a result, Forsmark was selected to host the repository in June 2009.

34. All households within 10km of the site were regularly informed during the whole siting process, and SKB meet with nearby residents on a regular basis. Residents were invited to tour the SKB laboratories and interim storage facilities.

35. A steady increase in favour of a repository in Forsmark was seen, from a net support of +38% in 2003 to +64% in 2009. A high level of communication was key in this.

Agenda Item 6. Questions from the public

36. Pete Wilkinson asked:

Does CoRWM feel it has an obligation to tell government that the storage for up to 200 years of new build waste on sites which are in close proximity to centres of population is unacceptable and does CoRWM believe that the policy of pursuing a new nuclear build programme when a repository is still, after 16 years of the existence of the NDA, nowhere in sight, is subject to many technical and scientific uncertainties and is beset by ethical and moral questions, is a responsible position to take?

CoRWM reaffirms its longstanding policy that the best option for disposing of radioactive waste is through a Geological Disposal Facility (GDF).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/294118/700_-_CoRWM_July_2006_Recommendations_to_Government_pdf.pdf

https://www.gov.uk/government/publications/why-geological-disposal-corwm-position-paper

Of course, it would be better if a GDF could be constructed sooner rather than later but CoRWM is also committed to the idea that any possible site has to be put forward voluntarily by a community.

CoRWM's remit extends only to the issue of what to do with radioactive waste, not the policies that generate it. However, we do not recognise the figure of waste being stored for up to 200 years on site. The GDF is meant to foreclose on any such possibility. That said, provided safety is regulated and the funds are secured to ensure ongoing maintenance of the storage facilities and their ultimate decommissioning, it is difficult to argue that long-term storage is de facto unacceptable, though it is clearly not optimal.

37. Andy Blowers asked:

Does CoRWM think it is credible to indicate to the EA/ONR now undertaking the Generic Design Assessment (GDA) for the Hulaong1 Reactor that 'effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations'. In particular, is it credible new build wastes will be safely managed on sites when conditions in the future are unknowable?

CoRWM recognises that the government's plans for development of new nuclear capacity and the construction of a geological disposal facility are being undertaken in parallel. This tension is due, in part, to CoRWM's recommendation that the identification of a location for a geological disposal facility is achieved through voluntarism.

That said, the regulators' Generic Design Assessment process (which is not site-specific) provides them with an opportunity to provide timely challenge to vendors' designs which will reduce risks related to the interim storage of radioactive waste.

CoRWM's interest in the Generic Design Assessment process relates to the waste management aspects only and CoRWM notes that the GDA process already requires the requesting party to "obtain and provide a view from the Nuclear Decommissioning Authority (as the authoritative source in providing such advice) on the disposability in a geological disposal facility of any proposed arising", namely of higher activity wastes or spent fuel. RWM has implemented a GDA Disposability Assessment process for this purpose, which involves a review of the waste and Spent Nuclear Fuel (SNF) properties, an assessment of the compatibility of proposed waste packages with GDF concepts, and R&D needs relating to future disposal of wastes.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/562817/LIT_7998.pdf

CoRWM also notes that Government has set out Funded Decommissioning Programme Guidance for New Nuclear Power Stations. Operators must submit a Funded Decommissioning Plan to planning authorities and regulators, setting out the route for disposal of Intermediate Level Waste

(ILW) and SNF (2.4b). The Operator is expected to proceed on the basis of a prudent assumption to store and manage the waste onsite, pending transport to the GDF, but alternatives, such as centralised storage are not ruled out (2b.29). The operator is responsible for ensuring SNF is suitably packaged for disposal (2b.33).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/42621/3796-government-response-funded-decommissioning-progra.pdf

CoRWM further notes that regulators have provided guidance to duty holders and site operators of sites for radioactive waste disposal when undertaking climate change assessments in support of, for example, planning permission/development consent, environmental permit applications or safety cases.

http://www.onr.org.uk/documents/2020/ukcp18-position-statement-rev-1.pdf

Currently, therefore, CoRWM is of the view that the GDA process and policy arrangements are sufficiently robust that they will ensure that wastes arising from nuclear power stations can be effectively managed, funded and planned with due regard to climate change. However, CoRWM will continue to monitor developments in this area and will review its advice when that is appropriate. It will do likewise with any issues that might arise concerning the safe and secure management of radioactive waste from new build.

38. Chris Shaw asked:

Has CoRWM in its oversight role considered that there had been enhancement and investment in the surface storage facilities which could be said to meet CoRWM expectations, exceeded them or failed to meet expectations?

CoRWM continues to believe in the importance of a robust programme of interim storage as an integral part of the UK's long-term radioactive waste management strategy. CoRWM recognises the continued provision of substantial funds to the NDA for investment in the Sellafield site which is increasingly focused on integrated waste management. CoRWM's expectations are that these investments ensure security, ensure the longevity of the stores, result in prompt immobilisation of waste and minimises the need for re-packaging waste. CoRWM notes that the NDA integrated waste strategy and the NDA strategy 4 are consistent with these expectations and that statutory regulators conduct a range of activities to confirm that safety, security and environmental requirements are met. These regulators have demonstrated that they will take enforcement action to restore compliance with these requirements if they are not met. CoRWM continues to scrutinise

NDA actions and plans and as part of that activity has encouraged NDA to make more information available in the public domain on progress with its decommissioning and radioactive waste mission and we will continue to do so.

39. Jo Brown asked:

Is CoRWM aware that the only operational GDF is in New Mexico, which collapsed due to corrosion of spent fuel containers?

Spent fuel is not disposed of in the Waste Isolation Processing Plant (WIPP) in New Mexico. CoRWM is aware of an incident at the Waste Isolation Processing Plant (WIPP) in New Mexico in which a small amount of radioactivity was released from the facility due to inappropriate packing of emplaced waste with residual radioactivity. The container failed, and the panel where it was disposed of was sealed off. In the UK, scrutiny of waste packaging and use of advanced technologies to increase passive safety are intended to prevent similar accidents.

40. Steve Smith asked:

Has the relationship between a nearshore GDF and the corresponding onshore community been discussed? The community is defined by electoral wards, but the location of a nearshore GDF is not defined in the same manner.

This is a good question, and the Regulation Position Paper has flagged it up as requiring further consideration. It will be one of the topics addressed in the work of CoRWM on the nearshore option for a GDF. Currently the framework for working with communities is largely predicated on an onshore GDF and leaves a number of questions on how the process would work with a nearshore facility.

From a planning perspective, where there are multiple Authorities with a direct interest in a proposal, typically a Principal Authority will take responsibility in determining an application. The Principal Authority will work closely with neighbouring authorities on details of a planning application before reaching a determination.

41. Terry Bennett asked:

1. Is the process of selecting a site for a GDF in the UK going to involve all the independent steps, described by Claes Thegerström, and will it be carried out by a body that is free of any conflicts of interest?

2.Will that process include a scientific review of the most suitable site, based on the geology of the UK?

3.Finally, if the process that SKB followed is seen to be impeccable, why doesn't CoRWM recommend that SKB International undertake the job of selecting a site for a GDF in the UK?

1. The process of site selection has already been very clearly defined by Radioactive Waste Management Ltd (RWM) who are the appointed body responsible for the delivery of a GDF in the UK. RWM have published a series of technical reports and guidelines with respect to the site selection processes and have previously undertaken consultation publicly to inform and shape this approach. The latest 'RWM Site Evaluation for England 2020' (and another for Wales) are available and clearly set out the proposed steps.

Extensive historical reviews of the UK geology have already been completed, including countrywide geological screening assessments to identify suitable areas, and to exclude other areas which would not be suitable, based upon the screening criteria which is clearly defined.

Currently, CoRWM are satisfied that this process will mirror and build upon the steps undertaken in Sweden, and that it will be undertaken in a robust manner without any conflicts of interest. CoRWM will be involved in providing scrutiny of this process as it develops to ensure that no conflicts of interest can develop in the future.

https://www.gov.uk/guidance/about-national-geological-screening-ngs

https://www.gov.uk/guidance/geological-disposal#about-national-geological-screening-ngs

RWM Site Evaluation for England 2020

2. The geological screening process has been assessed over many years since the concept of deep geological disposal was adopted by the UK Government; significant information and guidance has been published on this subject.

The geological screening undertaken to date is extensive and detailed; this splits England, Wales and Northern Ireland into thirteen 'regions', with each of these then broken down into individual sub-regions for geological evaluation. Specific criteria are applied and assessed in relation to rock type, rock structure, groundwater, natural processes and resources.

It is clear from this screening that there are many potentially suitable geological sites within these regions which could host a GDF. It is important

to note that the UK process would consider three different rock groups, namely:

a. Lower strength sedimentary rocks (e.g. mudstone & clay)

b. Higher strength rocks (e.g. granite & slate)

c. Evaporites (e.g. rock salt)

As a result, and given the wide range of geological settings and deposits across the country, there are a number of ‘suitable sites’.

3. As commented on by Claes during his presentation, voluntarism is a core aspect of the siting process and SKB has specific knowledge of Sweden and their specific geology and communities. CoRWM are of the view that, despite being able to learn and gain significant insight from the activities and process adopted in other international countries, it would be very difficult for any overseas party to undertake the process of site selection without having extensive knowledge and understanding of the UK geological setting and socioeconomics of the communities. Following wide public consultation, the UK Government has clearly defined the processes of voluntarism, site evaluation and geological screening.

CoRWM is satisfied that these processes are robust and will ensure that any site selection process will be independent and based upon an assessment of the various criteria which are critical in the siting process.

42. David Lowry asked:

Could you set out the working definition CoRWM use of "Communities" in its eponymous sub-group; and could you set out the reasons this definition has been adopted?

CoRWM does not have a fixed definition of community. The ‘Working with Communities’ subgroup works to scrutinise and advise BEIS, RWM and NDA more generally with respect to their commitment to volunteerism as fundamental to the siting process. We recognise that there are multiple overlapping understandings of community. ‘Community’ is a dynamic, relational concept. It will include a geographical understanding of a host community who would live in close proximity to the GDF during the exploration, construction and implementation phases; it will include a political constituency and an elected decision-making body (local government); and it will encompass the wider interests, memories, anxieties and aspirations of all those who become involved in the Working Groups and see themselves as holding something ‘in common'. A key function of the Working Groups and subsequently the Community Partnership is to support the process whereby

an informed and willing constituency can emerge and demonstrate its agreement to proceed via the test of public support, the terms of which will be defined by the Community Partnership. As Working Groups initiate debate and encourage consideration of the long-term consequences of this initiative, CoRWM will scrutinise the process and offer independent expert advice

43. David Lowry asked:

You said that the Planning and Regulation sub-group had consulted with several relevant regulators in its preparation of the new position paper on the regulation of radioactive waste. I participate in several stakeholder forums that deal with radioactive waste (BEIS, ONR, the recent EA consultation webinar for the GDA for the Hualong 1 reactor design). I have the overwhelming impression that environmental NGO stakeholders are dissatisfied with the approach being taken by regulators over the UK radioactive waste management/GDF programme, considering that the regulators are behaving more like enablers of Government policy, than as independent regulators. Do you intend to include a reflection of this widespread disquiet in your sub-group report? If so, which NGOs have you consulted; if not, why not?

The Position Paper on regulation is due to be published in early April. It stresses the importance of a transparent, well understood and robust regulatory process in which prospective host communities for a GDF and other radioactive waste management facilities can have confidence, as well as the public generally, including NGOs. The independence, competence and resourcing of regulators is an important aspect of that. The Sub-Group would be interested in any specific instances of experiences of NGOs which bear on that issue (as opposed to generalised impressions as to disquiet). Please do provide specific examples. The Sub-Group will be undertaking an ongoing dialogue with the ONR, EA, SEPA and NRW, and will follow up on any such examples provided.

In addition, the Sub-Group would be happy to meet with representatives of relevant NGOs to provide a briefing on the new Position Paper and to hear views on the subject.

44. Terry Bennett commented that based only on the “proximity of current waste storage” criterion used by SKB, Sellafield and the nearby area *could* be considered as a suitable location for a GDF. However, this and other areas in Cumbria are not suitable sites for a GDF, based on geological criteria. ST replied that UK has a choice of different geological options, including sedimentary rock. The UK also has to consider a higher population density. Sweden were fortunate that they had a good site near a nuclear power plant; this was not known before site investigations began.

45. Jo Brown commented that the UK has a large plutonium stockpile in Sellafield, and this could be immobilised and disposed of near-surface instead of disposed of in a GDF. CT replied that immobilisation is a common strategy for waste. Near surface disposal has more critical safety aspects than deep underground in a GDF, as more things can disturb surface storage, especially in the long-term future with no certainty of monitoring by society.

46. NH asked how interactions with local coastal nations (Lithuania and Finland) went, with respect to the inshore near surface disposal of low-level waste. CT replied that significant interaction with the local community occurred during the initial siting in the 1980s. For the extension of the Spent Fuel Repository, the is a formalised requirement in the Äspö convention that Sweden involves the coastal states of the Baltic Sea. They are asked for comments on the license application.

Agenda Item 7. Any other business

47. The next Open Plenary will be held on Wednesday 19th May 2021.