



Committee on Radioactive Waste Management

COMMITTEE ON RADIOACTIVE WASTE MANAGEMENT

PROPOSED PROGRAMME OF WORK 2013-2016

April 2013

INTRODUCTION BY THE CHAIR

I am pleased to present CoRWM's proposed work programme for 2013-16 to sponsor Ministers, the Secretary of State for Energy and Climate Change and Environment Ministers in Scotland, Wales and Northern Ireland.

CoRWM's proposed programme for 2013-16 is outlined in paragraphs 10-15 and the detailed breakdown is in Table 1 of the document.

The programme consists of a 3-year rolling plan and as such, the greatest detail on what we propose to do is given for the first year (2013-14). The plan for 2013-14 shows that CoRWM will, given the current priorities arising from the decisions in Cumbria and Kent, focus most of its time on MRWS issues. However, some time has been allocated to interim storage and stakeholder engagement issues. The plan proposed for 2013-14 also has time allocated to support the Scottish Government's radioactive waste activities. Priorities for the later parts of the plan are less well developed and therefore the activities are only indicative and could change depending upon future developments.

The Committee's membership was refreshed in November 2012. The Committee now has the range of skills and expertise that are needed to cover current and future radioactive waste management challenges. The committee is now in a position to provide expert advice to DECC and our other Sponsoring Departments in relation to the management of radioactive waste. In addition the Committee will continue to provide on-going scrutiny of the MRWS process and current arrangements for interim storage of waste. The Committee will also continue to work closely with the Scottish Government to provide advice on the implementation of its Higher Activity Waste policy.

Laurence G Williams

Professor Laurence Williams

INTRODUCTION

1. This is the first CoRWM work programme since the Committee appointed new members in November 2012. It covers the proposed programme for 2013-14 in detail and identifies the topics that could be addressed in the following two years.
2. This document summarises CoRWM's remit, describes the development of the proposed programme and outlines priorities for 2013-14 with the deliverables.
3. This year due to developments in the Government's MRWS process, CoRWM's sponsors agreed that CoRWM should submit the proposed work programme to Government at the end of April 2013 instead of the usual March deadline. Once the programme has been approved, CoRWM's sub-groups will prepare more detailed work-plans, which are regularly updated and will be available on the CoRWM website.

CORWM'S REMIT

4. The Committee was set up in 2003 as part of Government's Managing Radioactive Waste Safely (MRWS) programme. Its initial remit was to oversee a review of the options for the long-term management of the UK's higher activity radioactive waste (HAW) and to recommend an option (or combination of options) to Government. CoRWM reported in July 2006 (CoRWM doc. 700) and Government responded in October 2006 (Defra *et al.*, 2006), accepting most of CoRWM's recommendations. The Government then began work on the implementation of policy for geological disposal, using a voluntarism and partnership approach, preceded by robust interim storage and accompanied by the necessary research.
5. There was a public consultation in 2007 on a framework for implementing geological disposal (Defra *et al.*, 2007). The consultation was followed in June 2008 by a White Paper (Cm 7386) and an invitation to local communities to express an interest in hosting a geological disposal facility (Defra *et al.*, 2008). In 2007, the Scottish Government decided not to endorse geological disposal (Lochhead, 2007); it subsequently developed its own policy for the management of its HAW, which consists of near-surface, near-site storage and disposal (Scottish Government, 2011).
6. In October 2007, Government reappointed CoRWM under new terms 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 of the Government's and Nuclear Decommissioning Authority's proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as long term management options for the UK's higher activity wastes.*
7. In November 2012, Government refreshed the membership of the committee, with a new Chair and six new members
8. The current membership of CoRWM is given in Annex B.

9. CoRWM's proposed 2013-16 work programme was developed by the Committee in the period January – March 2013. Comments were received from the Nuclear Decommissioning Authority (NDA), the Office for Nuclear Regulation (ONR), the Environment Agency (EA) and the Scottish Environmental Protection Agency (SEPA). After considering the comments received the Committee agreed the final version of its proposed work programme at its April meeting.

PRIORITIES FOR 2012-15

10. CoRWM's proposed priorities for scrutiny and advice in 2013-14 are (percentage of time allocated for 2013-14 is given in parenthesis for each topic area):

To provide advice to DECC on MRWS policy (75%)

- CoRWM will plan its work to provide timely advice to DECC to inform the review of the MRWS process. CoRWM will input as required, into the lessons learned for formulation of any new consultation process relating to the revision of the current MRWS process for England and Wales.

Interim Surface Storage. (5%)

- To review of the current status of interim storage of radioactive waste, spent fuel and other nuclear materials in the UK and the implications for the GDF.

Siting and Stakeholder Engagement (5%)

- To review of siting and stakeholder engagement in the revised MRWS process in relation to the GDF siting process

Repository "safety case" (5%)

Review of the fundamental components of a safety, security and safeguards case for a geological disposal facility (GDF).

Spent Fuel and Plutonium Management (2%)

- Review of current position on spent fuel and plutonium management and the implications for the GDF

Radioactive Waste Management Options (2%)

- Review of radioactive waste classification and the implications for disposal.

Scottish Government 5%

- Review the process for developing a strategy for implementing the Scottish Government Policy for managing higher activity radioactive waste

CoRWM Outreach(1%)

- Delivery of CoRWM policy for engagement with the public and other stakeholders.

CoRWM's engagement strategy

11. In addition to the current priorities in the work programme, CoRWM will review its stakeholder engagement strategy (Doc. 3119) in 2013. CoRWM will continue to engage widely to gather evidence to progress CoRWM's various work streams, and to communicate CoRWM's output to stakeholders via e-bulletins, the CoRWM website, at conferences, and via face-to-face meetings.

TASKS AND DELIVERABLES FOR 2013-16

12. Table 1 shows the description of each proposed task for 2013-16, together with the output and date due, the method of carrying out the task, the task priority and the planned resource allocated for 2013/14.
13. The tasks for 2014-2016 will be reviewed and may change with existing priorities in future year's work programmes.
14. CoRWM will produce a number of deliverables in the form of informal reports for Government. Currently, informal advice is the preferred option due to the need for timely and flexible advice. Unless circumstances do not permit, CoRWM will endeavour to publish all its reports. CoRWM will also produce an Annual Report for 2013-14 for publication in June 2014.

Resources

15. CoRWM has a provisional budget of £375k for 2013/14, and a secretariat provided by DECC.

Table 1. Work programme topics, priorities, time allocation and outputs for 2013-14

Ref.	Source	Task Description	Task output	Method	Sub-group	Target date	Priority	Time Allocation 2013/14
1	CoRWM + DECC	MRWS: Policy review, lessons learned, consultation, revision and implementation of the MRWS programme in England and Wales	Reports on lessons learned from recent events, informal and formal advice on any proposed changes to current policy, scrutiny and advice on the implementation of any revised approach. Informal Advice / Scrutiny	Discussions with key stakeholders, attending meetings, analysis by CoRWM	SG 1 + others	Various to 09/2016	High	75% (2013/14)
1a		MRWS Review Task 1a: Input to DECC lessons learned review including how to make MRWS work in England and Wales.	Report to DECC on CoRWM views on the lessons to be learned from the Events in WC and Shepway Informal advice	Member observations to date	All	05/2013	High	15%
1b		MRWS Review Task 1b: input to DECC formal consultation for the revision to the MRWS process	Report to DECC on the formal consultation process including comment on the proposed questions set Informal advice	Discussions with DECC officials	SG 1	08/2013	High	15%
1c		MRWS Review Task 1c: Input to DECC analysis of responses to formal consultation	Report to DECC giving CoRWM's view on the outcome of the formal consultation. Informal advice / Scrutiny	Review by SG 1 and Committee	SG 1	12/2014	High	20%
1d		MRWS Review Task 1d: Input to DECC on policy changes that may arise from the consultation	Report to DECC on issues as requested by DECC Formal advice	Review by SG 1 and Committee	SG 1	03/2014	High	20%
1e		MRWS Review Task 1e: Analysis of	Report to DECC giving CoRWM	Review By		06/201	High	

		SEA Directive on the MRWS process	views on the application of the SEA in the MRWS process Formal/Informal Advice	SG 1	SG 1	3		5%
1f		MRWS Review Task 1f: Scrutiny of implementation of revised policy. (Detailed tasks will be developed in CoRWM's detailed work plan for (2014/5))	Report to DECC giving the CoRWM views on implementation issues as requested by DECC (or WG) Formal/Informal Advice /Scrutiny	Review by SG 1 and Committee	SG 1	03/2015	High	0%
2	CoRWM	Interim Surface Storage: Review of the current status of interim storage of radioactive waste, spent fuel and other nuclear materials in the UK and the implications for the GDF.	Reports on the implications of recent decisions on current and future plans for the retrieval, treatment, and storage of radioactive waste; the status of current storage and implications for GDF design/decisions. Informal Advice / Scrutiny	Discussions with NDA / EDF / MOD, Review of international experience and analysis by CoRWM	SG 2	Various to 09/2016	High	5% (2013/14)
2a		Interim Storage Task 2a: Review the current status of interim storage of radioactive waste in the UK	Report on the status of current situation in relation to conditioned and unconditioned waste / passive safety / retrievability Informal Advice / Scrutiny	Review of NDA / EDF documents and discussions	SG 2	09/2013	High	5%
2b		Interim Storage Task 2b: Review plans for retrieval of wastes from legacy ponds and silos at Sellafied	Report on the adequacy of plans and implications for future surface storage requirements. Informal Advice / Scrutiny	Review of NDA documents and discussions with NDA / SL	SG 2	12/2014	Medium	0%
2c		Interim Storage Task 2c: Review	Report as required by DECC	Review by		03/201	Medium	

		delivery of NDA radioactive waste plans. (Detailed tasks will be developed in CoRWM's detailed work plan for 2014/5)	and to DECC on issues of raised by CoRWM's scrutiny activities Formal/Informal Advice /Scrutiny	SG 2	SG 2	5		0%
3	CoRWM + DECC	Siting and Stakeholder Engagement: Review of siting and stakeholder engagement in the revised MRWS process in relation to the GDF siting process	Reports on the approach to siting of the GDF and the arrangements and effectiveness of the stakeholder engagements activities. Informal/Formal Advice/ Scrutiny	Discussions with DECC, NDA and key stakeholders, attending meetings	SG 3	Various to 09/2016	High	5% (2013/14)
3a		Siting and Stakeholder Engagement Task 3a: Siting Assessment and Identification: Input to DECC's work on engagement with communities in England on the GDF siting process	Reports to DECC on engagement process as required by any new MRWS policy. Formal/Informal Advice/ Scrutiny	Discussions with DECC and stakeholders.	SG 3	03/2014	High	5%
3b		Siting and Stakeholder Management Task 3b: Review the NDA arrangements for engaging the public / stakeholders in relation to the MRWS programme.	Report on the adequacy of the NDA's arrangements and their implementation. Informal Advice/ Scrutiny	Review of NDA documents and discussions	SG 3	09/2014	High	0%
3c		Siting and Stakeholder Management Task 3c: Input as required to the Welsh Government's	Report to WG on the engagement process issues as requested.	Review of NDA documents	SG 3		Medium	0%

		work on engagement with communities in relation to the MRWS programme.	Formal/Informal Advice/Scrutiny	and discussions				
3d		Siting and Stakeholder Management Task 3d: Review of siting and stakeholder engagement in the revised MRWS process in relation to the GDF siting process. (Detailed tasks will be developed in CoRWM's detailed work plan for 2014/5)	Report as required by DECC and to DECC on issues of raised by CoRWM's scrutiny activities	Review by SG 3	SG3		High	0%
			Formal/Informal Advice/Scrutiny					
4	CoRWM	Repository "Safety Case" (SC): Review of the current knowledge and status of a safety case for a GDF in the UK.	Reports on current understanding of what could be expected to be included in a "Safety Case" for a GDF and the current gaps in knowledge to make such a case.	Review IAEA/NDA/ other international documents /discussions with NDA / Regulators	SG 4	Various to 09/2016	Medium	5% (2013/14)
			Formal/Informal Advice/Scrutiny					
4a		Repository "Safety Case" (SC) Task 4a: Review of the fundamental components of a safety, security and safeguards case for a geological disposal facility (GDF).	Report on what would be expected to be included in a "Safety Case" for a GDF.	Review IAEA/NDA/ international documents Discussions with ONR / EA / international	SG 4	03/2014	Medium	5%

			Informal Advice / Scrutiny	organization s				
4b		Repository SC Task 4b: Review of the status and maturity of the NDA (RWMD) Generic Safety Case with a view identifying gaps with current best practice.	Report on the status of the NDA's generic safety case for the GDF, identifying gaps with best practice is required. Informal Advice / Scrutiny	Review NDA documents / discussions	SG 4	06/2014	Medium	0%
4c		Repository SC Task 4c: Review of the role and importance of the geological barrier, uncertainties in current knowledge and the impact of these uncertainties on the SC, and where relevant the activities that need to be undertaken by RWMD to reduce these uncertainties to an acceptable level.	Report on the role and importance of the geological barrier, gaps in current knowledge and the activities to plug these gaps. Informal Advice / Scrutiny	Review NDA documents/ discussions with RWMD	SG 4	09/2014	Medium	0%
4d		Repository SC Task 4d: Review of the role and importance of engineered barriers to contain radioactive material within a GDF, the current knowledge of the designs and barrier performance, and where relevant further work that needs to be undertaken.	Report on the role and importance of engineered barriers, barrier designs and performance and areas where further work is required. Informal Advice / Scrutiny	Review NDA /international organization documents/ discussions with RWMD/ International organization s	SG 4	09/2014	Medium	0%
4e		Repository SC (Inventory) Task 4e: Review of the relationship between the types of waste destined	Report on the interactions between inventory scope and the GDF SC with comments on	Discussions with RWMD / literature	SG 4	06/2014	Medium	0%

		for the GDF and design, safety case complexity and cost	options. Informal Advice / Scrutiny	survey				
4f		Repository SC (R&D) Task 4f: Review the R&D activities that are necessary to plug the gaps in knowledge identified in tasks (a) – (d), compare what is required by what is currently undertaken or planned. Consider the implications of the “Beddington Review” and the “Nuclear Roadmap” options on geological disposal	Report on the adequacy of current R&D activities to plug the gaps in knowledge that will be necessary to make a SC for a GDF. Informal Advice / Scrutiny	Review NDA/other research program’s	SG 4	03/2015	Medium	0%
4g		Repository SC Task 4g: Review of Site specific safety case	Report on the key features of a site-specific safety case showing relationship between engineered and geological barriers. Scrutiny / Informal advice	Review of NDA / Other documents	SG 4	09/2016	Medium	0%
4h		Repository SC Task 4h: Review of the current knowledge and status of a safety case for a GDF in the UK. (Detailed tasks will be developed in CoRWM’s detailed work plan for 2014/5)	Report as required by DECC and to DECC on issues of raised by CoRWM’s scrutiny activities Formal/Informal Advice /Scrutiny	Review by SG 4	SG 4		Medium	0%
5	CoRWM	Spent Fuel and Pu Management: Review of current position on spent fuel and plutonium management and the implications for the GDF	Reports on the current status and the implications for radioactive waste generation, treatment, conditioning, storage and disposal including in the GDF.	Discussions NDA / DECC /RS/RAEng / EDF/ONR. Review of	SG 5	Various to 09/2016	Medium	2% (2013/14)

			Formal/Informal Scrutiny	Advice/ Int'l experience and analysis				
5a		Spent Fuel and Pu Management: Task 5a Review of the current status of spent fuel and Pu management in the UK including storage, recycling and conditioning for disposal.	Report on the current status and the implications for radioactive waste generation, treatment, conditioning, storage and disposal including in the GDF. Informal Advice / Scrutiny	Meetings / discussions with DECC /NDA/ RS RAEng / Reg's	SG 5	03/2014	Medium	2%
5b		Spent Fuel and Pu Management: Task 5b Review of the NDA proposed options and their implications for geological disposal and the GDF Safety Case.	Report on the NDA proposed strategy and the implications for the GDF size, complexity and safety case. Informal Advice / Scrutiny	Meetings / discussions with DECC /NDA and Regulators	SG 5	06/2014	Medium	0%
5c		Spent Fuel and Pu Management: Task 5c Review spent fuel management activities in relation to open and closed cycle options and the implications for interim storage and for geological disposal.	Report on the implications of the open and closed fuel cycle options for interim storage and geological disposal Formal/Informal Advice/Scrutiny	Monitoring developme't in the EU and USA discussions with NDA and key stakeholders	SG 5	12/2014	Medium	0%
5d		Spent Fuel and Pu Management: Task 5d Review of NDA strategy implications for the GDF in the UK. (Detailed tasks will be developed in CoRWM's detailed work plan for 2014/5)	Report as required by DECC and to DECC on issues of raised by CoRWM's scrutiny activities Formal/Informal Advice /Scrutiny	Review by SG 5	SG 5		Medium	0%

6	CoRWM + DECC	Radioactive Waste Management Options: Review of the classification of radioactive waste and the implications for disposal.	Report on the classification of radioactive waste and the implications for, conditioning, storage and disposal options Formal/Informal Advice/Scrutiny	Discussions with DEC / NDA / Regulators. Review of IAEA /EU documents	SG 6	Various to 09/2016	Medium	2% (2013/14)
6a		Radioactive Waste Management: Task 6a Input as necessary to any review of radioactive waste management options	Report to DECC on the implications of any proposed changes for geological disposal. Formal / informal Advice	Review of NDA strategy /documents / discussions	SG 6	06/2013	Medium	0.5%
6b		Radioactive Waste Management (Inventory): Task 6b Review of the inventory of waste currently destined for the GDF	Report on the implications/ complexity of mixed inventory on the GDF SC. Formal /Informal Advice/Scrutiny	Discussions with NDA / Regulators	SG 6	06/2013	Medium	0.50%
6c		Radioactive Waste Management: Task 6c input to “new approach to radioactive waste data management” project:	Report to NDA on CoRWM comments on the technical robustness / value of the project. Informal Advice / Scrutiny	Review of NDA documents and discussions	SG 6	06/2013	Low	0.25%
6d		Radioactive Waste Management: Task 6d Review of proposed content and presentation of information for the “Website / UKRWI presentation” project	Report on the adequacy of the proposed Website /UKRWI presentation Informal Advice	Review of NDA documents and discussions	SG 6	10/2013	Low	0.25%

6e		Radioactive Waste Management: Task 6e Review of the reference scenario declared by the waste data providers for future arisings that underpins estimates of radioactive waste [and material quantities] in the 2013 UK Inventory	Report on the adequacy of the "Reference Scenario" Formal Advice	Review of NDA documents and discussions	SG 6	05/2013	Low	0.25%
6f		Radioactive Waste Management: Task 6f Review of the outputs from the 2013 UKRWI project and differences from the 2010 UKRWI	Report on the adequacy of the outputs and the understanding of the differences from 2010UKRWI. Informal Advice	Review of NDA documents and discussions	SG 6	10/2013	Low	0.25%
6g		Radioactive Waste Management: Task 6g Review of NDA strategy implications for the GDF in the UK. (Detailed tasks will be developed in CoRWM's detailed work plan for 2014/5)	Report as required by DECC and to DECC on issues of raised by CoRWM's scrutiny activities Formal/Informal Advice /Scrutiny	Review by SG 6	SG 6			0%
7	Sponsor for Scotland	Scottish Government: Review the arrangements for implementing the Scottish Government Policy for managing higher activity radioactive waste	Reports on the progress with the implementation of the SG policy. Formal/Informal Advice/ Scrutiny	Discussions with SG Officials / NDA / EDF	SG 7	Various to 09/2016	Medium	5% (2013)
7a		Scottish Government: Task 7a Input to and review the process for developing a Strategy for	Report to the SG on the adequacy of the proposed strategy and the process	Discussions / meetings with SG,	SG 7	12/2013	Medium	

		implementing the Scottish Government Policy for managing higher activity radioactive waste	undertaken to develop it.	waste producers / licensees				5%
			Formal and Informal Advice					
7b		Scottish Government: Task 7b Monitor the management of higher activity radioactive waste in Scotland (Detailed tasks will be developed in CoRWM's detailed work plan for 2014/5)	Report as required by the SG and to the SG on issues raised by CoRWM's scrutiny activities	Meetings with SG / licensees / waste producers	SG 7		Medium	0%
			Scrutiny / Informal Advice					
8	CoRWM	CoRWM Outreach: Delivery of the CoRWM policy for engagement with the public and stakeholders	Development and delivery of a communication strategy to cover CoRWM interactions with the public and key stakeholders	Secretariat proposal and monitoring			Low	1% (2013)
8a		CoRWM Outreach : Task 8a Update and Maintain the CoRWM Website	Fit for purpose website that is user friendly and current.		Sec		Low	0.5%
8b		CoRWM Outreach: Task 8b Maintain CoRWM profile with the public and key stakeholders, and to contribute to openness and transparency	Deliver lectures / attend public and stakeholder meetings / publish articles		All		low	0.5%

ANNEX B CoRWM MEMBERS

Laurence Williams FEng (Chair) - is the Professor of Nuclear Safety and Regulation at the University of Central Lancashire, a Visiting Professor at King's College London, a Visiting Senior Fellow at the National Nuclear Laboratory, a Member of the Higher Scientific Council of the European Nuclear Society, Chair of the Nuclear Institute Editorial Board for Nuclear Future, a Member of the Defence Nuclear Safety Committee, an external examiner for the Nuclear Department of the Defence Academy, a Member of the Chernobyl International Advisory Group to the European Bank for Reconstruction and Development. Formerly, Laurence was the Chief Engineer and Director for Nuclear Safety, Security and Environment at the Nuclear Decommissioning Authority. He was a Member of the Board of the Health and Safety Executive and Her Majesty's Chief Inspector of Nuclear Installations. As Chairman of the IAEA Commission on Safety Standards he was responsible for overseeing the development of international standards in the areas of nuclear safety, radiation protection, radioactive waste management and the transport of nuclear materials. Laurence is an international authority on nuclear safety and security regulation.

Current term of office ends: **31 October 2016**

William Lee (Deputy Chair) – is Director of the Centre for Nuclear Engineering at Imperial College London and AWE William Penny Fellow. 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 Fellow of the Royal Academy of Engineering and American Ceramic Society, the City and Guilds Institute and the Institute of Materials, Minerals and Mining. He acts as technical expert for the International Atomic Energy Agency.

Current term of office ends: **31 October 2014**

Gregg Butler is Co-Director of Integrated Decision Management Ltd and a Professor of Science in Sustainable Development at the University of Manchester, attached to the Dalton Nuclear Institute. He has a BSc and PhD in metallurgy from Swansea University, and has over 45 years' experience in the nuclear industry, having worked in most parts of the fuel cycle in R&D, planning, commercial, plant operations, plant and site management and director roles. He was a member of the Radioactive Waste management Advisory Committee from 1994 – 2004. Current research interests include the sustainability of nuclear power and its regulation, and effectiveness of decision making methodologies in bringing economics, regulatory outcomes, stakeholder views and values to a robust conclusion.

Current term of office ends: **25 November 2016**

Brian D Clark is Professor of Environmental Management and Planning at Aberdeen University. He was a Board Member of the Scottish Environment Protection Agency (SEPA) and Chairman of the North Region Board and the Planning & Finance Committee of SEPA from 2000 to 2008. He has served on CoRWM since 2003. With forty years of 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 James Hutton Institute, a member of the Scottish Government Local Boundary Commission and a founder member of the Institute of Environmental Assessment (IEA), now the Institute of Environmental Management and Assessment (IEMA).

Current term of office ends: **31 October 2014**

Paul Davis is the owner of EnviroLogic Inc., an environmental and water resources consulting company in Durango, Colorado, USA. He has over 30 years of experience in the geologic disposal of radioactive waste, starting with site characterization of the Waste Isolation Pilot Project (WIPP) for the United States Geological Survey. At Sandia National Laboratories, he participated in and led the development of performance assessment methodologies for geologic repositories in bedded salt, basalt, and volcanic tuff for the US Nuclear Regulatory Commission, specializing in groundwater flow and transport modelling and the quantification and propagation of uncertainty. He also provided technical support for the development of safety standards for high-level waste disposal for the U.S. Environmental Protection Agency and led the WIPP team responsible for the integration of site characterization, research, performance assessment and regulatory compliance. He is currently collaborating with Los Alamos National Laboratories in the quantification of uncertainty in stable isotope analyses and with Moscow State University, Russia in the development of regional groundwater flow models.

Current term of office ends: **25 November 2016**

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.

Current term of office ends: **31 October 2014**

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.

Current term of office ends: **31 October 2014**

Rebecca Lunn is a Professor in Civil Engineering at the University of Strathclyde. She has over 20 years of research experience in hydrogeology, with a particular focus on deep flow systems, hydromechanics and the spatial and temporal evolution of rock permeability. In 2011, she was awarded the Geological Society Aberconway Medal for research of particular relevance within industry. Her research experience is multi-disciplinary and she currently collaborates closely with structural geologists, seismologists, mathematicians, microbiologists, psychologists and statisticians. She leads the multi-partner EPSRC research consortium, 'Biogeochemical Applications in Nuclear Decommissioning and Disposal' (BANDD). 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.

Current term of office ends: **31 October 2014**

Stephen Newson is a Chartered Engineer and Fellow of the Institute of Materials, Minerals and Mining and is currently working as a Mining Consultant on a range of underground projects in the UK and overseas. He has over 40 years of mining experience including operational management, research and development, business planning and the design and construction of large underground excavations. He spent 16 years with British Coal, latterly responsible for the specification and approval of underground tunnel and coalface support systems on a national basis. During this time his was also a UK representative on the European Experts' Committee on tunnelling systems. He has worked for a number of major companies on new mine construction and expansion projects in Australia, Asia, North America and Africa. He has also, as a consultant, previously worked on underground design and planning projects related to the potential disposal of radioactive waste underground.

Current term of office ends: **25 November 2016**

Helen Peters is a Legal Director at Pinsent Masons LLP. She is a solicitor specialising in all aspects of UK, EU and international environmental law and policy with significant experience in nuclear regulation and waste management. Helen is recognised as a leading UK environmental lawyer by Chambers Legal Directory and Legal 500. She is a member of the WNA Licensing and Permitting Task Force and a corporate member of the Nuclear Industries Association. She is also the UK Environmental Law Association regional convenor for the North East and member of the UKELA waste working party. Helen has been engaged in several of the leading nuclear transactions in the UK in recent years, advising on environmental and regulatory matters for public authorities and owners, operators and contractors.

Current term of office ends: **25 November 2016**

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) 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.

Current term of office ends: **31 October 2014**

Lynda Warren is Emeritus Professor of Environmental Law at Aberystwyth University and visiting Professor at Birmingham City University. She is a member of the Board of Natural Resources Wales, which will be taking over the functions of the Environment Agency in Wales from April 2013, and sits on Defra's Science Advisory Council. She was a member of the Royal Commission on Environmental Pollution until its closure in March 2011. 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 over 15 years of experience of radioactive waste management policy. She has been a member of CoRWM since 2003 and, before that, was a member of the Radioactive Waste Management Advisory Committee (RWMAC), chairing its working group on Dounreay. She was on the Board of British Geological Survey until the Board was disbanded in April 2011 and is an associate of IDM, a consultancy engaged in environmental policy advisory work, mainly in the nuclear sector.

Current term of office ends: **25 November 2016**

Janet Wilson is a recognised authority known internationally throughout the nuclear community. Specialities include government policy, national strategy, regulation and advising on sensitive nuclear safety and non-proliferation issues, most recently as Associate Director Energy for Atkins Global. Her breadth of experience and technical knowledge enable her to not only provide strategic support and advise to nuclear clients but also to develop new business opportunities for this international engineering and design consultancy. Immediately before joining the private sector she was Director of Nuclear Assurance for the Nuclear Decommissioning Authority and a Non- Executive Director for the Civil Nuclear Police Authority. Prior to this she held a series of senior management roles in the UK nuclear regulatory body now known as ONR regulating high profile civil and defence facilities, representing the UK internationally in emergency preparedness and regulatory matters and developing UK decommissioning and clean-up policy and regulation. Janet holds a PhD, is a Fellow of the Institution of Mechanical Engineers, is a European Engineer and is a Liveryman of the Worshipful Company of Engineers.

Current term of office ends: **25 November 2016**