COMMITTEE ON RADIOACTIVE WASTE MANAGEMENT

SIXTH ANNUAL REPORT
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This document does not present the views of the Committee on Radioactive Waste Management nor can it be taken to present the views of its authors. It is a draft paper to inform Committee deliberations and both the authors and the whole Committee may adopt different views and draw entirely different conclusions after further consideration and debate.

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INTRODUCTION BY THE CHAIR

I am pleased to present CoRWM's annual report for 2009-10 to sponsor Ministers, the Secretary of State for Energy and Climate Change and Environment Ministers in Scotland, Wales and Northern Ireland.

This is the sixth CoRWM Annual Report but the first in a revised format. It summarises the outcomes of CoRWM's scrutiny and advice work during the year. It also contains the Committee's views on the current status of arrangements and plans for the long-term management of higher activity radioactive wastes in the UK.

2009-10 was a busy year for CoRWM. The Committee submitted two major reports to Government, one on geological disposal and one on research and development. It responded to two Government consultations: the UK Government consultation on its draft National Policy Statements for energy infrastructure and the Scottish Government consultation on its policy for the management of higher activity wastes. In addition, CoRWM gave evidence to the House of Lords Science and Technology Committee during its inquiry into CoRWM's performance since its reconstitution in 2007 and the appropriateness of its current remit.

CoRWM has begun its work for 2010-11. Its priorities for scrutiny and advice this year are:

- UK Government work to implement its policy on the long-term management of higher activity wastes
- Scottish Government development of its policy on the management of higher activity wastes and of proposals for its implementation
- Nuclear Decommissioning Authority development of its second Strategy (NDA Strategy II)
- NDA work on the implementation of geological disposal.

EXECUTIVE SUMMARY

1. This is the sixth annual report of the Committee on Radioactive Waste Management (CoRWM) but the first in a revised format. It covers the Committee's work during the period April 2009 to March 2010. The report describes how CoRWM works and summarises its activities during the year and their outcomes.

CoRWM's Remit and How it Fulfils It

2. CoRWM's remit is to provide independent scrutiny and advice on the long-term management of radioactive wastes. It focuses on higher activity wastes (HAW), *i.e.* intermediate level wastes (ILW) and high level waste (HLW). Its work also includes spent nuclear fuels, plutonium and uranic materials that are not considered to be wastes at present but may be in the future.

3. The Committee scrutinises the work of the Nuclear Decommissioning Authority (NDA) and other organisations on all the steps necessary for the long-term management of HAW in the UK. These steps will typically include treatment, storage, transport and disposal. One of its main tasks is to scrutinise UK Government and NDA plans and programmes for geological disposal of HAW. It also scrutinises the work of the Scottish Government on developing and implementing its policy of near-surface, near-site storage and disposal of HAW. Much of the work that the Committee scrutinises is within the Government's Managing Radioactive Waste Safely (MRWS) programme.

4. CoRWM has a set of five guiding principles that it applies in its work. These include commitments to openness and transparency and to upholding the public interest. It carries out its scrutiny by holding meetings with NDA, Government officials, regulators and various groups of stakeholders, and by reviewing documents that these organisations produce. It visits one or more nuclear sites each year, where it sees radioactive waste management facilities, has discussions with site staff and holds a public meeting.

5. The Committee provides both informal and formal advice to Government. In the case of formal advice it usually consults its stakeholders to gather and check evidence, to inform itself of their views and to obtain their comments on its proposed advice. Such consultations are part of the public and stakeholder engagement (PSE) that CoRWM carries out to support its work programme. Its PSE is aimed at promoting understanding of radioactive waste management issues, as well as seeking and discussing views.

6. During 2009-10 CoRWM carried out its first review of its own effectiveness. Based on views from its stakeholders and other evidence, the Committee judged that it had performed reasonably well on criteria of being a trusted and authoritative source of advice, and of delivering its work programme to a high standard and to time and budget. On the criterion of having a demonstrable, positive effect on the management of the UK's HAW, the view of most stakeholders was that it was too soon after CoRWM's reconstitution in late 2007 to form a judgement.

Scrutiny and Advice on Interim Storage

7. CoRWM's work under the heading of interim storage covers the treatment, packaging, storage and transport of HAW and the management of spent fuels, plutonium and uranium. In 2009-10 its main tasks on interim storage were:
    - to scrutinise the NDA's development of its Topic Strategies for HAW, spent fuels, plutonium and uranic materials
    - to advise the Scottish Government on development of its policy for the management of HAW
    - to monitor actions taken in response to CoRWM's 2009 report to Government on interim storage (CoRWM doc. 2500).

8. The NDA's Topic Strategies are at various stages of development and, in some cases, implementation. Although progress is being made on the HAW Topic Strategy, CoRWM notes that there are issues, such as consolidation of storage and treatment on fewer sites, that seem to lack strategic direction from NDA. For spent fuels there are key decisions to be made over the next few years on how much AGR fuel to reprocess and on how and where to treat the many types of exotic fuels (*i.e.* non-standard fuels, mainly from research reactors that closed long ago).

9. CoRWM gave the Scottish Government informal advice during the preparations for the public consultation on its HAW management policy, then responded formally to the consultation. The informal advice resulted in a lengthening of the preparatory period, allowing fuller consideration of the outcomes of the Strategic Environmental Assessment (SEA). The Scottish Government is at present (May 2010) considering the consultation responses.

10. CoRWM's 2009 report to Government on interim storage (CoRWM doc. 2500) contained a recommendation about improving strategic co-ordination, which Government accepted. However, over a year after the report was published, Government has yet to make any specific proposals for improvement. There has also been little action on CoRWM's recommendations about making appropriate information available to the public about HAW management and about how the security of storage facilities is assured. After discussion with the regulators, CoRWM itself published information about how new stores for spent fuel are being designed to mitigate the consequences of 9/11 style terrorist attacks.

Scrutiny and Advice on Geological Disposal

11. CoRWM's 2009-10 tasks on geological disposal included:
    - completion of its report to Government on geological disposal and monitoring of actions taken on the recommendations in the report
    - scrutiny and advice on the voluntarism and partnership approach to siting of a geological disposal facility (GDF)
    - scrutiny and advice on assessing potential GDF sites
    - scrutiny of NDA's work on implementation of geological disposal and development of a generic safety case for a geological disposal system.

12. CoRWM's report to Government on geological disposal (CoRWM doc. 2550) was submitted in July 2009. Government responded in November 2009. The response stated that Government largely agreed with CoRWM's recommendations and set out the work in progress and planned to address them.

13. During the year CoRWM encouraged the UK Government to increase the awareness amongst local authorities of its invitation to express an interest in entering without commitment discussions about the possibility of hosting a GDF. The Government carried out various actions to increase awareness, including attending local government conferences and sending a Ministerial letter.

14. In the one area that has so far expressed an interest, CoRWM attended meetings of the West Cumbria MRWS Partnership, as an observer. It noted that some of the recommendations in CoRWM's 2009 report on geological disposal (CoRWM doc. 2550) are being addressed by the Partnership, with input from Government where appropriate. CoRWM advised the Partnership on the peer review of the study to be carried out by the British Geological Survey (BGS) to screen out areas in West Cumbria that are geologically unsuitable for a GDF.

15. CoRWM discussed with NDA the methodology that might be used to identify sites for desk-based study within areas that have not been screened out. The Committee commented on a draft of NDA's Planning for Implementation document. It followed up its recommendation about the need to assess a wide range of geological disposal concepts by learning more about NDA's assessment of generic concepts and plans for site specific optimisation.

Scrutiny and Advice on Research and Development

16. CoRWM's main work on research and development (R&D) was to complete its report to Government on national R&D for interim storage and geological disposal of HAW and management of nuclear materials (CoRWM doc. 2543). The report contains six recommendations, including one on the need for strategic co-ordination of UK R&D for HAW management between NDA, the rest of the nuclear industry, the regulators and the Research Councils. The report was submitted to Government in October 2009; a response is awaited.

17. During the year CoRWM also held discussions with NDA about all its R&D relevant to HAW management and scrutinised the development of the NDA geological disposal R&D programme. In addition, the Committee had contacts with the Natural Environment Research Council (NERC) about its plans for future funding of research on radioactive waste management. CoRWM visited BGS, which is funded by NERC, to learn about its research and discuss its plans for the screening work in West Cumbria (para. 14).

Scrutiny and Advice on Radioactive Wastes from New Nuclear Power Stations

18. Most of CoRWM's work on HAW from new nuclear power stations ("new build wastes") was related to the radioactive waste aspects of the Government's draft National Policy Statement (NPS) on energy infrastructure. The Committee made informal comments on drafts of documents for the public consultation on the NPS; these were confined to

factual accuracy and clarity of expression. It then responded formally to the consultation and concurrently issued a separate statement of its position on new build wastes.

19. CoRWM's response to the NPS consultation covered issues including whether there will be effective arrangements for managing new build wastes and the possible impact of the NPS on the long-term management of existing HAW. The CoRWM position statement reiterated that the Committee is neither for nor against new nuclear power stations. It stated that CoRWM's future work on new build wastes will consist of scrutiny and advice on plans to ensure that, if new build wastes are created, they are safely and securely managed, and minimising adverse impacts of new build waste management on the management of existing wastes.

Scrutiny and Advice on Public and Stakeholder Engagement

20. CoRWM scrutinises the PSE activities of Government, NDA, other nuclear industry organisations and the regulators related to the long-term management of HAW. It holds discussions with various organisations about their PSE and observes PSE in practice by attending events such as stakeholder workshops on particular topics. It also monitors co-ordination of PSE related to radioactive waste management amongst the organisations involved.

21. Early in 2010, CoRWM sent a questionnaire to Government, NDA and other organisations about their PSE activities. This included questions about how each organisation draws up an engagement strategy and reviews its effectiveness. The responses to the questionnaire will be evaluated in 2010-11 and included in a position paper on PSE. This paper will include the results of CoRWM's scrutiny of PSE in 2009 and 2010, and the results of its monitoring of Government action on CoRWM's recommendation to improve co-ordination of PSE.

Status of UK Arrangements and Plans for Management of Higher Activity Wastes

22. Based on its scrutiny work in 2009-10, CoRWM has the following observations about the status of plans for managing HAW in the UK.

23. Only about 30% of existing UK ILW has been treated and packaged to make it suitable for longer term storage and eventual disposal. Of the remaining 70%, some is held in old facilities and is not in stable forms. It is important that such ILW is retrieved as soon as is practicable, and is treated, packaged and placed in modern stores. CoRWM welcomes NDA statements about the priority it is giving to retrieval of HAW from high hazard legacy facilities, especially at Sellafield. However, the rate of progress is not yet fast enough.

24. Although the current plans for HAW storage are adequate, the approach to storage is fragmented and too few sites have contingency plans. A more strategic approach is required.

25. The implementation of geological disposal is proceeding at an appropriate pace. The rate of progress of the voluntary approach to GDF siting must be determined by the willingness of the volunteering communities to proceed. It is also important to allow sufficient time for technical work, particularly site characterisation, GDF design and R&D.

1. INTRODUCTION

1. This is the sixth CoRWM Annual Report but the first in a revised format. It covers the Committee's work in the period from April 2009 to March 2010.

2. CoRWM's remit is given in its Terms of Reference (Annex A). These state that:

   "... The role of the reconstituted Committee on Radioactive Waste Management (CoRWM) will be to provide independent scrutiny and advice to UK Government and devolved administration Ministers on the long-term management, including storage and disposal, of radioactive waste. CoRWM's primary task is to provide independent scrutiny on the Government's and Nuclear Decommissioning Authority's proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long-term management option for the UK's higher activity wastes."

3. The current membership of CoRWM is given in Annex B. Its sponsors are the Department for Energy and Climate Change (DECC) for the UK Government, the Scottish Government, the Welsh Assembly Government and the Department of the Environment in Northern Ireland.

4. The Committee's work programme for 2009-10 (CoRWM doc. 2515.2) was agreed with its sponsors early in 2009-10. It was carried out within CoRWM's agreed budget (Annex C).

5. Section 2 of this report is about CoRWM's working methods. Sections 3-6 describe the results of CoRWM's scrutiny and advice work during 2009-10. Section 7 of the report is about the inquiry carried out by the House of Lords Science and Technology Committee to assess how CoRWM has performed since its reconstitution in 2007 (House of Lords, 2010a). Section 8 gives the Committee's views on the current status of arrangements and plans for the long-term management of higher activity wastes (HAW) in the UK. Section 9 contains information about CoRWM's work programme for 2010-11.

2. HOW CoRWM WORKS

CoRWM's Principles

6. CoRWM has five guiding principles that it applies in its work (CoRWM doc. 2248). These principles are about:

   - openness and transparency
   - upholding the public interest
   - fairness
   - a safe and sustainable environment
   - working efficiently and effectively.

7. The Committee also has a transparency policy and a publication scheme (CoRWM doc. 2249).

Scrutiny

8. CoRWM scrutinises the work of the Nuclear Decommissioning Authority (NDA), and other organisations that own or produce HAW, on all the steps necessary for the long-term management of these wastes. These steps will typically include treatment, storage, transport and disposal, either in a geological disposal facility (GDF) or a near-surface disposal facility. The Committee scrutinises the work of the UK Government and NDA on the delivery of geological disposal and the work of the Scottish Government on developing its policy for the management of HAW. Much of the work that the Committee scrutinises is within the Government's Managing Radioactive Waste Safely (MRWS) programme (Defra *et al.*, 2008).

9. CoRWM carries out its scrutiny by holding meetings with NDA, Government officials, regulators and various groups of stakeholders, and by reviewing documents that these organisations produce. The Committee visits one or more nuclear sites each year, where it holds discussions with site managers and staff and sees radioactive waste management facilities. During the visit it usually holds a meeting with local people. These meetings are open to the public and participants typically include members of the Site Stakeholder Group (or its equivalent), elected representatives and local residents. CoRWM also monitors developments in other countries, with the objective of checking that the UK is making full use of international experience.

Formulation of Advice

10. All CoRWM's formal advice is to Government. It is mostly given in reports on particular topics (*e.g.* CoRWM doc. 2550) but can also be in shorter documents such as position papers (*e.g.* CoRWM docs. 2420, 2558) and responses to consultations (*e.g.* CoRWM docs. 2748, 2795). Members of the Committee also give informal advice, both verbally and in writing, to Government, NDA and others.

11. The procedures CoRWM uses to formulate its advice are summarised in a document produced in March 2010 (CoRWM doc. 2806). The methods it uses to gather and check the evidence that underlies its advice depend on whether the advice is formal or informal. In the case of formal advice CoRWM usually consults its stakeholders, firstly to inform itself of their views and secondly to obtain their comments on its proposed advice (CoRWM doc. 2806). The views expressed in CoRWM's documents are always the Committee's own. It has a quality control procedure for its documents (CoRWM doc. 2771).

Public and Stakeholder Engagement

12. CoRWM undertakes public and stakeholder engagement (PSE) to support its work programme. In 2009-10 its PSE focused on stakeholders. It included meetings with various groups and consultation on draft documents, *via* the website and an e-bulletin. In general, the Committee uses PSE to:

    - assemble evidence on particular topics
    - obtain the views of stakeholders and the public on these topics

- check the factual accuracy of its draft documents
- seek comments on its proposed advice.

13. In addition, CoRWM asks stakeholders and the public for their views on the Committee's performance and ways of working (para. 23).

14. In 2009-10 CoRWM held two stakeholder workshops, one to discuss the draft of its report to Government on geological disposal and one to discuss the draft report to Government on research and development (CoRWM docs. 2543, 2550, 2593, 2677). It held discussions with a range of stakeholders during its work on the Scottish Government policy for HAW management (para. 27). It met local stakeholders when it visited the nuclear power stations at Hunterston and Hinkley Point (CoRWM docs. 2802, 2809).

15. CoRWM had considered convening a Citizen's Panel as part of its engagement of the public on progress with the implementation of geological disposal (Task 14 in CoRWM doc. 2515.2). It became clear during 2009-10 that this would not be appropriate at this early stage.

16. The CoRWM web site (www.corwm.org.uk) was redesigned in 2008 after the Committee was reconstituted. However, user feedback and developments in peer sites led to a decision to improve the site further and ensure that it met all current standards for accessibility and usability. In addition, the DECC MRWS website and the NDA website now contain extensive background information on radioactive waste management, so the CoRWM site needs to concentrate on the Committee's work.

17. CoRWM worked with specialist website experts from DECC, the Government's Central Office of Information (COI) and an external company. An expert review of the existing site and seven other peer sites was carried out, which was followed by detailed interviews with ten stakeholders from a variety of backgrounds. Draft wireframes and content of key web pages were developed and again tested with stakeholders. the content was then reviewed by a specialist copy editor to ensure that the copy was clear, accessible and met content writing guidelines. The new website will be launched in summer 2010.

Use of International Experience

18. CoRWM uses several means to keep in touch with international developments. Through the literature and websites it monitors progress in various countries on the long-term management of HAW, especially progress in implementing geological disposal. It also monitors the relevant work of the European Commission, the Nuclear Energy Agency (NEA) and the International Atomic Energy Agency (IAEA). CoRWM members gather information when they visit other countries in the normal course of their work. In addition, CoRWM has discussions with representatives of other countries' Governments, regulators and waste management organisations (*e.g.* CoRWM docs. 2664, 2823).

19. In 2009 CoRWM held a meeting in London with the USA's Nuclear Waste Technical Review Board (NWTRB) (CoRWM doc. 2725). NWTRB is an independent agency that

reports to Congress on Department of Energy work on the long-term management of high level waste (HLW) and spent fuels. CoRWM's discussions with NWTRB covered the pre-disposal management and geological disposal of HLW and spent fuels. CoRWM was particularly interested in lessons learned at the Waste Isolation Pilot Plant (WIPP), an operating GDF for "transuranic" (TRU) wastes[1], and at Yucca Mountain, a site that was investigated for a GDF to hold all US spent fuel. It also heard about NWTRB work since the cancellation of the Yucca Mountain project and about the appointment of a "Blue Ribbon Commission" (CoRWM doc. 2725). The Commission is conducting a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all the alternatives for the storage, processing and disposal of civil and defence spent fuel, HLW and materials derived from nuclear activities.[2]

20. CoRWM has followed developments in the European Union COWAM (Community Waste Management) in Practice project. This is about sharing good practice in involving local communities in radioactive waste management (*www.cowam.com*). CoRWM attended the September 2009 meeting of UK participants in the project, which discussed community benefits packages, a national case study of community involvement and needs for further research.

21. CoRWM has also followed developments in China, which has plans to build more than 20 new nuclear power stations in the next decade or so and to reprocess spent fuel. A CoRWM member visited China twice (once with the IAEA and once with a UK team including NDA and National Nuclear Laboratory participants) to examine the Government's waste management strategy and plans. Several potential sites for a GDF have been identified, including one in granite in the Gobi desert where borehole drilling sections have already been taken. An underground rock laboratory is being designed and is planned to be in operation by 2020. While this site is the most advanced, the Chinese Government desires another site (with different rock, probably clay) to also undergo full sub-surface characterisation so that the sites can be compared and a decision on which to use taken on technical grounds. The intention is that a GDF will be operational by about 2050.

CoRWM Review of Its Effectiveness

22. In March 2009 CoRWM agreed a process to review its effectiveness (CoRWM doc.2555) and adopted the following criteria by which it would judge its success:

    - CoRWM is a trusted and authoritative source of advice
    - CoRWM has carried out its work to a high standard and to time and budget
    - CoRWM has had a demonstrable positive effect on the management of the UK's HAW.

23. Evidence for the review of effectiveness was gathered during the year. It took the form of programme progress reports and budget reports to plenary meetings, feedback from

[1] TRU waste is a term used mainly in the USA. In UK terminology TRU wastes are long-lived, actinide-containing intermediate level wastes, such as plutonium contaminated materials.
[2] There is further information on the Commission's website *http://brc.gov*. It is due to produce an interim report in mid-2011 and a final report early in 2012.

questionnaires circulated to stakeholders and consideration of Government responses to recommendations in the Committee's reports on interim storage (CoRWM doc. 2500) and geological disposal (CoRWM doc. 2550). Account was also taken of evidence submitted by various organisations to the House of Lords Science and Technology Committee inquiry (Section 7) and the findings of that inquiry (House of Lords, 2010a). The impacts of CoRWM's scrutiny and advice are dealt with in Section 6.

24. CoRWM reviewed its effectiveness at its plenary meeting in April 2010 (CoRWM doc.2798). The key points from the review were:

- Feedback from questionnaires was generally positive. However, a number of stakeholders stated that it was too soon to assess whether CoRWM has had a demonstrable positive effect on the management of HAW. This was reflected in evidence to the House of Lords inquiry (House of Lords, 2010a).
- The work programme for 2009-10 was largely completed and this was done within budget. There is a need, however, for better detailed work programming to ensure that adequate time is always allowed for factual checking and PSE on draft documents.
- The proposed 2010-13 work programme (CoRWM doc. 2800) was submitted to Government for approval in March 2010 and is more focused than previous years. This reflected experience of previous year's programmes and feedback from stakeholders that programmes had been too broad and resources somewhat stretched.
- CoRWM had improved its working practices during the year, particularly by devising and applying quality control procedures for documents (CoRWM docs. 2539, 2771) and clarifying how it formulates its various types of advice (paras 10-11; CoRWM doc. 2806).
- Assessing the effectiveness of an advisory and scrutiny committee will always be difficult, especially in the case of one concerned with long-term activities such as the management of HAW.
- CoRWM will be looking at the assessment processes used by similar advisory bodies in other countries, in order to identify best practice.
- The improved CoRWM web site and the use of modern survey techniques will extend the opportunities for obtaining feedback on the Committee's performance.

3. SCRUTINY AND ADVICE ON INTERIM STORAGE

The Interim Storage Tasks and CoRWM's Approach

25. CoRWM's report to Government on interim storage (CoRWM doc. 2500) was published at the end of 2008-09. The tasks on interim storage set out in CoRWM's 2009-10 work programme (CoRWM doc. 2515.2) were:

Task 1: Scrutinise and advise on interim storage issues for HAW and materials that may be declared to be wastes, including:

a) monitoring actions taken in response to the recommendations in CoRWM's March 2009 Interim Storage Report (CoRWM doc. 2500)

b) scrutinising the NDA's development of its Topic Strategy for HAW, including its work on management options for short-lived intermediate level wastes (ILW)
c) following NDA progress in the development of its Topic Strategies for spent fuels, plutonium and uranium
d) keeping a watching brief on waste transport issues (with a view to undertaking a major piece of work in 2010-11).

Task 2: Scrutinise the development of Scottish Government policy for the management of higher activity wastes, including the associated Strategic Environmental Assessment (SEA) and advise accordingly.

26. CoRWM's scrutiny work for Task 1 was carried out largely through meetings with NDA and regulators. These meetings dealt with progress on the various NDA Topic Strategies[3], and with actions being taken in response to the recommendations in CoRWM's report on interim storage (CoRWM doc. 2500).

27. For Task 2 CoRWM drew up a detailed plan of action that had six main strands, as follows.

i) Scrutinising the development of the consultation proposals, including attending meetings organised by the Scottish Government and offering informal comments on early drafts of its consultation material.

ii) Meeting a range of stakeholders to learn their views on the Scottish Government's proposals. The purpose of these meetings was to inform CoRWM's view of the policy and what the implications of its implementation might be.

iii) Holding meetings with British Energy, Dounreay Site Restoration Ltd, the Highland Council, Magnox North, NDA, the Health and Safety Executive (HSE), and the Scottish Environment Protection Agency (SEPA). Members also attended a Scottish Government stakeholder workshop on 29 January 2010, to observe the Government's engagement process and hear the views of a range of stakeholders including local government, NGOs, nuclear site operators and others. Members also met with a number of NGOs and local site stakeholders at Dounreay and Hunterston.

iv) At its February 2010 plenary meeting CoRWM discussed the key issues emerging from bilateral meetings (CoRWM doc. 2779), and its own review of the consultation documents. This informed the preparation of CoRWM's response to the consultation

v) CoRWM discussed and agreed a formal response to the Scottish Government at its March 2010 plenary, which was then submitted (CoRWM doc. 2795).

[3] Details are at www.nda.gov.uk/strategy/overview.cfm

vi) CoRWM proposes to scrutinise the process whereby the Scottish Government finalises and adopts its policy and this will be the subject of a position paper to be produced, probably towards the end of 2010.

Management of Higher Activity Wastes UK-Wide

Nuclear Decommissioning Authority

28. CoRWM discussed NDA progress on its HAW Topic Strategy at meetings with NDA in June 2009 and March 2010 (CoRWM docs. 2624, 2792) and at a meeting with HSE, the Environment Agency (EA) and SEPA in March 2010 (CoRWM doc. 2811). The NDA's existing and planned Integrated Project Teams (IPTs) on various aspects of HAW management were also discussed at these meetings.

29. For topic strategy purposes, NDA divides HAW into several categories:
    - UK-owned high level waste (HLW)
    - overseas-owned HLW
    - overseas-owned ILW
    - wet ILW (*e.g.* sludges, ion exchange resins)
    - solid ILW (*e.g.* metals, concrete)
    - graphite.

30. For each category there is a baseline strategy and, where appropriate, NDA is exploring alternative strategies, with a view to changing the baseline strategy if it would be optimum to do so. In exploring alternative strategies, account is taken of the need to achieve passive safety as soon as is reasonably practicable and of opportunities to improve HAW management in various ways (*e.g.* by reducing the quantities of HAW destined for geological disposal). There are two categories of alternative strategies: those that mitigate risks and those that provide a step change in benefits, compared to the baseline.

31. The IPTs are NDA-led projects that will underpin strategy development or provide better management methods for particular wastes. They are partnerships between NDA and one or more of its Site Licence Companies (SLCs). At present there are IPTs on reactor decommissioning wastes, interim storage and thermal treatment.

32. CoRWM notes that the present NDA topic strategy development process does not deal with some strategic issues in a very transparent way. In particular there are a number of issues that NDA considers as "opportunities" that CoRWM regards as requiring strategic direction. These issues include:
    - consolidation of storage of HAW on fewer sites (so that not every NDA site has to have a HAW store)
    - consolidation of HAW treatment (by moving wastes from one site to another for treatment or by using mobile treatment plant)
    - treatment of some HAW to make it suitable for near-surface disposal (*e.g.* decontamination, segregation*).*

33. CoRWM has been monitoring progress in the Letter of Compliance (LoC) process carried out by NDA's Radioactive Waste Management Directorate (RWMD) (CoRWM doc. 2792). LoC assessments are an integral part of the management of HAW on nuclear-licensed sites and support site operators' safety cases for HAW conditioning, packaging, storage and geological disposal (Radioactive Waste Management Cases). LoC assessments are also requested by waste owners and operators as part of their exploration of alternative conditioning methods.

34. In its March 2009 report on interim storage (CoRWM doc. 2500), CoRWM raised the question of whether RWMD needed more resources in order to speed up new LoC assessments and reviews of existing LoCs. As far as the Committee is aware, NDA has not yet addressed this question.

Regulatory Developments

35. In addition to its bilateral meetings with regulators, CoRWM attended an EA workshop on approaches to assuring the disposability of HAW packages (CoRWM doc. 2637). The workshop was part of a project on the monitoring and inspection regimes and techniques that could be used to determine whether packages of ILW and HLW remain disposable during interim storage, on arrival at a GDF and during any period that a GDF remains open before backfilling and sealing.

36. A notable regulatory development during the year was the publication of revised and new modules of the joint regulatory guidance on the management of HAW on nuclear licensed sites (HSE *et al.*, 2010). The regulators informed us (CoRWM doc. 2811) that some organisations are already complying with the guidance but others seem reluctant to do so.

Strategic Co-ordination

37. In its 2009 report on interim storage (CoRWM doc. 2500), CoRWM recommended that there should be greater UK-wide strategic co-ordination of the conditioning, packaging and storage of HAW. In its response to the report (DECC *et al.*, 2009), Government accepted this recommendation and stated that it was exploring the best means of implementing it and would invite CoRWM to provide input to and scrutinise proposals as they developed.

38. As yet, CoRWM has not been invited to provide any input to proposals. The Committee notes that there appears to be greater co-ordination at the technical level than when its report was published (*e.g. via* the IPTs). It has also been told that the Radioactive Waste Policy Group (RWPG), which is made up of Government and regulators, has new members and new terms of reference, which may enable it to encourage strategic co-ordination (CoRWM doc. 2811). For NDA, the Strategy Development and Delivery Group (SDDG) has existed for about 18 months and now involves the Ministry of Defence (MoD), as well as Government and regulators. It is not clear to CoRWM whether the SDDG can play a role in UK-wide strategic coordination.

Management of Spent Fuels, Plutonium and Uranium

Spent Fuels

39. CoRWM discussed NDA progress in developing topic strategies for spent fuels at meetings with NDA and regulators in June 2009 and March 2010 (CoRWM docs. 2624, 2793, 2811). The current situation for Magnox fuel is that work is in hand to develop an alternative to reprocessing, should one be required, but reprocessing is very much the preferred route.

40. NDA is likely to decide over the next year or two how much AGR fuel to reprocess because this is linked to key investment decisions at Sellafield. Work on the management of AGR fuel that is not to be reprocessed is progressing but as yet there is no safety case for longer-term storage of the fuel at Sellafield (in existing ponds or in a new dry storage facility) and no detailed assessment of the disposability of AGR fuel.

41. For the "exotic" fuels[4], two types of decision are needed: how to treat them (either to condition them for disposal or to recover useful materials) and where to treat them (at the sites where they are now kept or at Sellafield). The issues are complex and involve safety and financial considerations and the views of stakeholders at various NDA sites and near potential transport routes.

42. CoRWM has also been monitoring progress by British Energy on the management of spent fuel at Sizewell B. British Energy has carried out a number of local consultations and will submit a Planning Application and Environmental Statement for a dry storage facility for Sizewell B fuel in 2010 (British Energy, 2009). There will then be a public consultation on British Energy's proposals.

Plutonium

43. In 2009-10 CoRWM attended a DECC workshop on the long-term management of the UK's separated civil plutonium (Environment Council, 2009) and sent informal comments to DECC on two pre-consultation discussion papers on long-term plutonium management (CoRWM docs. 2690, 2718). It discussed long-term plutonium management at its November 2009 plenary meeting (CoRWM docs. 2723, 2729). This discussion was intended to be a pre-cursor to considering whether, and if so how, to respond to a DECC consultation on the long-term management of plutonium. This DECC consultation was delayed; CoRWM understands that it will begin later in 2010.

44. NDA cannot progress with its topic strategy for plutonium until DECC has held its consultation and decided on a UK strategy. Meanwhile, NDA is carrying out R&D on plutonium immobilisation. There is also work on disposability of MOX fuel (as input to consideration of plutonium recycling) (CoRWM doc. 2793).

Uranium

45. NDA work on its topic strategy for uranic materials is progressing (CoRWM doc. 2793). Work is in progress on options for the management of the uranium hexafluoride at

[4] NDA uses the term "exotic fuels" for non-standard fuels, mainly from research reactors that were closed many years ago.

Capenhurst. Options being considered include continued storage as hexafluoride in new containers, deconversion to oxide at Capenhurst and deconversion to oxide elsewhere. NDA's RWMD is considering the disposability of uranic materials.

Strategic Co-ordination

46. CoRWM recommended in its 2009 report on interim storage (CoRWM doc. 2500) that there be greater UK-wide strategic co-ordination of the management of spent fuels, plutonium and uranium. By this it meant greater strategic co-ordination between the owners of these materials (NDA, MoD, British Energy and Urenco UK Ltd), with the involvement of Government and regulators. Government accepted this recommendation (DECC *et al.*, 2009) but has not put forward any proposals. Nevertheless, it appears that co-ordination between NDA and MoD is improving. In addition, the remit of RWPG has been expanded to cover spent fuels, plutonium and uranium (CoRWM doc. 2811).

Transport

47. CoRWM met with Department for Transport (DfT) in January 2010 (CoRWM doc. 2764) and briefly discussed transport with NDA in March 2010 (CoRWM doc, 2792). It was found that there are extensive interactions between waste producers and DfT on HAW packaging issues. In view of this, and the prescriptive nature of the transport regulations, it was concluded that there would be no value in CoRWM carrying out any major work on packaging for transport.

48. CoRWM also concluded from these meetings that there is a lack of strategic planning for transport of existing, committed and new build wastes. In particular, it is not clear to CoRWM who will co-ordinate the identification of the current infrastructure that needs to be maintained or the new infrastructure that will be needed for transport of HAW and spent fuels for treatment, storage and disposal (CoRWM doc. 2764). The Committee notes that NDA's Topic Strategy for transport and logistics deals only with current arrangements.

Provision of Information to the Public

Information on HAW Management

49. CoRWM recommended in its 2009 report on interim storage (CoRWM doc. 2500) that appropriate information be made publicly available on the management of higher activity wastes, spent fuels, plutonium and uranium. It considered that there was a need to summarise, for a variety of readerships, the progress to date, the management options under consideration for the future, and the issues involved in choosing between alternative options.

50. In its response to this recommendation (DECC *et al.*, 2009), Government mentioned various pieces of work that NDA had in hand. CoRWM discussed these with NDA in March 2010 (CoRWM doc. 2792). While what NDA is doing is valuable, it does not really address the key issue in CoRWM's recommendation. In particular the NDA's Radioactive Waste Management Information Strategy is about information management by waste producers and owners, not provision of information to the public. There is still a need for

information on plans for the management of the various types of HAW, to complement the information in the UK Radioactive Waste Inventory (Defra & NDA, 2008) about waste quantities and characteristics.

Security Information

51. CoRWM discussed its 2009 recommendation about making security information publicly available (CoRWM doc. 2500) with the Office of Civil Nuclear Security (OCNS) (CoRWM doc. 2746). CoRWM's understanding is that planned enhancements to the OCNS website have been delayed pending the formation of the Office for Nuclear Regulation, of which OCNS will be a part.

52. After the meeting with OCNS, CoRWM took further action on the specific issue of information about designing HAW stores and spent fuel stores to resist 9/11 style terrorist attacks. It wrote to OCNS and to the Nuclear Installations Inspectorate (NII) summarising its current understanding of the assessment and mitigation of aircraft impact risks and asking some questions. It then produced a note based on that summary and the NII and OCNS response (CoRWM doc. 2740). The key point is that regulators will require new stores to be designed so as to mitigate the consequences of 9/11 style attacks.

Development of Scottish Government HAW Management Policy

53. The proposed Scottish Government Policy is to *"support long-term near surface, near site storage and disposal facilities so that the waste is monitorable and retrievable and the need for transporting it over long distances is minimal*" (Scottish Government, 2010).

54. CoRWM presented a detailed response (CoRWM doc. 2795) to each of the questions posed in the consultation. It also made the general comment that it felt that, while it was clear that a great deal of effort and work had gone into producing the consultation documents and the evidence that underpinned the development of the policy, there were areas where they could have been significantly improved.

55. CoRWM presented a list of principal comments on the policy proposals (CoRWM doc. 2795) and these are reproduced below.

    i) CoRWM considers that the policy would benefit from having more information on the physical and chemical nature of the waste being produced in Scotland. The Policy Statement needs to bring out that, within the definition of HAW that is included, there is a sizeable portion of waste (the Environmental Report suggests approximately 25% by volume) that will not be suitable for near-surface disposal. The Policy Statement should be clear about the process for arriving at an end-state for this waste.

    ii) The policy is general and enabling, and places responsibility for developing an implementation strategy with owners and producers. The policy does not ensure optimisation and co-ordination. CoRWM believes the Scottish Government needs to give more explicit guidance about what the implementation strategy is aiming to achieve. For example, is there a preference, where possible, for disposal?

What are the full ranges of criteria for arriving at siting decisions? There also needs to be more guidance about the process for developing the implementation strategy and the likely timelines.

iii) The Policy Statement needs to make it clear that the NDA will lead the development of an Implementation Strategy. Scottish Government will have to direct and enable the NDA to take on this lead role.

iv) The Policy Statement needs to spell out how considerations of cost, affordability and best value will be taken into account in developing an implementation strategy.

v) The final policy statement needs to be stand-alone. Consequently, information and detailed definitions that are currently within the Environmental Report need to be brought into the Policy Statement. For example, it is stated in the Environmental Report that the preference is for disposal but this is not reflected in the Policy Statement.

56. CoRWM will scrutinise how these principal comments and the other important issues raised in its response to the consultation (CoRWM doc. 2795) are addressed in the development of the final policy.

4. SCRUTINY AND ADVICE ON GEOLOGICAL DISPOSAL

The Geological Disposal Tasks and CoRWM's Approach

57. The tasks on geological disposal set out in CoRWM's 2009-10 work programme (CoRWM doc. 2515.2) were:

Task 3: Complete CoRWM's 2009 report to Government on geological disposal report.

Task 4: Scrutinise and advise on the voluntarism and partnership approach to geological disposal facility siting, including:

a) scrutinise Government work to increase awareness of the invitation to communities and monitor responses
b) scrutinise Government and NDA engagement with communities that have expressed an interest.

Task 5: Scrutinise and advise on site assessment, including:

a) scrutinise the British Geological Survey's screening out of unsuitable areas
b) scrutinise the NDA's and others' approaches to the assessment of skills and infrastructure requirements for desk-based studies and surface-based investigations (stages 4 and 5 of the siting process).
c) scrutinise NDA preparations for stage 4 of the siting process (desk-based studies).

Task 6: Scrutinise and advise on NDA implementation and safety case work, including:

a) scrutinise NDA's continuing development of its Provisional Implementation Plan

b) scrutinise NDA's continuing development of its Generic Disposal System Safety Case.

Task 7: Monitor actions taken in response to the recommendations in CoRWM's July 2009 Geological Disposal report.

Task 8: Maintain a watching brief on decision making, funding, risk management and regulatory developments.

58. A draft of CoRWM's report to Government on geological disposal was sent out to stakeholders for comment and placed on the CoRWM website. The comments received were logged and published with CoRWM's responses to them (CoRWM doc. 2592). A stakeholder event was held in Cumbria in May 2009 to discuss the draft report (CoRWM doc. 2593). All the comments received were considered during finalisation of the report.

59. CoRWM had regular contacts with DECC in order to scrutinise Government work to increase awareness of the invitation to communities to express an interest in entering discussions about becoming involved in the process of siting a GDF (Task 4a). Only one part of the UK has so far expressed an interest, namely West Cumbria. CoRWM scrutinised Government and NDA engagement in Cumbria (Task 4b) mainly by attending meetings of the West Cumbria Managing Radioactive Waste Safely (MRWS) Partnership (*www.westcumbriamrws.org.uk*) as an observer. At CoRWM's plenary meeting in December 2009, the leader of Copeland Borough Council gave a presentation to Committee about the work of the Partnership (CoRWM docs. 2743, 2744). CoRWM kept in contact with the Nuclear Legacy Advisory Forum (NuLeAF) about the GDF siting process and other aspects of the management of HAW. The Executive Director of NuLeAF gave a presentation to CoRWM at a plenary meeting (CoRWM docs. 2734, 2743).

60. It is planned that NDA's RWMD will become the delivery organisation for geological disposal. CoRWM's scrutiny of work for assessment of possible sites for a GDF (Task 5) was carried out through meetings with RWMD, EA, the British Geological Survey (BGS), and written and telephone communications with DECC and the West Cumbria MRWS Partnership.

61. CoRWM's scrutiny of NDA work on implementation of geological disposal (Task 6a) was carried out through written comment on RWMD documents relating to implementation, followed by a meeting with RWMD focused on the processes it is putting in place to facilitate implementation. There was no specific scrutiny work on RWMD's development of its generic Disposal System Safety Case (DSSC), although CoRWM maintained awareness of RWMD plans (*e.g.* CoRWM doc. 2766). This scrutiny will take place in 2010-11, after RWMD publishes a first version of the DSSC.

2009 Report to Government on Geological Disposal

62. CoRWM's report to Government on geological disposal was issued at the end of July 2009 (CoRWM doc. 2550). The report covers:

- voluntarism and partnership in the GDF siting process
- decision making, funding and managing risks in the implementation of geological disposal
- international experience
- PSE
- the regulatory framework for geological disposal
- land use planning and SEA
- developing concepts and designs for geological disposal.

63. The report contains five recommendations, which are given in full in Annex D. The recommendations are about:

- developing the principles to be used in deriving Community Benefits Packages
- explaining how local stakeholders would have the opportunity to influence the planning process for a GDF if the planning application is referred to the Infrastructure Planning Commission[5]
- discussing with communities that have expressed an interest the advantages and disadvantages of single and two staged planning applications for underground investigations and construction of a GDF
- carrying out options assessments in which a wide range of geological disposal concepts is considered and stakeholders are involved
- the need for an integrated process for GDF design, site assessments and safety case development.

64. Government responded to the report in November 2009 (DECC & DoENI, 2009). The response stated that Government largely agreed with CoRWM's recommendations and set out the work in progress or planned to address them. Some specific pieces of work are noted in the relevant sub-sections below; further details are in Section 6.

Voluntarism and Partnership

Increasing the Awareness of Communities to the Invitation to Participate

65. Government worked throughout 2009-10 to increase community awareness of the invitation to express an interest in entering without commitment discussions about hosting a GDF. DECC and NDA staff attended local authority conferences, offering the opportunity for elected members and officials to obtain more information on the issues. In the autumn of 2009 the DECC Minister of State wrote to the chief executives of local authorities reminding them of the invitation. As of now (May 2010), no other community has expressed an interest.

Government and NDA Engagement in West Cumbria

66. Various members of CoRWM attended meetings of the West Cumbria MRWS Partnership as observers during 2009-10. Progress in the work of the Partnership is a

[5] Current Government policy is that the Infrastructure Planning Commission will be abolished and replaced by a different fast-track planning procedure for major projects.

standing item at CoRWM's plenary meetings and CoRWM provides information and advice to the Partnership when it is appropriate to do so.

67. In March 2010 CoRWM met with the Partnership's Steering Group to obtain their views on Government and NDA support for the Partnership's work (CoRWM doc. 2790). The Steering Group told CoRWM that the Partnership had received all the support it needed from DECC but that it thought the importance of the Partnership merited greater recognition in Government, in particular it would be helpful if it was recognised at Ministerial level. The Steering Group was also very pleased with how individuals from NDA had worked with the Partnership. It had some concerns about whether the level of NDA support in the future would be sufficient to meet all the Partnership's needs and whether NDA appreciated that the Partnership required time to do its work.

68. The topics covered in the first three of CoRWM's recommendations in its 2009 report to Government on geological disposal (CoRWM doc. 2550) are being addressed in the work of the Partnership, with input from the Government and regulators. There is a Partnership workstream on Community Benefits Packages (Recommendation 1), in which DECC participates. Planning applications (Recommendations 2 and 3) are to be covered in a workstream on safety, security, environment and planning (West Cumbria MRWS Partnership, 2010a).

Site Assessment

Screening Out of Unsuitable Areas

69. The process of screening out areas that are obviously unsuitable for a GDF will be carried out by the British Geological Survey (BGS), working under contract to DECC. The draft BGS report will be made available, for discussion and peer review, to the relevant communities and local authorities, NDA, the regulators and CoRWM.

70. The screening process in West Cumbria is due to begin in summer 2010. CoRWM has provided advice and comments to the West Cumbria MRWS Partnership on the peer review of the screening process and on CoRWM's role with respect to the process and the peer review (CoRWM doc. 2711).

71. The points made about CoRWM's role were:

- CoRWM could provide advice on and scrutiny of the site screening process. It could scrutinise the BGS screening process and its appropriateness, the robustness of the peer review arrangements put in place, and the quality of engagement with the Partnership on the peer review process and its co-ordination.
- CoRWM would not act in the role of peer reviewer of the BGS report. Whilst CoRWM would receive the BGS report and develop a view on it, this would be focused on scrutiny of the BGS screening process as a whole and within the context of MRWS Stage 2.

72. With respect to co-ordination of the peer review for the BGS screening process, CoRWM provided the following advice:

- It is reasonable that Government (via DECC) works with the Partnership and BGS to develop a coordinated peer review process.
- Co-ordination would include definition of the planned timescale for review, avenues for submission of reviews, style of reviews, deadlines for completion, rules regarding use of data, and rules regarding attribution of sources and use of third parties.
- All the relevant material should be available to all reviewers equally.
- The process for considering the reviews should be open, transparent and fair.
- Reviews must be independent and technically credible.
- Cost and value for money are important but secondary considerations to the provision of clearly independent professional reviews. However, parties with shared interests may jointly wish to commission or utilise a single peer review.

73. Additional informal advice was provided on specific detailed aspects of peer review, including terms of reference, independence and objectivity, and credibility and competence.

74. The status of BGS processes and plans in relation to the screening out of unsuitable areas was discussed in a meeting between CoRWM and BGS in February 2010 (CoRWM doc. 2801). A key point from this meeting was that the provisional timetable gave BGS 10 weeks to undertake its study and submit a final report to the West Cumbria MRWS Partnership. This included a fortnight for the peer review of the draft report and for BGS amendments in the light of the review. During discussion at the February 2010 plenary (CoRWM doc. 2788), it was suggested that CoRWM contact both the Partnership and DECC with advice to extend the time period allowed for peer review and amendment of the BGS report.[6]

75. CoRWM emphasised to BGS the importance of stating clearly in its screening report that areas not excluded are not automatically suitable. How this point is presented, both in words and in figure or map form, would be critical to the engagement with the communities in West Cumbria.

Identifying Sites for Desk-Based Studies

76. Desk-based studies are Stage 4 of the GDF siting process, after the screening out of unsuitable areas (Stage 2) and the community's Decision to Participate (Stage 3) (Defra *et al*., 2008). In order to proceed from Stage 2 to the site assessment in Stage 4 there has to be a process for moving from areas that have not been excluded to sites for desk-based studies. RWMD carried out work on developing a proposed process in 2009 and discussed it with CoRWM at a meeting in January 2010 (CoRWM doc. 2782).

77. RWMD had considered in detail the situation in which a Community Siting Partnership asks NDA to develop and apply a process in consultation with stakeholders, in order to define potential sites for desk-based characterisation. CoRWM advised on the need to be very cautious, especially with respect to how different administrative bodies are to be

[6] This was later overtaken by events and a longer period will now be allowed for peer review and finalisation of the BGS screening report.

involved. These need to be given the opportunity to participate and support the process. Maintenance of partnership confidence requires a clear strategy of support, education and information, especially if the process appears to be 'stop-start' or have gaps between stages.

78. CoRWM noted that the relationship between application of objectives, exclusion criteria and timing of geological assessment needs to be made clear before desk-based studies begin. It suggested that a possible approach would be to assess potential host geologies and locations for surface facilities in parallel, producing maps to illustrate these. The two maps could then be overlain to see the differences between them. During this assessment it would be important not to introduce arbitrary constraints on the depths of underground facilities or on the distances between surface and underground facilities. CoRWM also advised that the possible relationships between excluded areas, sites for GDF surface facilities and sites for underground facilities need to be carefully explained to stakeholders and the public at an early stage.

Site Characterisation

79. CoRWM attended an Environment Agency (EA) workshop on "Assessing the Characterisation of Geological Environments for Repository Implementation" in September 2009 (CoRWM doc. 2707; Quintessa, 2009). The workshop was designed to contribute to developing EA work on understanding uncertainties in desk-based studies and surface-based characterisation and the role of underground investigations, and to provide comment on the MRWS timeline and its relationship with staged regulation. The workshop was broken down into thematic sessions: desk-based studies (MRWS Stage 4), surface-based characterisation (Stage 5), underground characterisation (Stage 6) and management issues.

80. Some general conclusions of the workshop were:

- at present it is not possible to define in detail the activities within each MRWS stage
- the permitting process for all characterisation work needs to be flexible
- hold points imposed by regulators should not be 'stop' points.
- MRWS Stage 5 should include time for re-processing data from the MRWS Stage 4 prior to detailed investigations
- characterisation work under MRWS Stage 6 should be in two parts: underground research and underground characterisation
- an underground research facility would be required at each prospective GDF site
- the management of the process has to recognise that the project will change from a dominantly science-based project to an engineering project through its life cycle and this should be central to implementation planning.

NDA Implementation Planning

81. In summer 2009 CoRWM commented on a draft of an RWMD document titled "Geological Disposal: Planning for Implementation". It then met with RWMD to discuss the document and the RWMD implementation planning process in general (CoRWM doc. 2714).

82. RWMD indicated that the Provisional Implementation Plan (PIP), which is in effect the Lifetime Plan for a GDF up to and beyond its closure, would not be developed further in 2009-10. RWMD was focusing on developing a 5-year plan that would cover in detail the steps in the MRWS GDF siting process leading towards a Government decision on surface-based investigation. The 5-year plan was also required for assessment in the Government's Public Value Programme, which aimed to identify spending priorities in preparation for the next Comprehensive Spending Review.

83. Discussion of the Planning for Implementation document included the transition from generic to more site specific studies and the need for options assessments covering a wide range of geological disposal concepts (the fourth recommendation in CoRWM doc. 2550). CoRWM understands that the final version of the document, which has been retitled “Geological Disposal: Steps Towards Implementation”, will be published later in 2010. It will provide a first point of reference for the public on RWMD’s early planning for the implementation of geological disposal.

84. The PIP might become the definitive Implementation Plan if and when a community took a Decision to Participate in the siting process, but this change to the PIP would depend on many factors, including regulatory requirements that are also evolving. RWMD also explained that the PIP would, when developed, indicate what might happen on a range of assumptions not all of which would prove valid. Once site-specific work began, the generic work undertaken so far could be "banked" and subsequent work tailored to the site.

85. R&D needs and gaps would be identified as part of the process of developing a site-specific design and this would involve discussions with the local community. If an area wanted to see how the process might develop after any Decision to Participate, a set of "bounding" assumptions could be agreed with the Partnership and the PIP could then be made specific to the area. The generic PIP could be used for any other communities expressing an interest.

86. The delay in publishing the NDA Planning for Implementation document meant that CoRWM was unable to carry out scrutiny on this topic in late 2009 and early 2010.

5. SCRUTINY AND ADVICE ON OTHER TOPICS

Research and Development

The R&D Tasks and CoRWM’s Approach

87. The tasks on research and development (R&D) set out in CoRWM’s 2009-10 work programme (CoRWM doc. 2515.2) were:

Task 9: Complete CoRWM’s 2009 report to Government on R&D
Task 10: Scrutinise the implementation of the high-level RWMD R&D Strategy
Task 11: Scrutinise the development of the RWMD R&D work programme

Task 12: Monitor actions taken in response to the recommendations in CoRWM's 2009 report to Government on R&D.

88. Completion of the 2009 CoRWM report to Government on R&D (CoRWM doc. 2543) involved addressing and responding to comments received (CoRWM doc. 2630) when the draft report was sent out for consultation to stakeholders and placed on the CoRWM website. It also involved taking into account points made at a stakeholder event held in September 2009 to discuss the draft report (CoRWM doc. 2677).

89. Tasks 10 and 11 were taken together because much of the implementation of the RWMD R&D Strategy (NDA, 2009a) will take place *via* the development, and the carrying out, of the RWMD R&D Work Programme. CoRWM received drafts of RWMD R&D work programme documents for comment and held a meeting with RWMD in January 2010 to discuss the programme (CoRWM doc. 2776).

90. Government has yet to respond to CoRWM's 2009 report on R&D (CoRWM doc. 2543), so it has not been possible to carry out much work on Task 12. However, a meeting was held with NDA to discuss all its R&D relevant to CoRWM's remit at which the recommendations in the report were discussed (CoRWM doc. 2766). In addition, CoRWM has been following developments at the Research Councils.

91. In September 2009, CoRWM responded to a call for evidence for an inquiry on setting priorities for publicly funded research by the House of Lords Science and Technology Committee. In order to meet the House of Lords Committee's deadline it was necessary to respond before the 2009 R&D report was finalised. CoRWM then revised its evidence (CoRWM doc. 2719) following publication of its R&D report.

2009 Report to Government on R&D

92. CoRWM's report to Government on R&D was issued at the end of October 2009 (CoRWM doc. 2543). The report covers:

- the UK's process for providing R&D in the management of HAW
- the skills requirements to support R&D in the MRWS programme, in particular those R&D skills needed to enable implementation of geological disposal
- the infrastructure requirements, in particular those facilities supporting R&D on highly radioactive materials and facilities for R&D that will need to be carried out underground
- PSE on the above topics.

93. The report contains six recommendations, which are given in full in Annex D. These are about:

- the need for strategic co-ordination of UK R&D for the management of HAW (within the NDA, between the NDA and the rest of the nuclear industry, amongst the Research Councils and between the whole of the nuclear industry, its regulators and the Research Councils)

- ensuring that EA and SEPA obtain the resources they need to access and commission additional independent research
- assigning to a single organisation the responsibility for providing leadership and strategic direction for the provision of R&D skills relevant to HAW management
- improving and enhancing the capabilities of UK facilities for research with highly radioactive materials and making them more accessible to researchers
- establishing an underground research facility at any site in the UK where it is proposed to construct a GDF.

94. In the letter explaining why the Government's response to the R&D report had been delayed, Lord Hunt, the DECC Minister of State, stated that:

"This report is wide ranging and raises a number of interesting and inter-connected points that cut across the work of several Government departments, Devolved Administrations and delivery agencies. Officials from CoRWM's sponsor departments are currently working together with these bodies to examine the report and recommendations jointly to ensure that issues raised are considered, as far as possible, in a joined up manner."

NDA R&D

R&D on Management of HAW

95. A meeting with NDA on R&D in January 2010 (CoRWM doc. 2766) provided CoRWM with an overview of the R&D being carried out by NDA and its SLCs that is relevant to CoRWM's interests. The meeting began with a brief discussion of the recommendations in CoRWM's 2009 report to Government on R&D (CoRWM doc. 2543), which NDA broadly supported. NDA then described how its own R&D, particularly the Direct Research Portfolio, is managed. NDA re-emphasised that it would only fund research that it designates as needs-driven.

96. Most of the R&D that NDA pays for is funded through the SLCs (CoRWM doc. 2543). NDA stated that it cannot direct the SLCs as to which R&D to fund but can only advise. CoRWM asked about strategic oversight of all the R&D and who in NDA has an overview. This led to a discussion of the role of the NDA Research Board on Decommissioning and Clean Up (NDARB) and the Nuclear Waste Research Forum (NWRF), which reports to the NDARB.

97. The NDARB is primarily concerned with NDA's own research and co-ordinating this with other organisations. The NWRF provides a forum for SLCs, other nuclear site licensees and regulators to talk to each other. Neither the NDARB in its present form nor the NWRF is an appropriate mechanism for carrying out the strategic co-ordination of R&D that CoRWM considers is needed (CoRWM doc. 2543). CoRWM has been invited to attend NWRF meetings as an observer and has accepted the invitation.

98. In March 2010 NDA published its business plan for 2010-13 (NDA, 2010). This indicates that NDA's own spend on R&D in 2010-11 will be £6 million, compared to £34 million in 2009-10. It is not yet clear to CoRWM how NDA R&D on HAW management will be

affected by the budget reduction. Nor is it clear to the Committee how SLC funding of R&D will change in 2010-11.

R&D on Geological Disposal

99. CoRWM met RWMD in January 2010 (CoRWM doc. 2776) to discuss a draft of the document that contains an overview of the geological disposal R&D programme, diagrams describing the programme and prioritisation tables. The Committee recognised that it is difficult for RWMD to set out a highly focussed R&D programme in advance of the identification of possible sites for a GDF and hence the types of geological formations and geological disposal concepts that need to be studied.

100. There was also discussion of the need to identify skills gaps and ensure that the programme leads to the development of UK R&D skills on the timescale on which they will be needed. It was noted that there is likely to be strong competition for geological R&D skills from other technical areas (*e.g.* carbon capture, oil and gas exploration).

101. CoRWM has been invited to attend meetings of RWMD's Research Advisory Panel as an observer. It has accepted this invitation and expects to provide input to discussions, where appropriate, and update the Panel on CoRWM's work, as well as observing proceedings. At a meeting with the Chief Executive of NDA in March 2010 (CoRWM doc. 2797), CoRWM learnt that RWMD spend on R&D will increase in future years, as implementation of geological disposal progresses.

102. CoRWM notes that EA is scrutinising RWMD R&D in detail. This is part of EA's scrutiny of all RWMD work relating to geological disposal (EA, 2010).

Research Councils

103. In March 2010 the Chair of CoRWM wrote to the Chief Executive of the Natural Environment Research Council (NERC) expressing concern that, although radioactive waste disposal is identified explicitly in NERC's current strategic plan ("Next Generation Science for Planet Earth"), it is not yet recognised in any of the Theme Action Plans that will deliver the strategy. This may mean that research projects on radioactive waste disposal will not be included in NERC's developing thematic programmes until 2011-12, after the next Comprehensive Spending Review, when budgets may be more limited.

104. In his reply, the Chief Executive of NERC emphasised NERC's current support for relevant research and the flexibility of NERC's strategy and programmes, which would allow expansion if required. He also stated that, subject to approval by its Council, a NERC activity was being developed on radioactivity in the environment. In addition, he invited CoRWM to meet the relevant NERC staff to explore these issues further. CoRWM intends to arrange a meeting in due course.

105. CoRWM is also concerned about the uncertainty in the timing of the Engineering and Physical Sciences Research Council's (EPSRC) call for research proposals on geological disposal. This concern was prompted by an EPSRC-convened workshop in summer 2009; it is still unclear when the programme will be initiated.

106. One of the questions asked by the House of Lords Science and Technology Committee in its inquiry about setting priorities for publicly funded research (House of Lords, 2010b) was about the balance of funding between "targeted" and "responsive-mode" research. In its evidence (CoRWM doc. 2719), CoRWM expressed the view that much more curiosity-driven research is needed for HAW management, in addition to the targeted research sponsored at present by the nuclear industry and the Research Councils. This point was also made in the 2009 report on R&D (CoRWM doc. 2543), which noted that, in the nuclear area, EPSRC makes much more use of "managed calls" for targeted research than it does of "responsive-mode" funding for curiosity-driven research.

107. In its report on its inquiry about setting priorities for publicly funded research (House of Lords, 2010b), the Science and Technology Committee stated:

"It goes without saying that an appropriate balance needs to be maintained between the different types of research. We were told that, in the light of its inherent unpredictability, responsive-mode research is likely to fare less well in challenging economic circumstances than targeted research. With this in mind, ***we urge Research Councils, in determining the appropriate balance, to give due consideration to the role and importance of responsive-mode research in meeting the broader objectives of research****."*

New Build Wastes

The New Build Wastes Task and CoRWM's Approach

108. The task on wastes from new nuclear power stations set out in CoRWM's 2009-10 work programme (CoRWM doc. 2515.2) was:

Task 13: Advise on interim storage and geological disposal issues for ILW and spent fuels from new build nuclear power stations.

109. CoRWM began work on this task in June 2009 when it commented informally on a first draft of the summary of evidence on radioactive waste management that DECC had prepared to accompany the draft National Policy Statement (NPS) for new nuclear power stations. These informal comments were from the points of view of factual accuracy and clarity of expression.

110. In early autumn 2009 CoRWM made informal comments on a further draft of the evidence summary and on a draft chapter for the NPS consultation document and a draft section for the nuclear NPS. Again these comments were only about factual accuracy and clarity of expression.

111. The DECC public consultation on the energy infrastructure NPSs began in November 2009. CoRWM discussed the preparation of its response to the consultation at its December 2009 plenary meeting (CoRWM doc. 2743). It agreed that it would prepare a response to those parts of the nuclear NPS consultation that dealt with ILW and spent fuel and issue a separate statement of CoRWM's current position on new build wastes. It

also agreed the structure of its response and its approach to the consultation questions (CoRWM doc. 2733). The response (CoRWM doc. 2748) and position statement (CoRWM doc. 2749) were prepared over the period from late December 2009 to early March 2010. Drafts were discussed at the January 2010 and February 2010 plenary meetings (CoRWM docs. 2770, 2788).

112. To obtain information for use in its response to the NPS consultation, CoRWM held meetings with regulators and with prospective reactor vendors and operators (CoRWM docs. 2746, 2747, 2764, 2765, 2767). It also invited stakeholders, *via* its e-bulletin and website, to send it any information about new build wastes that they wished to draw to the Committee's attention (CoRWM doc. 2755). All the information received at meetings and by other means was taken into account in preparing the NPS consultation response.

CoRWM's Position on New Build Wastes

113. The March 2010 statement of CoRWM's position on new build wastes (CoRWM doc. 2749) starts from the statements made in the Committee's 2006 Recommendations to Government (CoRWM doc. 700). It reiterates that the Committee's position on the desirability or otherwise of building new nuclear power stations remains neutral, *i.e.* CoRWM is neither for or against new build.

114. The statement then deals with consideration of wastes in the new build assessment process and with the testing and validation of proposals for management of new build wastes. It ends by stating that CoRWM's future work on new build wastes will consist of carrying out scrutiny and providing advice on:

- consideration of waste issues in the public assessment process for new build power stations
- formulation of plans to ensure that, if new build wastes are created, they are safely and securely managed
- prevention and, where that is not possible, minimisation of adverse impacts on the management of existing and committed wastes
- maintenance of public confidence in plans for the long-term management of new build wastes, in addition to existing and committed wastes.

CoRWM's Response to the NPS Consultation

115. CoRWM responded to seven questions in the NPS consultation document. The principal question for the Committee was Question 19, which was:

Do you agree with the Government's preliminary conclusion that effective arrangements exist or will exist to manage and dispose of waste that will be produced by new nuclear power stations in the UK?

116. In its response (CoRWM doc. 2748) CoRWM agreed that some arrangements exist that would be effective for the management of HAW from new nuclear power stations. It went on to state that whether there will be effective arrangements for all the steps in the management, including the disposal, of new build HAW is a matter of judgement, and it is for the Government to make this judgement, based on the information available to it.

117. The response then said that CoRWM considers that the Government should take into account when making this judgement that, while the current UK process for siting a GDF for HAW is sound, it is at an early stage. Its success depends on finding a combination (or combinations if more than one GDF is needed) of a willing host community and a site that is technically suitable to hold enough HAW. At present, it is uncertain whether the appropriate combination (or combinations) of community and site can be found in this country. This uncertainty applies to existing and committed HAW, as well as to new build HAW, and is likely to persist for many years.

118. In addition, the response stated that CoRWM considers that the Government should recognise the need for optimisation of the management, including the disposal, of new build HAW. To meet legal and regulatory requirements, it is necessary for prospective operators of new nuclear power stations, with the assistance of NDA, to identify, assess and compare options for the management of new build spent fuel, including the design and location of stores, the storage period and a range of possible geological disposal concepts.

119. The response also made the point that CoRWM considers that it is essential for the public to have confidence in the management of new build HAW. The need for public confidence is being taken into account in the implementation of geological disposal. To date, insufficient attention has been paid to it in planning for storage of new build spent fuel. This needs to be rectified in future, particularly by prospective operators of new nuclear power stations.

120. In answer to the general consultation question, CoRWM's response made a number of points about the possible impact of the NPS on the long-term management of existing and committed HAW. CoRWM emphasised to Government the importance of the voluntarist approach to the siting of a GDF (or GDFs) and reiterated its view (CoRWM doc. 2550) that it would be helpful if Government were to restate its commitment to this approach and indicate that it would consult stakeholders before adopting any other approach. CoRWM also stated that there is a need for greater integration in planning for the long-term management of existing, committed and new build wastes.

Scrutiny of the PSE of Various Organisations

The PSE Scrutiny Tasks and CoRWM's Approach

121. In 2009-10 CoRWM had two tasks relating to carrying out scrutiny and providing advice on public and stakeholder engagement (CoRWM doc.2515.2):

Task 15: Liaise with other organisations on ways to provide information to the public about the MRWS programme and radioactive waste management in general.

Task 16: Scrutinise the PSE activities of Government, NDA and the regulators related to the MRWS programme.

122. For Task 15 CoRWM took opportunities as they arose, rather than convening specific meetings or requesting documents. For Task 16 CoRWM wrote to Government, NDA, regulators and operators of nuclear sites asking a series of questions about their PSE. Members of CoRWM also observed the PSE practices of various organisations when attending meetings of their stakeholders. In addition, CoRWM monitored the PSE activities of organisations through their literature and websites.

Liaison on Providing Information to the Public

123. CoRWM discussed the provision of information to the public about interim storage related topics with NDA in March 2010 (CoRWM doc. 2792). As noted above in the context of interim storage (para. 49), the work carried out so far by NDA on the management of information about radioactive wastes does not address CoRWM's main concerns (CoRWM doc. 2500).

124. When rebuilding CoRWM's website (para. 16), the decision was taken to focus the site on the Committee's work, leaving other websites to provide general information about the management of higher activity wastes. Three websites were examined to find out whether, between them, they contained the necessary information. These were the main DECC website, the DECC MRWS website and the NDA website[7]. It was noted that there were some gaps and overlaps. These were drawn to the attention of DECC and NDA. There will be further work on this topic during CoRWM's scrutiny of the rationalisation of these three websites that is to take place in 2010-11.

125. CoRWM learnt in June 2009 that EA, HSE and DfT intended to set up joint web pages on regulating geological disposal (CoRWM doc. 2550). The web pages went "live" in December 2009[8]. EA has also revised and expanded its own web pages on geological disposal[9].

Questionnaire on PSE

126. In January 2010 CoRWM put a number of questions (CoRWM doc. 2750) to Governments, NDA, regulators and site operators about their PSE activities. These included how they identified their stakeholders, drew up an engagement strategy and reviewed its effectiveness, and how they made relevant information more accessible. CoRWM asked for comments and observations. A number of responses have been received. These will be evaluated in 2010-11 and the results included in a position paper on PSE to be published in December 2010, with the outcomes of other CoRWM PSE scrutiny activities in 2009 and 2010.

Scrutiny of PSE Related to Geological Disposal

127. The results of CoRWM's initial scrutiny of Government and NDA PSE related to geological disposal are given in the 2009 report to Government (CoRWM doc. 2550). Since then NDA' RWMD has published its Public and Stakeholder Engagement and

[7] *www.decc.gov.uk, http://mrws.decc.gov.uk, www.nda.gov.uk.*
[8] *www.environment-agency.gov.uk/business/sectors/111766.aspx*
[9] For example, *www.environment-agency.gov.uk/business/sectors/37483.aspx*

Communications Strategy for geological disposal (NDA, 2009b). It is currently developing stakeholder engagement plans.

128. As previously mentioned (para. 66), CoRWM is an observer at meetings of the West Cumbria MRWS Partnership[10]. The Partnership is carrying out a wide range of public engagement activities and has independent facilitation for its meetings. The UK Government and NDA are providing support when requested to do so. CoRWM is impressed by the extensive nature and inclusivity of the PSE activities in West Cumbria.

Scrutiny of PSE on Various Aspects of HAW Management

129. CoRWM observes the work of the Government's Nuclear Engagement Group, where the UK Government, the Devolved Administrations, NDA and the regulators share their engagement plans on legacy and new nuclear issues and discuss lessons learned. One of its outputs is the "nuclear consultations" page and map on the DECC website[11]. The Group is independently facilitated.

130. CoRWM attends meetings of the NDA National Stakeholder Group[12] (*e.g.* CoRWM doc. 2803). This also has an independent facilitator. Its effectiveness is reviewed periodically and another review is due in 2010.

131. Meetings at which CoRWM observed the PSE practices of organisations in 2009-10 included:

- DECC workshop on the long-term management of plutonium (Environment Council, 2009)
- Scottish Government workshops for the development of its policy on the long-term management of HAW[13]
- EA workshop on site characterisation (Quintessa, 2009)

132. CoRWM noted British Energy PSE on the proposed dry store for spent fuel at Sizewell B (British Energy, 2009) and some of the DECC and the regulators' PSE related to waste management aspects of new nuclear power stations[14]. In addition, CoRWM took the opportunity during its visits to Hinkley Point and Hunterston to ask site operators and stakeholders about the PSE undertaken and their views on its effectiveness (CoRWM docs. 2802, 2809).

[10] *www.westcumbriamrws.org.uk*
[11] *www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/consultations/consultations.aspx*
[12] *www.nda.gov.uk/stakeholders*
[13] *www.scotland.gov.uk/Topics/Environment/waste-and-pollution/16293/higheractivitywastepolicy*
[14] *https://www.energynpsconsultation.decc.gov.uk/home/events, www.hse.gov.uk/newreactors/stakeholderengagement.htm*

6. IMPACTS OF CoRWM's SCRUTINY AND ADVICE

133. This section of the report sets out the impacts that CoRWM considers its scrutiny and advice has had in 2009-10 on the work of Government, NDA and others. It includes actions taken in response to the recommendations in CoRWM's three 2009 reports to Government (CoRWM docs. 2500, 2543, 2550). It also covers the effects of other CoRWM work on the development and implementation of Government policy on the management of HAW and on promoting understanding of radioactive waste management issues.

Actions taken in Response to CoRWM Recommendations

Recommendations in CoRWM's 2009 Report on Interim Storage

134. The 2009 CoRWM report on interim storage (CoRWM doc. 2500) made four recommendations to Government. The text of these is given in full in Annex D.

135. The first recommendation was about strategic co-ordination of conditioning, packaging and storage of HAW and of management of spent fuels, plutonium and uranic materials. Government accepted this recommendation (DECC *et al.*, 2009) and indicated that it would explore the best means of implementing it and invite CoRWM to comment on its proposals. To date, Government has not put any specific proposals to CoRWM. However, CoRWM has observed that some actions have been taken that may lead to better strategic co-ordination in some areas (paras. 38, 46).

136. The second recommendation was about making appropriate information available to the public about the management of HAW, spent fuels, plutonium and uranic materials. The Government response (DECC *et al.*, 2009) noted the range of information that was already available and that was planned to be made available, and the NDA work in hand on a radioactive waste information management system. CoRWM does not consider that any of the actions taken to date meet the need it identified in its recommendation. It has made its views known to NDA (CoRWM doc. 2792) and to regulators (CoRWM doc. 2811).

137. The third recommendation in the 2009 report on interim storage was about making information available to the public about how the security of storage and transport of radioactive wastes and nuclear materials is assured. In its response (DECC *et al.*, 2009) Government recognised the importance of being open and transparent and stated that work was underway to make existing information more accessible and to raise its profile. This work was subsequently delayed as a result of planned changes to regulatory organisations (para. 51). In the meantime, CoRWM itself has made information available to the public about designing stores to mitigate the consequences of terrorist attacks (para. 52; CoRWM doc. 2740).

138. The fourth recommendation was about co-ordination of PSE between NDA and other UK industry organisations at national, regional and local levels. Government accepted the need for such co-ordination and stated that it would be looking to improve co-ordination wherever possible (DECC *et al.*, 2009). CoRWM has monitored co-ordination

during the year and will report its findings in its position paper on PSE late in 2010 (para. 126).

Recommendations in CoRWM's 2009 Report on Geological Disposal

139. There were five recommendations in CoRWM's 2009 report to Government on geological disposal (CoRWM doc. 2550). The text of these is given in full in Annex D.

140. The first recommendation was about Community Benefits Packages. In its response (DECC & DoENI, 2009) Government reaffirmed the commitment to providing benefits packages given in the 2008 MRWS White Paper (Defra *et al.*, 2008). It stated that it believed that any benefits package must be developed jointly between local communities and Government as discussions about hosting a GDF progressed, and that final agreement on a package would take time, possibly some years (DECC & DoENI, 2009). DECC, as an observer at the meetings of the West Cumbria MRWS Partnership, is helping to take forward the Partnership's workstream on community benefits. Any other area that expressed an interest in entering discussions with Government about hosting a GDF could draw on this work.

141. The second and third recommendations were about the procedure for making a planning application for a GDF. The second recommendation was about the involvement of local stakeholders in the event that a planning application is referred to the Infrastructure Planning Commission (IPC). The third recommendation was about the stages and hold points in planning applications. Government responded positively to both recommendations (DECC & DoENI, 2009).

142. Government stated that public consultation and participation would be at the heart of the planning process, whether or not a planning application was referred to the IPC. It further stated that the advantages and disadvantages of single- and two-stage planning applications would form part of the discussions that Government and NDA would have with potential host communities and that there would be appropriate hold points and associated opportunities for stakeholder engagement (DECC & DoENI, 2009). CoRWM welcomes these commitments which, if translated into actions, would largely meet its recommendations.

143. The fourth recommendation was that Government should ensure that NDA carries out options assessments in which a wide range of geological disposal concepts is considered and that stakeholders are involved in these assessments. The Government response (DECC & DoENI, 2009), a draft RWMD document on optimisation of a GDF (NDA, 2009c) and CoRWM discussions with RWMD (CoRWM docs. 2714, 2776) have shown that RWMD is considering a range of geological disposal concepts at a generic level. However, RWMD does not intend to carry out much of the necessary optimisation work until more is known about potential GDF sites. CoRWM will be following RWMD work closely. It will take a particular interest in whether RWMD is considering a sufficiently wide range of geological disposal concepts for each potential site and whether enough stakeholders are being involved in comparisons of these concepts.

144. The last recommendation in the 2009 report on geological disposal was about the need for NDA to have an integrated process for GDF design, site assessments and safety case development. Government agreed (DECC & DoENI, 2009) that it was essential for NDA to have such an integrated process. CoRWM will be examining documents published by RWMD in 2010, for example the Steps Towards Implementation document and the documents describing the DSSC, to determine the extent to which a suitable process is in place.

Recommendations in CoRWM's 2009 Report on R&D

145. The six recommendations in CoRWM's 2009 report to Government on R&D (CoRWM doc. 2543) are given in full in Annex D. As explained by the DECC Minister of State (para. 94), the scale and breadth of the issues covered in the report have led to a significant delay in producing the Government response (which was due at the end of January 2010). The report was well received by the House of Lords Science and Technology Committee (House of Lords, 2010a). In oral evidence Lord Jenkin of Roding commented, *"...the R&D report contains fairly clear and specific and, it seemed to me, quite wise recommendations".* In his oral evidence, Lord Hunt of Kings Heath (the DECC Minister of State), explaining the delay in Government responding to the R&D report, said *"...an important report like that deserves a lot of work in terms of responding..."*. CoRWM has taken every opportunity to raise its R&D recommendations in meetings with sponsors, NDA and stakeholders and looks forward to action in response to them in due course.

Other Impacts of CoRWM's Scrutiny and Advice

Influence on Development of Government Policy

146. The main policy area in which CoRWM had influence in 2009-10 was that of development of Scottish Government policy on the management of HAW (paras. 53-56). Early scrutiny of the Scottish Government development process led to the advice that the process be slowed down to allow full consideration of the outcomes of the SEA when drafting the policy documents. The Scottish Government accepted this advice and delayed the start of its consultation by several months, so that it began in early 2010, not in autumn 2009 as originally planned. The Scottish Government also took into account a number of CoRWM's comments in preparing its draft policy documents. CoRWM anticipates that the Scottish Government will consider the Committee's response to the consultation (CoRWM doc. 2795) when finalising its HAW policy.

147. Other examples of CoRWM work in 2009-10 that could influence future Government policy are:

- the Committee's response to the DECC consultation on the energy infrastructure NPS (paras. 115-120; CoRWM doc. 2748)
- the Committee's responses to the pre-consultation discussion papers on the long-term management of plutonium (paras. 43-44; CoRWM docs. 2690, 2718).

Influence on the Implementation of Government Policy

148. Examples of where CoRWM's work in 2009-10 influenced the implementation of Government policy related to the management of HAW are as follows.

- CoRWM encouraged Government to increase the awareness of the invitation to communities to express an interest in entering discussions about hosting a GDF (CoRWM doc. 2550). Government carried out a number of actions to do this (para. 65).
- EA, HSE and DfT agreed in principle to set up a Joint Regulatory Office for geological disposal, as advised by CoRWM (CoRWM doc. 2550). As a first step, these regulators have set up joint web pages (para. 125).
- NDA took into account CoRWM advice (CoRWM doc. 2550) in finalising its PSE and communications strategy for geological disposal (NDA, 2009b) and its strategy for sustainability appraisal and environmental assessment (NDA, 2009d).
- CoRWM advised the West Cumbria MRWS Partnership on the peer review of the BGS Geological Sub-Surface Screening Report (paras. 69-75; CoRWM doc. 2711). The Partnership's draft specification for the peer review reflected this advice (West Cumbria MRWS Partnership, 2010b).
- CoRWM advice is being used by NDA in developing its proposed process for identifying sites for desk-based assessment (paras.76-78; CoRWM doc. 2782).

Promoting Understanding of Issues

149. CoRWM considers that several of its activities in 2009-10 have contributed to stakeholder and public understanding of HAW management issues. These activities include:

- the stakeholder event to discuss the draft 2009 report to Government on geological disposal (CoRWM doc. 2593) and the publication of that report (CoRWM doc. 2550)
- the stakeholder event to discuss the draft 2009 report to Government on R&D (CoRWM doc. 2677) and the publication of that report (CoRWM doc. 2543)
- publication of CoRWM's evidence (CoRWM docs. 2756, 2789) to the House of Lords Science and Technology Committee inquiry on radioactive waste management (House of Lords, 2010a)
- holding public meetings at Hunterston (CoRWM doc. 2802) and Hinkley Point (CoRWM doc. 2809).

7. HOUSE OF LORDS INQUIRY

150. In January 2010 the House of Lords Science and Technology Committee launched an inquiry into CoRWM. The purpose of the inquiry was to assess how CoRWM had performed since its reconstitution in 2007, to consider whether CoRWM's remit had proved to be appropriate and to gauge CoRWM's impact on the implementation of the MRWS programme (House of Lords, 2010a).

151. CoRWM submitted written evidence to the inquiry (CoRWM docs. 2756, 2789) and gave oral evidence. The inquiry also received written and oral evidence from DECC and NDA, and written evidence from EA, the Geological Society of London, Greenpeace and the Nuclear Industry Association (House of Lords, 2010a).

152. The report of the inquiry was published in March 2010 (House of Lords, 2010a). It states that:

"The existence of an independent and effective scrutiny body plays an important part in maintaining public trust and confidence in the Government's strategy for radioactive waste disposal. CoRWM must be able to show, therefore, that it is proactively scrutinising Government policy and the NDA's progress in implementing the MRWS programme. In this report, we make a series of recommendations designed to strengthen CoRWM, enabling it to better hold the Government to account on their progress in developing a geological disposal facility. Without on-going external pressure, it is possible that the MRWS programme may not be implemented as rapidly as is needed."

153. Government has stated that it will respond to the report. It would not be appropriate for CoRWM to respond but it will publish its comments on the House of Lords' recommendations (CoRWM doc. 2821).

8. STATUS OF ARRANGEMENTS AND PLANS FOR THE MANAGEMENT OF HAW

Treatment, Packaging, Storage and Disposal

Treatment and Packaging

154. The latest available figures from NDA indicate that about 9% of the total volume of ILW expected to arise from the current nuclear programme has been conditioned and packaged for longer term storage and eventual disposal. For HLW the figure is 48% (NDA, 2009e). If only existing wastes are considered, the figure is about 30% for ILW. There is about 800 cubic metres of highly active liquor in tanks at Sellafield awaiting vitrification (Defra & NDA, 2008).

155. As noted in CoRWM's report to Government on interim storage (CoRWM doc. 2500), some existing ILW is in relatively inert and stable forms and is not a high priority for immobilisation. Other ILW, particularly that in some legacy facilities, is in much less stable forms. It is important that such legacy wastes are retrieved as soon as is practicable. Ideally, these wastes would be conditioned as soon as they had been retrieved, so as to achieve the greatest hazard reduction in the shortest time. However, there are some cases where retrieving the wastes and placing them in a buffer store is likely to be the best option, because it achieves substantial short-term hazard reduction while allowing time to sort and characterise the wastes and to carry out R&D on conditioning methods.

156. CoRWM welcomes NDA statements about the priority being given to retrieving ILW from legacy facilities, especially at Sellafield (NDA, 2010). However, the Committee has

not yet seen any speeding up of retrieval projects or of the rates of conditioning and packaging of ILW in general. At Magnox sites more centralised project management is leading to better use of effort and funds (CoRWM doc. 2809) but does not seem to be speeding up ILW retrieval or conditioning overall. There are indications that some retrieval projects at Sellafield are slowing down (CoRWM doc. 2811). This situation is less than ideal.

Storage

157. CoRWM concluded in its March 2009 report (CoRWM doc. 2500) that:

At all nuclear sites the current plans for storage of higher activity wastes are adequate to meet the CoRWM 2006 recommendation, and the subsequent Government commitment, that there should be arrangements for safe and secure storage for at least 100 years. However, the present UK approach to storage lacks robustness: it is fragmented and too few sites have contingency plans. A more strategic approach is required.

158. As far as CoRWM is aware, this is still the situation. The setting up of the NDA's IPT on interim storage is a welcome development but it appears that it has yet to make any practical impact. Furthermore, it is unclear to CoRWM how NDA intends to tackle strategic issues such as the possible consolidation of HAW storage on fewer sites, and the possible use of shared storage facilities for NDA and British Energy ILW at sites where there are stations owned by both organisations.

Transport

159. There is almost no transport of HAW in the UK at present. This situation could change in the next few years if it is decided to move HAW for treatment, packaging or storage. It will be essential to involve stakeholders and the public in such decisions, including people who live near transport routes, as well as those who live near the dispatching and receiving nuclear sites.

160. Eventually there will be a need to move a large volume of HAW (including any spent fuel, plutonium and uranium that has been declared to be waste) to a GDF (or GDFs). It appears to CoRWM that insufficient attention has been paid to planning for such transport. There is a need to co-ordinate the identification of the current infrastructure that must be maintained for future use and to set out plans for establishing the new infrastructure that will be required.

Disposal

Geological Disposal

161. The rate of progress in implementing geological disposal was raised during the House of Lords Science and Technology Committee's inquiry into radioactive waste management (House of Lords, 2010a). The House of Lords Committee expressed concern that neither the Government nor CoRWM was conveying any sense of urgency.

162. CoRWM's view is that, in general, the implementation of geological disposal is proceeding at an appropriate pace. The process for establishing a GDF is founded on a

voluntary approach and its speed of progress must be determined by the willingness of the potential volunteer community or communities to proceed. Any attempt to try to impose time constraints on deliberations is likely to be counter-productive.

163. It is also important to allow sufficient time for technical work, in particular site characterisation, GDF design and R&D. As the programme progresses, it is possible that scientific and technical developments will allow it to be speeded up in some respects. However, CoRWM considers that there will be a need for long-term underground observations and experiments at any prospective GDF site and that time must be allowed for these (CoRWM doc. 2543).

164. Time is also needed for RWMD to develop into an organisation that can deliver a project of the size, duration and complexity of establishing a GDF. To date, geological disposal has been a science-based concept and there are many challenges in progressing it to an engineering project.

Near-Surface Disposal

165. In the UK, consideration of near-surface disposal as an option for some HAW is at an early stage. NDA has work in hand on the possible near-surface disposal of reactor decommissioning wastes, including R&D on treatment of graphite. However, it is now clear that there are operational wastes for which near-surface disposal could be an appropriate option, *e.g.* ion exchange resins and filters from Sizewell B and new PWRs. The inclusion of near-surface disposal in the Scottish Government policy on HAW may lead to the identification of further wastes that could be disposed of by this method.

166. Near-surface disposal of some ILW has been practised in many other countries for decades and technologies are well-established. The challenges for the UK are likely to be in deciding where to site disposal facilities, including whether there should be facilities that will hold both LLW and ILW. Early stakeholder and public involvement will be essential.

9. 2010-11 WORK PROGRAMME

167. CoRWM submitted its proposed work programme for 2010-13 to Government in March 2010 (CoRWM doc. 2800). Its priorities for scrutiny and advice in 2010-11 are:

- UK Government work to implement its policy on the long-term management of higher activity wastes
- Scottish Government development of its policy on the management of HAW and of proposals for its implementation
- NDA Strategy II
- NDA work on the implementation of geological disposal.

168. The Committee proposed to submit a formal response to the NDA consultation on its Strategy II and to prepare position papers on:

- the development of Scottish Government HAW policy
- BGS screening out of areas in Cumbria unsuitable for geological disposal
- NDA preparations for Stage 4 of the geological disposal facility siting process
- PSE by all organisations involved in the management of HAW.

169. Government approval of the 2010-13 work programme is awaited.

10. REFERENCES

CoRWM Documents

CoRWM doc. no.	*Title*
700	CoRWM Recommendations to Government 2006.
2248	CoRWM's Guiding Principles, January 2008.
2249	CoRWM Publication Scheme and Transparency Policy, January 2008.
2420	Coherence and Coordination of Regulatory Processes, September 2008.
2515.2	CoRWM Work Programme 2009-12, March 2009.
2500	Interim Storage of Higher Activity Wastes and the Management of Spent Fuels, Plutonium and Uranium. CoRWM Report to Government. March 2009.
2539	Quality Control for CoRWM Documents, September 2009.
2543	Report on National Research and Development for Interim Storage and Geological Disposal of Higher Activity Radioactive Wastes and Management of Nuclear Materials. October 2009.
2550	Geological Disposal of Higher Activity Wastes. CoRWM Report to Government. July 2009.
2558	Decision Making and Responsibilities in the Implementation of Geological Disposal, March 2009.
2592	Log of Responses to Consultation on Full Draft of CoRWM's Geological Disposal Report, April-May 2009.
2593	Report of Stakeholder Workshop on Draft Geological Disposal Report, Workington, 15 May 2009.
2624	Meeting with NDA on CoRWM Interim Storage Tasks for 2009-10, Warrington, 11 June 2009.
2630	Log of Responses to Consultation on CoRWM's Report on National Research and Development for Interim Storage and Geological Disposal of Higher Activity Radioactive Wastes and Management of Nuclear Materials. October 2009.
2637	Note on Environment Agency Workshop on Approaches to Assuring the Disposability of Radioactive Waste Packages, Warrington, 14 July 2009.
2664	Meeting with Delegation from Japan, August 2009.
2677	Report of CoRWM 9 September 2009 Stakeholder Workshop on Draft R&D Report.
2690	CoRWM Informal Comments on DECC Pre-Consultation Discussion Paper on the Key Factors that could be used to Compare One Option for Long-Term Plutonium Management with Another. September 2009.

CoRWM doc. no.	*Title*
2707	EA Workshop 29-30 September 2009, Assessing the Characterisation of Geological Environments for Repository Implementation, CoRWM Report, November 2009.
2711	BGS Screening Peer Review: CoRWM Advice to the West Cumbria MRWS Partnership, December 2009.
2714	Geological Disposal: Planning for Implementation. Meeting with NDA, 23 October 2009.
2718	CoRWM Informal Comments on DECC Pre-Consultation Discussion Paper on Decision Methodology and Timetable for Decision Making on Long-Term Plutonium Management. November 2009.
2719	Response from Members of CoRWM to the House of Lords Science and Technology Committee Call for Evidence on Setting Science and Technology Research Funding Priorities, revised November 2009.
2725	Meeting with US Nuclear Waste Technical Review Board, London, 12 November 2009.
2729	Minutes of CoRWM Plenary Meeting, York, 19 November 2009.
2723	Options for the Long-Term Management of the UK's Separated Plutonium: Recent History and the Current Situation. November 2009.
2733	New Build Wastes: Preparation of CoRWM Response to DECC Consultation on Draft National Policy Statement, Draft 4, January 2010.
2734	NuLeAF and the MRWS Process: presentation to CoRWM by Fred Barker, Executive Director of NuLeAF, December 2009.
2740	CoRWM's Understanding of the UK Requirements for the Assessment and Mitigation of the Risks of Aircraft Impact on Stores for Higher Activity Wastes and Spent Fuel. February 2010.
2743	Minutes of Plenary Meeting 16-17 December 2009, London.
2744	West Cumbria MRWS Partnership: presentation to CoRWM by Elaine Woodburn, Leader of Copeland Borough Council, December 2009.
2746	CoRWM Meeting with the Office for Civil Nuclear Security, Harwell, 7 December 2009.
2747	CoRWM Meeting with Regulators' Generic Design Assessment Team, London, 8 December 2009.
2748	Response from the Committee on Radioactive Waste Management to the Government Consultation on the Draft National Policy Statements for Energy Infrastructure, March 2010.
2749	CoRWM's Statement of its Position on New Build Wastes, March 2010.
2750	Brian Clark Letter and Questionnaire on PSE, January 2010.

CoRWM doc. no.	*Title*
2755	Information on New Build Wastes Submitted to CoRWM by Stakeholders, February 2010.
2756	Evidence from the Chair of CoRWM to the House of Lords Science and Technology Committee Call for Evidence on Radioactive Waste Management, January 2010.
2764	CoRWM Meeting with Department for Transport, London, 15 January 2010.
2765	CoRWM Meeting with Westinghouse, Preston, 20 January 2010.
2766	CoRWM Meeting with NDA on R&D, Warrington, 19 January 2010. (in draft)
2767	CoRWM Meeting with EDF and AREVA, London, 22 January 2010.
2770	Minutes of Plenary Meeting 27 January 2010, London.
2771	Quality Control for CoRWM Documents, February 2010.
2776	CoRWM Meeting with NDA on RWMD R&D Programme to Support Geological Disposal, 28 January 2010.
2779	Issues for Plenary Discussion on Scottish Government Higher Activity Waste Policy Consultation Documents, February 2010.
2782	Task Group 4 Meeting with RWMD on Moving from Areas to Sites, 28 January 2010.
2788	Minutes of Plenary Meeting 25 February 2010, Nottingham.
2789	Addendum to Evidence from the Chair of CoRWM to the House of Lords Science and Technology Committee Call for Evidence on Radioactive Waste Management, March 2010.
2790	Notes of the Meeting between the Steering Group of the West Cumbria MRWS Partnership and CoRWM, 23 February 2010.
2792	CoRWM Meeting with NDA on HAW Topic Strategy and Related Matters, Warrington, 1 March 2010.
2793	CoRWM Meeting with NDA to Discuss Topic Strategies for Spent Fuels and Nuclear Materials and Related Matters, Manchester, 3 March 2010.
2795	Response from CoRWM to the Scottish Government Consultation on Scotland's Higher Activity Radioactive Waste Policy, April 2010.
2797	CoRWM Chair's Meeting with NDA Chief Executive Officer, London, 4 March 2010.
2798	Reviewing the Effectiveness of the Committee, April 2010.
2800	CoRWM Proposed Programme of Work 2010-2013, March 2010.
2801	CoRWM Visit to BGS, Keyworth, 24 February 2010.
2802	CoRWM Visit to Hunterston A&B Sites, 9-10 March 2010.
2803	NDA National Stakeholder Meeting, Manchester, 16-18 March 2010.

CoRWM doc. no.	*Title*
2806	CoRWM Procedures for Formulating Advice, March 2010.
2809	CoRWM Visit to Hinkley Point A&B Sites, 9-10 March 2010.
2811	Meeting with NII, EA and SEPA to Discuss Progress by NDA and Others in Developing Strategies for the Management of Higher Activity Wastes, Spent Fuels and Nuclear Materials, Manchester, 26 March 2010.
2821	CoRWM Comments on Recommendations in the 2nd Report of Session 2009-10 by the House of Lords Science and Technology Committee, Radioactive Waste Management: a further update (HL Paper 95), May 2010 (in draft).
2823	Risk and Challenges Associated with Recycling and Waste Disposal: Korean Perspective: presentation by Yongsoo Hwang, Korean Energy Research Institute, September 2009.

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- *Fundamentals*
- *Overview and Glossary*
- *Part 1: The Regulatory Process*
- *Part 2: Radioactive Waste Management Cases*
- *Part 3a: Waste Minimisation, Characterisation and Segregation*
- *Part 3b: Conditioning and Disposability (for trial use and comment)*
- *Part 3c: Storage of Radioactive Waste (for trial use and comment).*
- *Part 3d: Managing Information and Records relating to Radioactive Waste.*

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House of Lords, 2010b. *Setting Priorities for Publicly Funded Research.* House of Lords Science and Technology Committee, 3rd Report of Session 2009-10. HL Paper 104.

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NDA, 2009b. *Geological Disposal: A Public and Stakeholder Engagement and Communications Strategy.* Report NDA/RWMD/015. July 2009.

NDA, 2009c. *Key Aspects of RWMD's Approach to Optimisation of the Geological Disposal Facility*. Draft RWMD document. August 2009.

NDA, 2009d. *Geological Disposal: A Strategy for Sustainability Appraisal and Environmental Assessment*. July 2009.

NDA, 2009e. *Geological Disposal. NDA RWMD Interactions with Waste Packagers on Plans for Packaging Radioactive Wastes April 2008-March 2009.* NDA Report No. NDA/RWMD/012. September 2009.

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ANNEX A CoRWM TERMS OF REFERENCE

Introduction

A1. Following the announcements by UK Government and the devolved administrations (Government), on 25 October 2006, a new Committee on Radioactive Waste Management (CoRWM) will be appointed under these revised terms of reference designed to meet the future needs of the Government's Managing Radioactive Waste Safely (MRWS) programme. The Committee will be jointly appointed by UK Government and relevant devolved administration Ministers. Details of its roles, responsibilities and membership are outlined below.

CoRWM's Role and Responsibilities

A2. The role of the reconstituted Committee on Radioactive Waste Management (CoRWM) will be to provide independent scrutiny and advice to UK Government and devolved administration Ministers on the long-term management, including storage and disposal, of radioactive waste. CoRWM's primary task is to provide independent scrutiny on the Government's and NDA's proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long-term management option for the UK's higher activity wastes.

A3. Sponsoring Ministers (from Defra, DTI and the devolved administrations) will agree a three-year rolling programme and budget for CoRWM's work on an annual basis. Any in-year changes will be the subject of agreement by sponsoring Ministers.

A4. CoRWM will provide appropriate and timely evidence-based advice on Government and Nuclear Decommissioning Authority (NDA) plans for the delivery of a geological disposal facility for higher activity wastes under the Managing Radioactive Waste Safety programme. The work programme may include review of activities including waste packaging options, geological disposal facility delivery programmes and plans, site selection processes and criteria, and the approach to public and stakeholder engagement. Testing the evidence base of the plans for the delivery of a geological disposal facility will be a key component of the work. As well as ongoing dialogue with Government, the implementing body, local authorities and stakeholders, CoRWM will provide an annual report of its work to Government.

A5. CoRWM shall undertake its work in an open and consultative manner. It will engage with stakeholders and it will publish advice (and the underpinning evidence) in a way that is meaningful to the non-expert. It will comply, as will sponsoring departments, with Guidelines on Scientific Analysis in Policy Making as well as other relevant Government advice and guidelines. Government will respond to all substantive advice. Published advice and reports will be made available in respective Parliaments/Assemblies, as will any Government response. CoRWM's Chair will attend Parliamentary / Assembly evidence sessions as and when required.

A6. With the agreement of CoRWM's sponsoring Ministers, other parts of Government, the NDA and the regulatory bodies may request independent advice from CoRWM. Relevant Parliamentary / Assembly Committees may also propose work to sponsoring Ministers, for consideration in the work programme. CoRWM's priority role is set out in paragraph 2

although sponsoring Ministers may also ask the Committee to provide advice on other radioactive waste management issues as necessary.

A7. In delivering its annual work programme, and where there is a common interest, the Committee will liaise with appropriate advisory bodies including Health and Safety Commission advisory bodies, and any advisory bodies established by the environment agencies.

A8. CoRWM shall consist of a Chair and up to fourteen members, one of whom will be appointed by Ministers as Deputy Chair on the recommendation of the Chair. Seats will not be representative of organisation or sectoral interests and the skills and expertise which will need to be available to the Committee will vary depending on the programme of work. For example, the relevant skills may include: radioactive waste management, nuclear science, radiation protection, environmental law, environment issues, social science (including public and stakeholder engagement), geology / geochemistry / hydrogeology, finance / economics, civil engineering / underground construction technology, geological disposal facility performance / safety issues, materials science, environmental impact assessment, local Government, planning, regulatory processes and ethics. Sponsoring Ministers may review the membership of the Committee, and the skills and expertise required.

A9. Appointments will be made following the Office of the Commissioner for Public Appointments (OCPA) code of practice. Initial appointments will be for three years and sponsoring Ministers retain the right to terminate appointments at any time in light of individual members' performance, changes in CoRWM's work requirements, or completion of the work required of CoRWM.

A10. The Committee, as agreed in the annual plans, may co-opt additional expertise to form or support temporary sub-groups set up to examine specific and defined problems.

Programme of work

A11. To support its work, CoRWM will need to familiarise itself with Government policy in this area, including ongoing meetings with relevant Government departments and the NDA. The outline framework within which CoRWM is then expected to work is:

(i) *recognising the policy framework within which it will operate including* the roles and responsibilities of Government and the NDA in relation to CoRWM's own advisory role;

(ii) *scrutinising Government and NDA proposals, plans and programmes* to implement geological disposal and other radioactive waste management issues on which Government might seek advice as agreed in CoRWM's work plan;

(iii) *formulation of advice and reporting to Government* based on the best available evidence and informed by the views of stakeholders and the public.

A12. CoRWM will prepare its draft work programme, within this outline framework, in conjunction with Government, the NDA and regulators, taking account of work by other advisory bodies (see paragraph 7 above). The programme will include details of specific

areas of work, reports which it intends to produce, the proposed use of sub-groups and any other activities or events, including proposals for public and stakeholder engagement. CoRWM will submit its first draft three-year work programme proposal to its sponsoring Ministers for discussion and agreement at an appropriate early stage following appointment of the full Committee. Subsequent three-year work programmes will be agreed annually on a rolling basis.

A13. In familiarising themselves with the relevant background and issues, Members will make themselves aware, and take account, of previous engagement and reports in the Managing Radioactive Waste Safely programme, the UK Radioactive Waste Inventory and the nature of current and expected future UK holdings of plutonium, uranium and spent nuclear fuel. CoRWM will take account of existing technical assessments and research into radioactive waste management in the UK and elsewhere. In particular, it is recognised that CoRWM will need to engage with the NDA given that the Committee's advice will directly impinge on the long-term responsibilities of the NDA. CoRWM will also take account of other relevant policy developments.

A14. The Chair will submit a report to Ministers by 30 June each year on the delivery of the agreed work programme. This will be made available in the UK and Scottish Parliament, the National Assembly for Wales and the Northern Ireland Assembly.

Access to other sources of expertise

A15. Members of CoRWM itself will not have all the skills and expertise necessary to advise Government. The Committee will need to decide how best to secure access to other appropriate sources of expert input during the course of its work. Within this, it will have the option of setting up expert sub-groups containing both Members of CoRWM itself and other appropriate co-opted persons. A member of CoRWM will chair any sub-group of this nature and ensure its effective operation, as well as provide a clear line of responsibility and accountability to the main Committee, and hence to Ministers. This approach will enable the Committee to draw on a broad range of expertise in the UK and elsewhere.

A16. The number of such sub-groups will be kept to the minimum necessary. Their role will be that of providing advice for the main Committee to consider and assess as it sees fit, and managing any activity which CoRWM delegates to them. It will be for the main Committee to assess and decide upon the advice it receives from such sub-groups. CoRWM may also utilise other appropriate means of securing expert input, such as sponsored meetings and seminars. The Chair will ensure that sub-group work and all other activities are closely integrated.

Public and stakeholder engagement

A17. CoRWM must continue to inspire public confidence in the way in which it works. In order to secure such confidence in its advice it will work in an open and transparent manner. Hence, its work should be characterised by:

- a published reporting and transparency policy;
- relevant public and stakeholder engagement as required;
- clear communications including the use of plain English, publishing its advice (and the underpinning evidence) in a way that is meaningful to the non-expert;
- making information accessible;

• encouraging people to ask questions or make their views known and listening to their concerns;
• providing opportunities for people to challenge information, for example by making clear the sources of information and points of view on which the Committee's advice is based;
• holding a number of its meetings in public.

Responsibilities of the committee and its members

A18. CoRWM will have a corporate responsibility to deliver its advice to sponsoring Ministers in accordance with agreed work plans. It will be for Ministers, with appropriate reference to their respective Parliaments and Assembly, to take decisions on the advice it receives and to give directions to the NDA as necessary on any subsequent changes required in the delivery of geological disposal of the UK's solid radioactive waste.

A19. All members will need to be effective team workers, with good analytical skills and good judgement besides a strong interest in the process of decision-making on difficult issues. A number of them will need experience of project management, advising on scientific and technical issues directly relating to radioactive waste management, public and stakeholder engagement, excellent drafting and communication skills, or business experience and knowledge of economics.

A20. The Chair, in addition, will be capable of successfully and objectively leading committee-based projects, grasping complex technical issues, and managing a diverse group effectively and delivering substantial results, presenting progress and outcomes in public. He or she will be a person with appropriate stature and credibility.

Role of the Chair

A21. The Chair will be responsible for supervising the CoRWM work programme and ensuring that the Committee's objectives are achieved. The Chair will be responsible for advising Ministers promptly if he or she anticipates that the Committee will not complete its agreed work programme indicating what remedial action might be taken. He or she will be the main point of contact with the public and the media, in presenting progress and answering questions. The Chair will meet Ministers on appointment, and then at least annually along with other members as appropriate. Notes of these meetings will be published. The Chair will ensure CoRWM submits its annual written report to Ministers, by 30 June of each year. The Chair may be required to present the position of CoRWM to Parliament or Assembly committees and representatives as appropriate. The report will set out, among other things, CoRWM's progress with the agreed work programme, advice deriving from it and costs incurred. Ministers will also appoint a Deputy Chair who can assist the Chair as the latter sees fit.

Role of Members

A22. Members will work, under the Chair's supervision, to the programme agreed with sponsoring Ministers, so as to ensure its satisfactory delivery. Members will have a collective responsibility to ensure achievement of CoRWM's objectives and delivery of its work programme. Individual Members may be appointed by the Chair to undertake specific, active roles, for example chairing sub-groups or in representing CoRWM in meetings with the public, organisations who are contributing to the work, or the media. All members will abide

by CoRWM's Code of Practice and will be subject to individual performance appraisal as laid down by the Cabinet Office guide (see next paragraph).

Standards

A23. CoRWM is set up by, and answerable to Ministers and is funded by the taxpayer. It must therefore comply with the Cabinet Office guide "Public Bodies: a Guide for Departments" (http://www.civilservice.gov.uk/other/agencies/publications/pdf/public_bodies_2006/1_case_assessment.pdf).

A24. These and other relevant procedural requirements will be set out in CoRWM's Code of Practice which Members will agree to, prior to appointment.

Resources

A25. Sponsoring Ministers will provide CoRWM with resources – both staff and financial – to enable it to carry out its agreed programme of work. These will include a secretariat which will help CoRWM carry out its work programme including, at the outset, providing reading material and arranging for any further briefings and visits. The Chair and Members will have a collective responsibility for delivering the work programme within the agreed budget, although the Chair may request sponsoring Ministers for adjustment to this budget should this be considered necessary.

Payments

A26. The Chair and Members will be paid for their work for CoRWM at agreed daily rates. They will also be fully reimbursed for all reasonable travel and subsistence costs incurred during the course of their work.

ANNEX B CoRWM MEMBERS

Robert Pickard (Chair) – is Emeritus Professor of Neurobiology at the University of Cardiff, Visiting Professor at the Royal Agricultural College, Cirencester, and Fellow of the Institute of Biology and the Royal Society of Medicine. Formerly he was Chairman of the Consumers' Association *Which?* and Director-General of the British Nutrition Foundation. For the Department of Health and the Royal Society for the Promotion of Health, Professor Pickard was also Chairman of the national NGO Forum, which facilitated the interface between government policymakers and 104 NGOs working for health improvements. He is an international authority on the biology of honeybees and pioneered the development of solid-state, neural microbiosensors in the UK.

William Lee (Deputy Chair) – is until August 2010 Head of Materials at Imperial College London. He has a Physical Metallurgy BSc from Aston, a DPhil in Radiation Damage Studies from Oxford and has held academic positions in the USA (Case Western Reserve University, Cleveland and Ohio State University) and in the UK, notably at Sheffield University where he was Director of BNFL's University Research Alliance on Waste Immobilisation. He is a member of the International Commission on Glass Technical Committee on Nuclear and Hazardous Waste Vitrification and Chair of the International Ceramic Federation Technical Committee on Ceramics in Nuclear Applications. He is a Fellow of the American Ceramic Society, the City and Guilds Institute and the Institute of Materials.

David Broughton – is a Chartered Engineer and a Member of the Institution of Mechanical Engineers. He has 26 years experience in professional engineering and management of complex nuclear projects. Now retired, he worked at UKAEA Dounreay, Caithness from 1981 until 2007, where he was responsible for Dounreay's major radioactive waste management projects. These included new low level waste disposal facilities, new intermediate level waste encapsulation and storage facilities, the future retrieval of waste from the Dounreay shaft and the shaft isolation project. He is experienced in both engaging stakeholders in projects that have many options and technical issues to consider, and guiding projects through the regulatory and planning processes.

Margaret Burns – is Chair of Health Scotland and a part-time teaching fellow in the Law Department of the University of Aberdeen. She was a member of the Health and Safety Commission for nine years, representing the public interest and the devolved administrations. As a Commissioner she chaired HSC's Rail Industry Advisory Committee and the Partnership for Health and Safety in Scotland and had particular responsibility for the offshore oil industry and the nuclear industry. In 2003 she was awarded the CBE for services to health and safety. She has extensive experience of working with consumer organisations, such as the Scottish Consumer Council and Consumers' Association, and is presently a member of the National Consumer Council's Advisory Group.

Brian D Clark – is Professor of Environmental Management and Planning at Aberdeen University. He is a Board Member of the Scottish Environment Protection Agency (SEPA) and Chairman of the North Region Board and the Planning & Finance Committee of SEPA. He served on the Committee for Radioactive Waste Management from 2003 to 2007. With forty years experience, he is a specialist in environmental impact assessment (EIA), strategic environmental assessment (SEA) and urban and rural planning. He was honoured

in 1987 by being made a founder member of UNEP's Global 500 Award. He is a governor of the Macaulay Land Use Research Institute and was a founder member of the Institute of Environmental Assessment (IEA), now the Institute of Environmental Management and Assessment (IEMA) and chairs its Technical Committee.

Mark Dutton – has a doctorate in high energy physics and a 38 year career based at the National Nuclear Corporation. Specialising in design and safety case issues associated with radiological protection, nuclear safety and radioactive waste management, he continues to work as a nuclear consultant. He served on the Committee for Radioactive Waste Management from 2003-2007. He is a Fellow of the Institution of Nuclear Engineers, co-author of two Safety Guides published by the International Atomic Energy Agency and has reviewed the safety of reactors in Iran and Pakistan on behalf of the Agency. He is a member of the Defence Nuclear Safety Committee of the Ministry of Defence and a member of the Presidential Nuclear Safety Committee of Armenia.

Fergus Gibb – is Emeritus Professor of Petrology & Geochemistry in the Department of Engineering Materials, University of Sheffield. He has over 40 years' teaching and research experience in mineralogy, petrology, geochemistry and other areas of geoscience. A specialist on igneous intrusions, he is a former Vice-President of the Mineralogical Society and an Elected Fellow of the Mineralogical Society of America. A long-standing research interest in the geological disposal of nuclear wastes has led to over 25 papers on the subject and national and international recognition as an authority on deep borehole disposal. On the strength of the potential strategic importance of this research work, Professor Gibb's post at the University of Sheffield was part-funded for a period by the Nuclear Decommissioning Authority but the conduct of the work was, and remains, independent of the NDA and the nuclear industry.

Simon Harley – is Professor of Lower Crustal Processes in the School of Geosciences at the University of Edinburgh. An international expert on the evolution of continental crust, his research integrates geological mapping with experimental and microanalytical studies of the stabilities of minerals and their behaviour at high temperatures and pressures. He has conducted geological mapping projects in diverse and complex basement areas in Australia, India, Norway, Greenland, Scotland and Antarctica. Professor Harley is a Fellow of the Royal Society of Edinburgh and in 2002 was awarded the Imperial Polar Medal in recognition of his contributions to Antarctic Earth Science.

Marion Hill – is an independent consultant with 35 years' experience in standards for and assessments of the radiological impact of the nuclear industry on the public and the environment. She specialises in policies, strategies and standards for the management of radioactive wastes and radioactively contaminated land. Her early career was at the National Radiological Protection Board (now part of the Health Protection Agency), from where she moved into consultancy. Her experience includes national and international work on policy and regulatory topics, and environmental impact assessments for nuclear installations in the UK and overseas. She was a member of the Health and Safety Commission's Nuclear Safety Advisory Committee (NuSAC) from 2006 to 2008, when it was suspended.

Francis Livens – has held a radiochemistry position at the University of Manchester since 1991. He worked for over 25 years in environmental radioactivity and actinide chemistry,

starting his career with the Natural Environment Research Council, where he was involved in the response to the Chernobyl accident. At the University of Manchester, he has worked in many aspects of nuclear fuel cycle research, including effluent treatment, waste immobilisation and actinide chemistry. He was the founding director of the Centre for Radiochemistry Research, established in Manchester in 1999 and is now Research Director of the Dalton Nuclear Institute and Director of the EPSRC-funded, Manchester/Sheffield Nuclear Fission Doctoral Training Centre. He has acted as an advisor to the nuclear industry both in the UK and overseas.

Rebecca Lunn – is a Reader in Civil Engineering at the University of Strathclyde. She has over 15 years of research experience in hydrogeology, with a particular focus on deep flow systems, hydromechanics and the spatial and temporal evolution of rock permeability. Her research experience is multi-disciplinary and she currently collaborates closely with structural geologists, seismologists, mathematicians and, more recently, microbiologists, psychologists and statisticians. Current research interests include: development of computer models to simulate changes in rock permeability over time surrounding geological faults, with a view to improving flow predictions for deep radioactive waste disposal and carbon dioxide sequestration; understanding the relationship between subsurface groundwater flow and earthquakes; and exploring public understanding of uncertain science, such as flood prediction, to inform the regulators' approach to public information and decision making.

Leslie Netherton – has over 30 years local government experience, where he specialised in health and safety, food safety, environmental protection and emergency planning. As Head of Service with Plymouth City Council from 1998-2007 he had responsibility for civil protection, waste management, cemeteries, building control, consumer protection, sustainability and environmental health. As lead Authority officer for the nuclear submarine refitting facility at Devonport Royal Dockyard, he was involved with major planning applications, discharge consent consultations, offsite emergency planning and extensive stakeholder engagement. He is Chair of the Ministry of Defence Advisory Group for its Submarine Dismantling Project and sits on the project Steering Group. He currently runs an environmental health consultancy company and has been an active member of the Chartered Institute of Environmental Health.

John Rennilson – is a Chartered Town Planner and a Chartered Surveyor with over 37 years' experience in local government. He served as County Planning Officer of North Yorkshire County Council (1984-1996) planning and as Director of Planning & Development for Highland Council (1996-2008). His career has involved balancing development needs and environmental issues at a strategic, as well as at a local, level. He has had considerable experience of the energy industry, including development of the Selby Coalfield, coal-fired electricity generation at Drax and Eggborough, and decommissioning Dounreay, as well as renewable electricity generation and transmission issues across the Highlands.

Andrew Sloan – is a chartered engineer, a Fellow of the Institution of Civil Engineers and a Visiting Professor in the Department of Civil Engineering of the University of Strathclyde. He is a director of the specialist consulting engineering firm Donaldson Associates Ltd. He graduated in geology from the University of Edinburgh and has an MSc in Engineering Geology from the University of Leeds. With over 20 years' experience, he is a specialist in geotechnical engineering with particular emphasis on the development of underground

space. He has experience in the management and delivery of technically challenging and complex ground engineering projects in a range of regulated industries. He led the independent technical check of the grouting aspects of the Shaft Isolation Project at Dounreay and has worked on underground engineering projects in North America, Europe, Africa and South East Asia.

Lynda Warren – is Emeritus Professor of Environmental Law at Aberystwyth University and a member of the Royal Commission on Environmental Pollution. She has postgraduate degrees in marine biology and law and has pursued an academic career first in biology and latterly in environmental law. She has over 100 academic publications, including a number on radioactive waste management law and policy. Lynda has 15 years experience of radioactive waste management policy. She was a member of CoRWM from 2003 - 2007 and, before that, a member of the Radioactive Waste Management Advisory Committee (RWMAC), chairing its working group on Dounreay. She is currently a member of SEPA□s Dounreay Particles Advisory Group and an associate of IDM, a consultancy engaged in environmental policy advisory work, mainly in the nuclear sector.

ANNEX C CoRWM EXPENDITURE 2009-10

(to be added)

ANNEX D RECOMMENDATIONS IN CoRWM's 2009 REPORTS TO GOVERNMENT

Recommendations in CoRWM's Report on Interim Storage

The recommendations in CoRWM's March 2009 report to Government on interim storage (CoRWM doc. 2500) are as follows.

Recommendation 1

CoRWM recommends to Government that there should be greater UK-wide strategic co-ordination of:

- the conditioning, packaging and storage of higher activity wastes
- the management of all spent fuels
- the management of plutonium
- the management of uranic materials
- future transport arrangements for radioactive wastes and nuclear materials.

The co-ordination should include agreement on priorities.

Recommendation 2

CoRWM recommends to Government that appropriate information be made publicly available on the management of higher activity wastes, spent fuels, plutonium and uranium. There is a need to summarise, for a variety of readerships, the progress to date, the management options under consideration for the future, and the issues involved in choosing between alternative options. The information should complement that on waste quantities and characteristics given in the various documents about the UK Radioactive Waste Inventory.

Recommendation 3

CoRWM recommends to Government that more information be made available to the public about how the security of the storage and transport of radioactive wastes, spent fuels, plutonium and uranium is assured. The objective should be to give the public more insights into security issues, without compromising security in any way. In deciding what information should be made available, account should be taken of existing and proposed practices in countries with similar security needs to the UK and a strong freedom of information culture (for example, the USA*).*

Recommendation 4

CoRWM recommends to Government that there be more co-ordination of PSE between the NDA and other UK nuclear industry organisations, at national, regional and local levels. The objective should be to ensure that there is sufficient stakeholder participation in decision-making processes for the conditioning, packaging, storage and transport of higher activity wastes, and the management of spent fuels, plutonium and uranium, without incurring "stakeholder fatigue".

Recommendations in CoRWM's Report on Geological Disposal

The recommendations in CoRWM's July 2009 report to Government on geological disposal (CoRWM doc. 2550) are as follows.

Recommendation 1
CoRWM recommends to Government that it begins work now to develop the principles to be used in deriving Community Benefits Packages and the process by which Packages would be agreed. This should include work on providing confidence that, once agreed, such packages will be delivered.

Recommendation 2
CoRWM recommends to Government that it should explain how local stakeholders would have an opportunity to influence the outcome of the planning application process for a GDF if the application is referred to the Infrastructure Planning Commission.

Recommendation 3
CoRWM recommends to Government that the NDA and the Government should discuss with communities, that have expressed an interest, the advantages and disadvantages of single- and two-stage planning applications for underground investigations and construction of a GDF. In particular, the discussions should cover the hold points, that could be subject to conditions attached to approval of a single application, and opportunities for local stakeholder engagement at such hold points.

Recommendation 4
CoRWM recommends to Government that it should ensure that the NDA carries out option assessments in which a wide range of geological disposal concepts is considered. These should include disposal in facilities constructed using various techniques, at depths ranging from about 200m to more than 1km, disposal of all higher activity wastes in a single facility, separate facilities for various types of higher activity wastes, and facilities incorporating different degrees of retrievability. A wide range of stakeholders should be involved in these assessments.

Recommendation 5
CoRWM recommends to Government that it should ensure that the NDA has an integrated process in place for geological disposal facility design, site assessments and safety case development. The process should be described in publicly available documents that have been reviewed by independent experts and the regulators.

Recommendations in CoRWM's Report on R&D
The recommendations in CoRWM's October 2009 report to Government on R&D (CoRWM doc. 2543) are as follows.

Recommendation 1
CoRWM recommends to Government that it ensures that there is strategic co-ordination of UK R&D for the management of higher activity wastes. Such co-ordination is required within the NDA, between the NDA and the rest of the nuclear industry, amongst the Research Councils and between the whole of the nuclear industry, its regulators and the Research Councils.

Recommendation 2
CoRWM recommends to Government that it ensures that the Environment Agency and the Scottish Environment Protection Agency obtain the resources that they need to access and commission the additional independent research required to support them fully in their regulation of the management of higher activity wastes.

Recommendation 3
CoRWM recommends to Government that it assigns to a single organisation the responsibility for providing national leadership and strategic direction for provision of R&D skills relevant to the long-term management of radioactive wastes.

Recommendation 4
CoRWM recommends to Government that it ensures that facilities for research with highly radioactive materials are improved and their capability enhanced so that they can be used for the full spectrum of research relevant to the long-term management of higher activity wastes. These facilities should be accessible to all researchers who need them.

Recommendation 5
CoRWM recommends to Government that an underground research facility be constructed at any site where it is proposed to construct a geological disposal facility.

Recommendation 6
CoRWM recommends to Government that mechanisms are put in place to ensure that a wider range of stakeholders than to date will be involved in establishing R&D requirements for the long-term management of higher activity wastes and that accessible information will be made available to the public about R&D needs, plans and progress.

ANNEX E GLOSSARY AND ACRONYM LIST

Glossary

Active facility	A facility where radioactive materials can be used. [*Such facilities are subject to safety, security and environmental regulation*.]
Advanced Gas-Cooled Reactor (AGR)	A UK designed, gas-cooled reactor with a graphite moderator. [*It uses enriched uranium oxide fuel with steel cladding and graphite sleeves. The primary coolant is carbon dioxide*.]
Applied research	Investigation directed primarily towards a specific practical aim or objective, which can involve using existing knowledge and understanding or acquiring new knowledge.
Basic research	See "Fundamental research".
Benefits Package	See "Community Benefits Package".
Committed waste	Radioactive waste that will arise in future from the operation or decommissioning of existing nuclear facilities. [*As distinct from existing waste, which already exists, and new build waste, which will only arise if new facilities are built.]*
Community Benefits Package	A set of measures to enhance the social and economic well-being of a community that hosts a geological disposal facility, to recognise that the community is performing an essential service to the country.
Community Siting Partnership	A partnership of organisations with interests in the community that has expressed an interest in hosting a geological disposal facility. [*The partnership is expected to involve the host community, the "Decision Making Body" (or Bodies) and "Wider Local Interests". It will work with the Nuclear Decommissioning Authority and other relevant organisations to ensure local concerns are addressed during the geological disposal facility siting process and will advise the Decision Making Body (or Bodies)*.]
Conditioning	Any process used to prepare waste for long-term storage and/or disposal. [*Usually by converting it into a suitable solid form e.g. incorporation in glass (vitrification), encapsulation in cement*.]
Decision Making Body	The Local Authority that will make the decisions for a host community in the geological disposal facility siting process.
Decision to Participate	A decision by a community to participate in the geological disposal facility siting process, without commitment to eventually host a facility.

Desk-based studies	Review, summary, collation or evaluation of existing knowledge, information, facts and research outcomes. *[In the context of the UK geological disposal siting process, assessing the suitability of sites using existing knowledge about the geology, surface environment, communities etc.]*
Development	Progressive, systematic use of knowledge and understanding gained from research directed towards the production or improvement of materials, devices, systems or methods. [*Includes the design and development of processes*.]
Disposal	Emplacement of waste in an appropriate facility without the intention of retrieving it. [*Retrieval may be possible but if intended the appropriate term is "storage"*.]
Disposable	A waste package is disposable if it can be safely removed from a store, transported to a disposal facility and emplaced in that facility, and if it will play its planned role in ensuring the post-closure safety of that facility.
Encapsulation	A process in which radioactive waste is physically enclosed in a material with the aim of preventing radionuclides from escaping. [*For intermediate level waste encapsulation is a type of "conditioning"; the most commonly used encapsulants are types of cement and others include polymers. For spent fuel encapsulation is likely to entail placing the fuel in an inner canister that is then placed in an outer, disposal canister. The canisters could be made of different metals and might be filled with metal*.]
Environmental Permit	A permit issued by the Environment Agency under the Environmental Permitting Regulations. [*When the Environmental Permitting Regulations 2010 come into force, Environmental Permits will replace registrations and authorisations under the Radioactive Substances Act 1993 in England and Wales*.]
Exotic fuel	Term used for any type of nuclear fuel that is not from a commercial nuclear power reactor. [*Mainly fuels from research reactors and nuclear powered submarines*.]
Expression of Interest	A notification to Government by a community that it is interested in entering discussions about involvement in the geological disposal facility siting process, without commitment.
Fundamental research	Original, exploratory investigation involving experimental or theoretical work undertaken primarily to acquire new knowledge and understanding of phenomena and observable facts without necessarily having any immediate application or use in view.

Generic Design Assessment (GDA)	The generic assessment being undertaken by the Health and Safety Executive and the Environment Agency of the suitability of new reactor designs for use in the UK.
Geological disposal	Generally, emplacement in the Earth's crust with no intent to retrieve. Used specifically in the MRWS programme to mean "disposal" of radioactive waste in an underground facility, where the geology (rock structure) provides a barrier against escape of radioactivity and where the depth, taken in the particular geological context, substantially protects the waste from disturbances arising at the surface.
Geological disposal concept	Any variant of geological disposal, including the use of a "mined repository", "deep boreholes" and more than one "geological disposal facility".
Geological disposal facility (GDF)	Any facility used for geological disposal. [*Includes mined repositories, natural caverns, disused man-made caverns or mines, and deep boreholes*.]
Geological disposal facility design	The detailed drawings and specifications that will allow construction of a "geological disposal facility". [*Includes nuclear, civil, mechanical, electrical, materials, chemical, geotechnical and geological engineering aspects*.]
Geological repository	See "mined repository".
Higher activity waste (HAW)	Radioactive waste with activity above the thresholds for low level waste (LLW), *i.e.* above 4 GBq/tonne alpha activity or above 12 GBq/tonne beta gamma activity. [*It is usually also taken to include LLW unsuitable for near-surface disposal.*]
High level waste (HLW)	Radioactive waste in which the temperature may rise significantly as a result of its radioactive content, so that this factor has to be taken into account in the design of waste storage or disposal facilities. [*In practice the term is only used in the UK for the nitric acid solutions arising from reprocessing spent fuels and for the vitrified form of the solutes in these solutions*.]
Historic waste, historical waste	See "legacy waste".
Host community	A community in which a geological disposal facility will be built. [*It is a community in a small geographically well-defined area, such as town or village, and includes the population of that area and the owners of the land*.]

Immobilisation	A conditioning process in which radioactive waste is chemically incorporated into a material with the aim of preventing radionuclides from moving. [“*Vitrification” and incorporation in ceramics are types of immobilisation processes*.]
Interim storage	Storage of radioactive waste prior to implementing a final management step, such as “geological disposal”.
Intermediate level waste (ILW)	Radioactive waste exceeding the upper activity boundaries for “low level waste” (*i.e.* over 4 GBq/tonne alpha activity or 12 GBq/tonne beta gamma activity) but for which its heat output need not be taken into account in the design of storage or disposal facilities.
Legacy facility	A nuclear facility constructed several decades ago where waste has been generated or stored.
Legacy waste	Radioactive waste that arose several decades ago. [*A subset of existing waste; sometimes called “historic waste” or “historical waste”. The term is usually reserved for wastes kept in, or that have arisen in, legacy facilities*.]
Long-term storage	Storage for more than about 100 years.
Low level waste (LLW)	“Radioactive waste” with activity levels that do not exceed 4 GBq/tonne alpha activity or 12 GBq/tonne beta gamma activity. [*Subsets of LLW include “very low level waste” (VLLW) and exempt waste (i.e. “radioactive waste” with activity levels below those in the various Exemption Orders made under the Radioactive Substances Act)*.]
Magnox reactor	A UK designed gas-cooled reactor with a graphite moderator. [*It uses uranium metal fuel with a magnesium alloy cladding*.]
Mined repository	A facility specifically excavated and constructed for the “geological disposal” of radioactive waste. [“*Mined and engineered repository” is a more correct description. Most designs consist of shafts or adits leading to tunnels and vaults*.]
Near-surface disposal	Disposal at or close to the surface of the Earth. [*Includes underground disposal in the Earth’s crust at depths less than a few tens of metres, and emplacement in engineered structures at or just below ground level. Formerly called “shallow land burial” or emplacement in a “near surface repository”*.]

Optimisation	A process of showing that risks have been reduced to a level beyond which, on a balance of factors, no further reduction would be worthwhile. [*The optimisation principle encompasses various principles and concepts used in health and safety regulation, environmental protection and radiological protection (e.g. "as low as reasonably practicable" (ALARP), "best available techniques" (BAT), "as low as reasonably achievable" (ALARA). In the context of radioactive waste management it always implies a need to identify, assess and compare options for achieving an objective or carrying out an operation.*]
Overpack	An additional container for a waste package. [*Usually to make it more suitable for storage, handling, transport or disposal.*]
Package	See "Waste package".
Packaging	Placing waste into a container for long-term storage and/or disposal. [*In most cases this includes conditioning but sometimes waste is simply placed in containers, with or without compaction to reduce its volume.*]
Primary research	The obtaining of knowledge, facts and data that did not previously exist. [*All fundamental and much applied research is primary.*]
Pond	A water-filled structure in which nuclear fuel is stored. [*Usually made of concrete, the water provides cooling and shielding.*]
Pressurised water reactor (PWR)	A nuclear reactor in which water is used as the coolant and moderator. [*The fuel is enriched uranium oxide with "zircaloy" cladding. PWRs operate above atmospheric pressure to prevent the water boiling.*]
Public	People who have no particular interest in, and are not affected by, radioactive waste management. [*CoRWM distinguishes between "stakeholders" and the public.*]

Radioactive waste	Radioactive waste is defined in the Radioactive Substances Act 1993 and the Environmental Permitting (England and Wales) Regulations 2010. In essence it is any substance for which there is no further use and in which artificial radionuclides are present at any level and/or natural radionuclides are present above the levels given in Schedule 1 of the Act and the corresponding schedule in the Regulations. [*Note that spent fuels, plutonium and uranium are not radioactive wastes unless it has been decided that there is no further use for them and they are declared to be wastes. This legal definition of radioactive waste is under review and it is expected that a revised definition will be put in place in 2010-2011.*]
Radioactive waste management	All the activities involved in managing radioactive wastes. [*Includes minimising arisings, all types of treatment (e.g. decontamination, sorting, segregation), "conditioning", "packaging" and "disposal".*]
Raw waste	Waste that has not been conditioned.
Repository	A facility where waste is emplaced for disposal. [*Often used as shorthand for "mined repository", but also used in other contexts, e.g. the UK's Low Level Waste Repository (LLWR).*]
Requesting Parties	The organisations that have requested that their reactor designs be considered in the Generic Design Assessment of new reactors by the Health and Safety Executive and the Environment Agency. [*The current Requesting Parties are Westinghouse and EDF/AREVA.*]
Research	An investigation directed to the discovery of some fact or principle by a course of study or scientific enquiry.
Retrievability	An ability to withdraw wastes from a disposal facility that is achieved by means designed into the facility other than simply reversing waste emplacement. [*See also "reversibility" and "recoverability".*]
Safety assessment	An assessment of whether a nuclear facility or operation is or, if particular actions are taken, will be safe.
Safety case	The complete set of arguments that demonstrates that a nuclear facility or operation is or, if particular actions are taken, will be safe.
Spent fuel	Fuel that has been used in a nuclear reactor and for which there is no further use as fuel.

Stakeholder	A person or organisation who has an interest in or is affected by radioactive waste management. [*In the context of CoRWM's work, stakeholders include waste producers, regulators, non-governmental organisations, local authorities and communities near existing nuclear sites and potential disposal sites*.]
Stakeholder fatigue	A situation in which stakeholders are overwhelmed by communications and consultations on a particular topic, and do not respond to requests for their views.
Storage	Placing wastes or other materials in a facility with the intention of retrieving them at a later date.
Strategy II	The name being given by the Nuclear Decommissioning Authority to its second Strategy. [*The first NDA Strategy was published in 2006. There will be a public consultation on Strategy II in the autumn of 2010 and the final version will be published by early April 2011, after approval by Government*.]
Surface-based investigations	Investigations of a potential geological disposal site that are carried out from the surface, rather than underground. [*For example, seismic investigations and boreholes*.]
Topic Strategy	A strategy developed by the Nuclear Decommissioning Authority for a particular topic within its remit. [*For example, topic strategies are being developed for higher activity wastes and for various types of spent fuels*.]
Treatment	Any process used to make radioactive wastes suitable for the next step in their management. [*Treatment processes include sorting, decontamination, volume reduction and all types of "conditioning"*.]
Underground research facility (URF)	A site or host rock specific underground facility for characterisation and R&D related to "geological disposal".
Vitrification	The process of converting wastes into a glass or glass-like form.
Voluntarism	An approach to siting geological disposal facilities that involves communities voluntarily expressing an interest in holding discussions with Government, then deciding whether to participate any further.
Waste package	A container and all its contents . [*Includes the waste, any encapsulating material, any capping grout, etc*.]

Wider Local Interests	Communities outside the "host community" that have an interest in the development of a geological disposal facility. [*For example, nearby villages, communities on transport routes to the "host community".*]

Acronym List

AGR	advanced gas cooled reactor (A type of reactor with a graphite core, and uranium oxide fuel in steel cladding with a graphite sleeve.)
BGS	British Geological Survey
COI	Central Office of Information (of the UK Government)
CoRWM	Committee on Radioactive Waste Management
COWAM	Community Waste Management (an EU project)
DECC	Department of Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DoENI	Department of the Environment Northern Ireland
DSSC	disposal system safety case (being developed by NDA)
EA	Environment Agency, England and Wales
EDF	Electricité de France
EIA	environmental impact assessment
EPSRC	Engineering and Physical Sciences Research Council
EU	European Union
GDA	Generic Design Assessment (of new nuclear reactors, carried out by the regulators)
GDF	geological disposal facility
GRA	Guidance on Requirements for Authorisation (for disposal of solid radioactive wastes, produced by the environment agencies)
HAW	higher activity waste

HLW	high level waste
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency (a United Nations agency)
ILW	intermediate level waste
IPC	Infrastructure Planning Commission (to be replaced by different fast-track procedure for major projects)
IPT	Integrated Project Team (an NDA team for addressing a particular HAW management issue)
LLW	low level waste
LoC	Letter of Compliance (previously Letter of Comfort)
MoD	Ministry of Defence
MOX	mixed oxide fuel (contains uranium and plutonium oxides)
MRWS	Managing Radioactive Waste Safely (the UK programme for the management of higher activity wastes)
NDA	Nuclear Decommissioning Authority
NDARB	Nuclear Decommissioning Authority Research Board on nuclear decommissioning and waste clean-up
NEA	Nuclear Energy Agency (part of the Organisation for Economic Cooperation and Development)
NERC	Natural Environment Research Council
NGO	non-governmental organisation
NIEA	Northern Ireland Environment Agency
NII	Nuclear Installations Inspectorate (part of HSE)
NNL	National Nuclear Laboratory
NPS	National Policy Statement
NuLeAF	Nuclear Legacy Advisory Forum
NuSAC	Nuclear Safety Advisory Committee (now disbanded, advised HSE)
NWRF	Nuclear Waste Research Forum (a group convened by the NDA)

NWTRB	Nuclear Waste Technical Review Board (in the USA)
OCNS	Office of Civil Nuclear Security (part of HSE)
OECD	Organisation for Economic Cooperation and Development
ONR	Office for Nuclear Regulation (An organisation to be set up within HSE, incorporating NII, OCNS, UKSO, RMTT and TRANSEC. It is expected to be fully operational by April 2011.)
PCM	plutonium contaminated material
PIP	provisional implementation plan (the NDA plan for implementation of geological disposal)
PSE	public and stakeholder engagement
PWR	pressurised water reactor
R&D	research and development
RMTT	Radioactive Materials Transport Team (part of DfT)
RWMAC	Radioactive Waste Management Advisory Committee
RWMD	Radioactive Waste Management Directorate (of NDA)
RWPG	Radioactive Waste Policy Group (a UK Government group)
SDDG	Strategy Development and Delivery Group (for NDA, chaired by DECC)
SEA	strategic environmental assessment
SEPA	Scottish Environment Protection Agency
SLC	site licence company (a company that runs an NDA site, under contract to the NDA, and holds the nuclear site licence)
SSG	Site Stakeholder Group (at NDA sites)
TRU	transuranic (in the USA the term TRU wastes is used for long-lived, actinide-containing ILW, such as PCM)
TRANSEC	Transport Security and Contingencies Directorate (part of DfT)
UKAEA	United Kingdom Atomic Energy Authority (now used only as an acronym, mainly as part of the names of the organisations into which the Authority was split)
UKSO	United Kingdom Safeguards Office (part of HSE)

WAG	Welsh Assembly Government
WIPP	Waste Isolation Pilot Plant (a geological disposal facility in New Mexico, USA)

FURTHER INFORMATION

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