



HOUSE OF LORDS

Science and Technology Committee

---

5th Report of Session 2003-04

# Radioactive Waste Management

Report with Evidence

---

Ordered to be printed 9 November and published 10 December 2004

---

Published by the Authority of the House of Lords

*London* : The Stationery Office Limited

£11.00

HL Paper 200

### *Science and Technology Committee*

The Science and Technology Committee is appointed by the House of Lords in each session “to consider science and technology”.

### *Current Membership*

The Members of the Science and Technology Committee in the 2003-04 session are:

Lord Broers (co-opted)  
Baroness Finlay of Llandaff  
Lord Lewis of Newnham  
Lord Mitchell  
Lord Oxburgh (Chairman)  
Lord Paul  
Baroness Perry of Southwark  
Baroness Platt of Writtle  
Baroness Sharp of Guildford  
Lord Soulsby of Swaffham Prior  
Lord Sutherland of Houndwood  
Lord Turnberg  
Baroness Walmsley  
Lord Winston  
Lord Young of Graffham

In addition, Lord Flowers, Lord Jenkin of Roding and Lord Tombs were co-opted specifically for this inquiry. For the declared interests of Members of the Committee with regard to this inquiry, see Appendix 1.

### *Information about the Committee and Publications*

Information about the Science and Technology Committee, including details of current inquiries, can be found on the internet at <http://www.parliament.uk/hlscience/>. Committee publications, including reports, press notices, transcripts of evidence and government responses to reports, can be found at the same address.

Committee reports are published by The Stationery Office by Order of the House.

### *General Information*

General information about the House of Lords and its Committees, including guidance to witnesses, details of current inquiries and forthcoming meetings is on the internet at: [http://www.parliament.uk/about\\_lords/about\\_lords.cfm](http://www.parliament.uk/about_lords/about_lords.cfm).

### *Contacts for the Science and Technology Committee*

All correspondence should be addressed to:  
The Clerk of the Science and Technology Committee  
Committee Office  
House of Lords  
London  
SW1A 0PW

The telephone number for general enquiries is 020 7219 5750.  
The Committee’s email address is [hlscience@parliament.uk](mailto:hlscience@parliament.uk).

## CONTENTS

---

	<i>Page</i>
<b>Abstract</b>	4
<b>Chapter 1: Introduction</b>	5
Summary of conclusions	5
<b>Chapter 2: Background</b>	8
Box 1: Classification of radioactive waste	8
<b>Chapter 3: Establishment of CoRWM</b>	11
<b>Chapter 4: Work of CoRWM</b>	14
Box 2: The Chemicals Stakeholder Forum	16
<b>Chapter 5: Wider Policy Issues</b>	18
<b>Appendix 1: Committee Membership</b>	20
<b>Appendix 2: List of Witnesses</b>	21
<b>Appendix 3: Visit to Ipswich</b>	22
<b>Oral Evidence</b>	
<i>Mr Gordon Mackerron, Chairman, Ms Jenny Watson, Deputy Chairman, and Mr Adam Scott, Secretary, Committee on Radioactive Waste Management</i>	
Oral evidence, 18 October 2004	1
<i>Mr Elliot Morley, MP, Minister for State for Environment, and Mr Chris de Grouchy, Radioactive Substances Division, Department for Environment, Food and Rural Affairs</i>	
Oral evidence, 18 October 2004	9
Supplementary written evidence	17

## **ABSTRACT**

Almost 30 years after the Royal Commission on Environmental Pollution first drew attention to the urgent need to find a long-term solution to the problem of storing radioactive waste, there is still no strategy for dealing with the United Kingdom's high and intermediate level radioactive waste. Surface stores of such waste are already considerable, and continue to increase in volume. In the current climate of uncertainty over global security, there are now serious concerns over their vulnerability to terrorist attack.

In 1997 planning permission for an underground test laboratory near Sellafield was refused. This was regarded as an essential first step before the building of an underground repository for radioactive materials. Since 1997 the Government have procrastinated until earlier this year when the Committee on Radioactive Waste Management (CoRWM) was established.

CoRWM is charged both with finding the best technical solution to the problems of radioactive waste management and with inspiring public confidence in it.

In the light of the numerous authoritative and exhaustive reports that have been published in the United Kingdom and abroad, of current international agreements, and of European Union guidance, we are astonished that the Committee should have been told to set about this task "with a blank sheet of paper". CoRWM could more fruitfully have been instructed to concentrate on the various alternatives for underground repositories that United Kingdom and international opinion have identified as the best options.

We regard it as most unlikely that meaningful public acceptance can be secured for any particular method of managing nuclear waste in the abstract. As the Department's own survey shows the wider public becomes exercised with this topic only when particular sites are up for discussion.

We commend CoRWM for its objectives of openness, transparency and inclusivity. We are, however, concerned at the actual opacity of its open meetings, and the undue emphasis given to investigating methodologies of decision-making and public and stakeholder engagement at the expense of identifying the right scientific and technical solution.

Overall, we find that CoRWM's terms of reference are dauntingly broad and in some respects astonishingly vague. We judge the composition of CoRWM to be inappropriate for offering advice to the Government on the technical aspects of their remit. We were unconvinced by CoRWM's response that they could rely on the peer-reviewed advice of consultants to arrive at the appropriate technical solution. We therefore regard it as essential that CoRWM should have more internal technical expertise and we make suggestions as to how this might be done.

We note that the delay in developing a strategy for handling nuclear waste is seen by the Government as an impediment to considering the role of nuclear power in meeting its objectives of planned reductions in carbon emissions and a secure energy supply. We deplore this and urge the Government to reconsider.

# Radioactive Waste Management

## CHAPTER 1: INTRODUCTION

---

- 1.1. This Report examines recent developments in the United Kingdom Government's radioactive waste management policy. It follows up two earlier Reports by the Committee, on *Management of Nuclear Waste* and on *Managing Radioactive Waste: the Government's consultation*.<sup>1</sup> On this occasion we have focused on the role of the Committee on Radioactive Waste Management (CoRWM), which was appointed by the Government in November 2003.<sup>2</sup> CoRWM has been asked "to oversee a review of options for managing solid radioactive waste in the United Kingdom and to recommend to Ministers the option, or combination of options, that can provide a long-term solution, providing protection for people and the environment."<sup>3</sup>
- 1.2. On 17 September 2004 the Select Committee attended the second day of CoRWM's open meeting in Ipswich. Following the meeting, Mr Gordon MacKerron, Chairman of CoRWM, gave the Select Committee a brief presentation on the work of CoRWM, and answered questions. A note of this meeting is at Appendix 3. On 18 October the Select Committee took formal evidence from Mr MacKerron, along with two colleagues, and separately heard from the Minister of State for the Environment, Mr Elliot Morley MP. The transcripts of these meetings are reprinted in this volume.
- 1.3. The body of this report examines the process by which CoRWM was established and the manner in which it is operating, before putting these matters in the context of wider radioactive waste policy.

### Summary of conclusions

- 1.4. The Select Committee remains deeply concerned at the slow progress towards developing policy in this area. From the evidence we have heard in the course of this short inquiry, and drawing on our previous work, we have reached the following conclusions:

#### *Timing*

1. Since 1997 progress towards finding a long-term solution to the problem of radioactive waste management has been bedevilled by delay. Both Mr MacKerron (Q 3) and Mr Morley (Q 36) assured us that CoRWM will be able to deliver its recommendation to Ministers by July 2006. This timetable must not be allowed to slip, nor must CoRWM's report be followed by further procrastination. (Paragraph 3.4)

---

<sup>1</sup> *Management of Nuclear Waste*, 3rd Report, Session 1998-99 (HL Paper 41); and *Managing Radioactive Waste: the Government's consultation*, 1st Report, Session 2001-02 (HL Paper 36).

<sup>2</sup> *New team appointed to find long term solution for UK nuclear waste*, Defra news release 479/03, 17 November 2003.

<sup>3</sup> CoRWM terms of reference paragraph 1; full terms of reference available from <http://www.corwm.org.uk/content-1>.

### *A “blank sheet of paper”*

2. We are astonished that CoRWM was asked to start from a “blank sheet of paper” when several of the options being considered had already in effect been ruled out by the Government and numerous authoritative bodies. CoRWM must waste no more time considering infeasible strategies. (Paragraph 3.15)

### *Scientific expertise and commissioning scientific work*

3. We cannot understand why Defra’s Chief Scientific Advisor was not directly involved in the formation of a committee that will be providing advice to Ministers on crucial scientific and technical matters. The inadequacies in CoRWM that we have found might well have been recognised at an early stage in its conception if Ministers had involved the Chief Scientific Advisor from the outset. (Paragraph 3.11)

4. There is a danger that, without technical expertise relating to waste management options, CoRWM will be unable to evaluate evidence critically. Total reliance on contractors is unwise. (Paragraph 4.9)

5. We welcome the involvement of the learned societies, including the Royal Society and the Royal Academy of Engineering, in the technical assessment of CoRWM’s work, and in identifying data gaps. (Paragraph 4.4)

6. We urge the Government to consider, without delay, either the appointment of additional members to CoRWM with expertise in earth science, materials or civil engineering, or the establishment of a technical sub-committee to CoRWM comprising several members of the main committee along with a number of experts with experience of relevant technologies. It is not too late for such experts to play an important role in the decision-making process. (Paragraph 4.8)

### *Public and stakeholder engagement*

7. The amount of time and money CoRWM gives to discussing its methodology of engagement and ways of working is disproportionate to the public engagement that is likely to be generated by its work. (Paragraph 4.14)

### *Meetings of CoRWM*

8. Documents submitted to CoRWM should be made available to the public, well in advance of meetings. At the meeting itself, some indexing of papers is essential to enable the public to follow proceedings. The meeting, its room and proceedings, should be accessible to all members of the public as far as is practicable. (Paragraph 4.17)

### *After CoRWM reports*

9. The Government must be clear as to what they expect from CoRWM so that the next stage can follow on promptly. Planning and preparation by Government will be needed regardless of CoRWM’s recommendation. They must not wait until 2006. (Paragraph 5.2)

*The future of nuclear power*

10. The Government must no longer allow delays in developing a long-term radioactive waste management strategy to be used as a pretext for deferring decisions on the future of nuclear power. To do so would seriously narrow the range of options open to the Government in meeting their longer term energy and environmental goals. The small uncertainties associated with radioactive waste disposal that still exist must be balanced against the spectre of global warming: the consequences of not doing enough to limit greenhouse gas emissions may be catastrophic. (Paragraph 5.10)

## CHAPTER 2: BACKGROUND

- 2.1. The scale of the problem may be quantified by reference to CoRWM's own preliminary inventory of the United Kingdom's radioactive waste materials: there are currently 764 m<sup>3</sup> of "high level" waste (see Box 1), with a similar amount expected to arise in the future from the current nuclear programme. This waste is stored above ground, mostly at Sellafield. The total amount of current "intermediate level" waste is 74,500 m<sup>3</sup>, with 162,700 m<sup>3</sup> unavoidably arising in the future from the current nuclear programme. This is also held in surface stores, at various nuclear sites around the United Kingdom. All this waste poses a potential health risk and will continue to do so for many thousands of years. The volume of "low level" waste is much higher, but this is mostly disposed of at a dedicated site at Drigg in Cumbria, and therefore falls outside the remit of CoRWM and this inquiry.

### BOX 1

#### Classification of radioactive waste<sup>4</sup>

For the purposes of the inventory, and for general description, wastes are divided into three categories according to the concentrations of radioactive materials in them and the way they arise: high level, intermediate level and low level.

High Level Waste (HLW), also known as heat-generating waste, consists mainly of concentrated liquid nitric acid product from the reprocessing of spent nuclear fuel. HLW is concentrated by evaporation and stored in double-walled stainless steel tanks encased in thick concrete walls. In addition a small quantity of liquid HLW has been immobilised in glass (vitrified), and by 2015 most of it will be in this form.

Intermediate Level Waste (ILW) consists mainly of metals, with smaller quantities of organic materials, inorganic sludges, cement, graphite, glass and ceramics. ILW mainly arises from the dismantling and reprocessing of spent fuel and from the general operation of nuclear plants. ILW is contained in cement and put inside steel drums, which are then placed in an above-ground concrete store.

Low Level Waste (LLW) includes metals (redundant equipment) and organic materials (laboratory equipment, clothing and paper towels). The organic materials mainly come from hospitals and research establishments. LLW is safely disposed of in containers inside a concrete vault at Drigg, near Sellafield.

- 2.2. The waste is a legacy of decades of military and civil nuclear programmes. The need to develop a policy on long-term storage or disposal of such waste was identified as long ago as 1976 when the Royal Commission on Environmental Pollution published its seminal report.<sup>5</sup> However, the defining moment of recent years came in 1997 when the outgoing Government decided to accept the recommendation of the planning inspector and to uphold Cumbria County Council's refusal to grant Nirex planning

<sup>4</sup> Source: Defra Radioactive Waste Management web pages: <http://www.defra.gov.uk/environment/radioactivity/waste/index.htm>.

<sup>5</sup> *Nuclear Power and the Environment*, Royal Commission on Environmental Pollution Sixth Report (1976).

permission for a Rock Characterisation Facility at Sellafield.<sup>6</sup> This decision effectively “stopped dead in its tracks the search for a long-term disposal route for intermediate level radioactive waste”.<sup>7</sup> In 1999, in the wake of this debacle, this Select Committee published a comprehensive report, *Management of Nuclear Waste*, which analysed the disposal and storage options for radioactive waste, and discussed ways to ensure that any solution was publicly acceptable.

- 2.3. The Government accepted two principal recommendations of the report: first, that there was an urgent need to develop a policy for the permanent storage of the growing amounts of radioactive waste, and second, given public interests and concerns, that the policy should be developed with wide consultation. The report also recommended disposal of radioactive waste in an underground repository as the best long-term solution.
- 2.4. Since 1997, various authoritative reports have been published on this subject, including the report of the Consensus Conference on radioactive waste management in 1999;<sup>8</sup> the report of the House of Commons Environment, Food and Rural Affairs Committee in February 2002;<sup>9</sup> and the report of the Royal Society in May 2002.<sup>10</sup> They broadly support this Committee’s conclusion that underground storage or disposal represents the best long-term solution.
- 2.5. We also commend a recent interdisciplinary study from the Massachusetts Institute of Technology (MIT), *The Future of Nuclear Power*, published in July 2003, which contains a chapter and appendix on radioactive waste management.<sup>11</sup> It points out “that there is today a high level of confidence within the scientific and technical community that the geologic repository approach is capable of safely isolating the waste from the biosphere for as long as it poses significant risks. This view has been stated and supported in several recent national and international assessments”, the references to which we take the opportunity to reproduce here.<sup>12</sup> This is also the view of the European Commission in its proposed Council Directive on the safe management of spent nuclear fuel and radioactive waste, which would

---

<sup>6</sup> A “Rock Characterisation Facility” (essentially an underground laboratory) was required to confirm that the geology of the site, which was planned to be used as an ILW repository, was suitable.

<sup>7</sup> *Radioactive Waste—Where Next?* Parliamentary Office of Science and Technology (POST) Report 106 (1997).

<sup>8</sup> *UK CEED Consensus Conference on Radioactive Waste*, available at [http://www.ukceed.org/consensus\\_conference/contents.htm](http://www.ukceed.org/consensus_conference/contents.htm).

<sup>9</sup> *Radioactive Waste: The Government’s Consultation Process*, 3rd Report, Session 2001-02 (HC Paper 407).

<sup>10</sup> *Developing UK policy for the management of radioactive waste*, The Royal Society, Policy document 12/02, April 2002.

<sup>11</sup> *The Future of Nuclear Power, An Interdisciplinary MIT Study* (2003), ISBN 0-615-12420-8, available at <http://web.mit.edu/nuclearpower/>.

<sup>12</sup> *Scientific and Technical Basis for Geological Disposal of Radioactive Wastes*, International Atomic Energy Agency Technical Report No. 413, Vienna, February 2003; *Disposition of High Level Waste and Spent Nuclear Fuel: The Continuing Societal and Technical Challenges*, National Academy of Sciences Board on Radioactive Waste Management, National Academy Press, Washington, D.C., 2001; *The Environmental and Ethical Basis of Geologic Disposal of Long-lived Radioactive Wastes: A Collective Opinion of the Radioactive Waste Management Committee of the OECD Nuclear Energy Agency*, Nuclear Energy Agency, OECD, Paris, 1995; *Geologic Disposal of Radioactive Waste: Review of Developments in the Last Decade*, Nuclear Energy Agency, OECD, Paris, 1999.

require Member States to study the possibility of giving priority to deep geological disposal for high-level and long-lived waste.<sup>13</sup>

- 2.6. In 2001 the Government launched a consultation paper, *Managing Radioactive Waste Safely*, which asked how the public could be involved in decision taking.<sup>14</sup> It failed to address any of the substantive issues, betraying a preoccupation with process at the expense of content. Our report on the consultation paper argued that it was flawed “by providing insufficient background to enable meaningful responses”.<sup>15</sup> The Government’s response to this consultation was to set up a new independent body, CoRWM, announced in July 2002.<sup>16</sup> The timetable for its programme of work should culminate in a recommendation to ministers in July 2006.

---

<sup>13</sup> Amended proposal for a Council Directive (Euratom) on the safe management of the spent nuclear fuel and radioactive waste, COM(2004)526, 8 September 2004.

<sup>14</sup> Published by Defra, the Scottish Executive, the National Assembly for Wales and the Northern Ireland Department of the Environment under the full title *Managing Radioactive Waste Safely: proposals for developing a policy for managing solid radioactive waste in the UK* (2001).

<sup>15</sup> *Managing Radioactive Waste: the Government’s consultation*, Paragraph 3(a).

<sup>16</sup> *Margaret Beckett announces next steps on managing radioactive waste*, Defra news release 315/02, 29 July 2002.

## CHAPTER 3: ESTABLISHMENT OF CORWM

---

### *Timing*

- 3.1. It is clear from the reports listed above that the science and technology of radioactive waste management have changed little since 1997. The desire of the Government to embark on repeated consultation exercises looks increasingly like an attempt to put off taking a decision.
- 3.2. Much of the Government's *Managing Radioactive Waste Safely* "consultation on a consultation" was unnecessary. Much thought has been given to public and stakeholder engagement (PSE) on high profile technical and scientific matters (including our own *Science and Society* report in 2000).<sup>17</sup> Indeed, several relevant examples of such PSE already exist, including Defra's own Chemicals Stakeholder Forum, on which we comment below. We agree with the Royal Society that "the processes of public consultation are more or less well known and could be readily designed by experienced social scientists working with relevant technical and policy experts."<sup>18</sup>
- 3.3. In 1999 an independent body with strong technical expertise would have been well placed swiftly to review the management options. Government would then have been in a position to set up a body to take forward public and stakeholder engagement in the process of looking at possible sites.
- 3.4. **Since 1997 progress towards finding a long-term solution to the problem of radioactive waste management has been bedevilled by delay. Both Mr MacKerron (Q 3) and Mr Morley (Q 36) assured us that CoRWM will be able to deliver its recommendation to Ministers by July 2006. This timetable must not be allowed to slip, nor must CoRWM's report be followed by further procrastination.**

### *CoRWM's terms of reference*

- 3.5. CoRWM's terms of reference require it to undertake two distinct but related tasks:
  - to propose a technical solution;
  - to inspire public confidence in that solution.
- 3.6. The terms of reference also require CoRWM to review the options "in an open, transparent and inclusive manner." This emphasis is welcome. However, we are sceptical that the public will in reality be interested or engaged by the current process, which will be perceived to be largely theoretical. Indeed, this is backed up by the findings of the Government's own consultation, that most people "will not be interested in the issue of radioactive waste until it affects them directly."<sup>19</sup>
- 3.7. CoRWM is required to arrive at a recommendation which can "inspire public confidence". However, public confidence will largely be won or lost

---

<sup>17</sup> *Science and Society*, 3rd Report, Session 1999-2000 (HL Paper 38).

<sup>18</sup> *Developing UK policy for the management of radioactive waste*, Royal Society Policy document 12/02 (2002), Paragraph 5.3.

<sup>19</sup> *Managing Radioactive Waste Safely, Summary of Responses to the Consultation, September 2001-March 2002* (2002), Paragraph 25.

by the process of site selection which follows CoRWM's work. In the meantime, the requirement that the right scientific and technical solution is found seems to have been given a lower priority than it deserves. Future generations will not forgive a wrong choice made because it was deemed to inspire public confidence.

### *Scientific expertise*

- 3.8. We note that CoRWM's terms of reference specify its composition. Paragraph five states that it will include people with a range of expertise, then lists the skills that Ministers will hope to find included. One of these is "scientific and technical issues such as earth science, materials and their properties, and civil engineering". With the greatest respect to the members of CoRWM, who possess expertise in many areas, we do not feel that these essential skills are adequately represented within CoRWM.
- 3.9. As a result, we have no confidence in the technical ability within CoRWM itself sufficiently to understand the science of some of the disposal options. Whilst CoRWM will receive advice from a number of sources, we do not believe it can even be considered an "intelligent customer" for technical advice without additional expertise. It appears to have been formed with a view to inspiring public confidence in a solution at the expense of finding the best solution.
- 3.10. We asked the Minister in writing whether Defra's Chief Scientific Advisor, or other senior scientific advisors within the Department, were involved in setting up CoRWM, deciding its composition and terms of reference; and if so, how. The Minister replied that the Defra Chief Scientific Advisor "was not directly involved in the setting up of CoRWM, although [he] has been kept informed of its establishment and development of its work."
- 3.11. We cannot understand why Defra's Chief Scientific Advisor was not directly involved in the formation of a committee that will be providing advice to Ministers on crucial scientific and technical matters. The inadequacies in CoRWM that we have found may well have been recognised at an early stage in its conception if Ministers had involved the Chief Scientific Advisor from the outset.**

### *A "blank sheet of paper"*

- 3.12. We are also concerned that CoRWM's terms of reference require it in effect to start from a "blank sheet of paper", as Mr MacKerron put it (Q 5).
- 3.13. The Government's consultation paper summarised the main options (which numbered nine) for long-term management of radioactive wastes.<sup>20</sup> Five of these (disposal at sea, sub-seabed disposal, outer space, subduction zones and ice sheets) were classified as "unacceptable" or having been "ruled out", and the Minister confirmed to us that "disposal at sea is clearly out" (Q 44).<sup>21</sup> One option, partitioning and transmutation, was described as only

---

<sup>20</sup> Appendix 1 of *Managing Radioactive Waste Safely*.

<sup>21</sup> Sub-seabed disposal (referring to disposal in empty offshore oil and gas fields) was ruled out in the consultation document because of the United Kingdom's obligations under the London Convention and OSPAR. However, the MIT study puts forward a variation on this method by proposing further research into disposal in deep boreholes, which may be sited on land or offshore. We believe this should be included in the consideration of any method of underground disposal.

a partial solution. The remaining three were above ground storage, which must now—given heightened security concerns—be seen as unsatisfactory, underground storage and underground disposal.

- 3.14. Starting from underground disposal and storage as the likeliest options, the Government should by now have begun the process of investigating possible sites which could accommodate either. This process, conducted in the open, transparent and inclusive way that CoRWM has been asked to operate, would have brought real public interest and engagement. Instead this vital next stage is being still further delayed.
- 3.15. **We are astonished that CoRWM was asked to start from a “blank sheet of paper” when several of the options being considered had already in effect been ruled out by the Government and numerous authoritative bodies. CoRWM must waste no more time considering infeasible strategies.**

## CHAPTER 4: WORK OF CORWM

---

### *Commissioning scientific work*

- 4.1. We are pleased to see that CoRWM is well supported by Defra, with a six-strong secretariat and external programme management (Q 3). We are concerned, though, that programme managers were not selected by Defra until over six months after CoRWM had begun work.
- 4.2. Mr MacKerron told us that CoRWM had requested an increase in budget from Defra to support further technical and specialist work (Q 9). He felt that the initial budget of £0.5 million was not adequate, but was optimistic that an additional £0.25 million would be forthcoming. In addition, Mr MacKerron told us that CoRWM would draw on the learned societies to review the technical work it is proposing to commission, and as part of its own technical assessment of options (QQ 9, 11).
- 4.3. Mr MacKerron also pointed out that it did not fall within CoRWM's had remit or scope to commission fundamental new scientific work (Q 11). Sufficient scientific understanding of physical processes already exists to allow a decision on radioactive waste management to be made in principle. However, in this context we draw attention to the MIT study *The Future of Nuclear Power*, which recommends that further research be commissioned on potential improvements or alternatives to the current mainstream mined repositories approach to geological disposal.<sup>22</sup>
- 4.4. **We welcome the involvement of the learned societies, including the Royal Society and the Royal Academy of Engineering, in the technical assessment of CoRWM's work, and in identifying data gaps.**
- 4.5. The complex methodology employed by CoRWM, and the lack of sufficient in-house technical expertise, has necessitated the appointment, as noted above, of an external consultant (NNC) as the programme manager. NNC describes itself on its website as the United Kingdom's "premier dedicated nuclear services company and is committed to delivering cost-effective engineering solutions and safety consultancy services throughout the life cycle of nuclear plants."<sup>23</sup> Amongst many other activities, NNC operates a laboratory measuring radioactivity in low-level waste on behalf of the Environment Agency.
- 4.6. NNC, as the programme manager, is outside the formal decision-making line of responsibility, yet as we witnessed, it is on hand at meetings to advise the Committee on technical issues (Q 13). We pressed Mr MacKerron on this matter. He assured us that his Committee would make full use of a range of consultants both to commission work and to help evaluate the results. He told us of his eagerness to ensure that technical work was commissioned from sources other than NNC. CoRWM would also use independent review by the learned societies as indicated above. But given the limited capability within the United Kingdom on these matters, we suspect that in practice NNC may be in a very strong position to bid for the work CoRWM commissions, as well as for that which will arise subsequently as a result of

---

<sup>22</sup> *The Future of Nuclear Power*, pp. 86-87.

<sup>23</sup> See <http://www.nnc.co.uk/>.

CoRWM's recommendations. We do not question the integrity of either CoRWM or NNC, but there is clearly the potential for a conflict of interests, and a lack of clarity in lines of responsibility.

- 4.7. As Mr MacKerron stated, CoRWM will take full ownership of its recommendations (Q 6), and it is therefore essential that it should possess its own technical expertise so as to be able to evaluate critically any advice received, whether from the programme manager or from other sources. Do the Government really intend to make important national decisions on a technical matter with far reaching consequences, on the advice of a committee that has such heavy dependence on commercially provided external advice?
- 4.8. **We urge the Government to consider, without delay, either the appointment of additional members to CoRWM with expertise in earth science, materials or civil engineering, or the establishment of a technical sub-committee to CoRWM comprising several members of the main committee along with a number of experts with experience of relevant technologies. It is not too late for such experts to play an important role in the decision-making process.**
- 4.9. **There is a danger that, without technical expertise relating to waste management options, CoRWM will be unable to evaluate evidence critically. Total reliance on contractors is unwise.**

*Public and stakeholder engagement*

- 4.10. When members of the Select Committee visited the second day of CoRWM's open meeting in Ipswich, we were dismayed at the length of time given over to discussion of methodology. At times it felt as though CoRWM was engaged in a philosophical exercise in theoretical decision making. In particular, much effort is being devoted to a Principles Working Group, whose aim is "to define the principles—such as transparency and fairness—to which CoRWM should work", discussing "roles, responsibilities and values in decision making." The discussion of a hypothetical situation "where a majority hold a view that a minority cannot subscribe to, and where they are also unable to agree to disagree" could be taken as a satire on bureaucratic processes in general.<sup>24</sup>
- 4.11. Whilst we recognise that thought must be given as to how CoRWM will engage with the public and take decisions, the amount of discussion given over to these issues seems disproportionate. As Mr MacKerron (Q 21) and Mr Morley (Q 60) admitted, there are similarities between what CoRWM is undertaking, and the work of others, yet, in methodology as in substance, once again CoRWM seems to be starting from a blank sheet of paper.
- 4.12. Defra's own Chemicals Stakeholder Forum (Box 2) and Agricultural Environment and Biotechnology Commission (Q 60) are well established models for public engagement in decision making. We can also point to the work of the Human Genetics Commission, which has in its remit to advise ministers and gain public confidence, and which has a Public Involvement Strategy.

---

<sup>24</sup> Paragraph 2 of CoRWM paper 578.

## BOX 2

### The Chemicals Stakeholder Forum<sup>25</sup>

The Chemicals Stakeholder Forum (CSF) advises the Government on how industry should reduce the risks from hazardous chemicals to the environment and to human health through the environment. The CSF has 19 members drawn from industry, environmental and animal protection and conservation organisations, trade unions, consumer groups and the scientific community.

The Forum has access to high quality scientific, technical, economic and other guidance. This covers a range of environmental, health and other issues which fall within the responsibility of many Government departments. One of the sources of such guidance is the Advisory Committee on Hazardous Substances (ACHS) comprising ten scientists, drawn from both private-sector industries and public-sector non-governmental organisations. The ACHS is politically independent, and provides objective, impartial advice from a purely scientific perspective. The Committee has retained its role of advising the government directly where appropriate.

4.13. We await CoRWM's plans for continued PSE with interest. As we noted in our report *Science and Society*, public dialogue techniques fall into two kinds:

- Market research exercises, designed to improve policy-makers' understanding of the attitudes and values of the public by engaging with a more or less representative sample;
- Public consultation exercises, designed to engage directly with as many as possible of the public at large.

These two possible purposes are not mutually exclusive. However, while CoRWM's objective is to engage the public as a whole, the techniques that are currently being employed appear to consist more of market research, using representative samples. There is a danger that the two kinds of dialogue are being confused.

4.14. **The amount of time and money CoRWM gives to discussing its methodology of engagement and ways of working is disproportionate to the public engagement that is likely to be generated by its work.**

#### *Meetings of CoRWM*

4.15. When members of the Select Committee attended CoRWM's meeting in Ipswich, we were also astonished at the volume of impenetrable paperwork that was on offer to members of the public. We understand that the open meetings are not part of the public or stakeholder engagement process (Q 19), but if meetings are to be open they should at least be intelligible. Furthermore, Ipswich Town Hall had no wheelchair access, and had acoustics such that even members of CoRWM found it hard to hear each other. There is no point holding a meeting in public if the public cannot hear or understand what is going on.

<sup>25</sup> Source: Defra's Chemicals web pages on the CSF (<http://www.defra.gov.uk/environment/chemicals/csf>) and ACHS (<http://www.defra.gov.uk/environment/chemicals/achs>).

- 4.16. In contrast the Food Standards Agency Board, which also embraces openness by meeting in public, makes all relevant papers comprehensible and available on its website well in advance.
- 4.17. **Documents submitted to CoRWM should be made available to the public, well in advance of meetings. At the meeting itself, some indexing of papers is essential to enable the public to follow proceedings. The meeting, its room and proceedings, should be accessible to all members of the public as far as is practicable.**

## CHAPTER 5: WIDER POLICY ISSUES

---

### *After CoRWM reports*

- 5.1. As we have noted, public interest will become much more intense when potential locations for the chosen storage or disposal method are investigated. However, CoRWM's terms of reference are somewhat vague as to its role at this critical stage: "the assessment of options will not consider potential radioactive waste sites; but it will raise siting issues ... CoRWM will need to consider these issues, and *may want to make recommendations* to Ministers on them" (our emphasis). We are dismayed by this vagueness which seems a recipe for yet further delay. CoRWM must not be left to decide whether to produce a second report on implementation issues (Q 67). When asked about post-CoRWM timescales, the Minister answered simply "I think you will have to wait for the report in July 2006" (Q 66). This is unacceptable. There is no reason to wait until 2006: scenarios for post-CoRWM work and processes should be explored now and over the coming two years.
- 5.2. **The Government must be clear as to what they expect from CoRWM so that the next stage can follow on promptly. Planning and preparation by Government will be needed regardless of CoRWM's recommendation. They must not wait until 2006.**
- 5.3. Looking at the longer term, it is clear from the work done by MIT that the United Kingdom is dragging its feet compared to other countries, though we were pleased that the Minister was able to correct their report that a decision on disposal plans in the United Kingdom would be delayed until 2040 (Q 52).<sup>26</sup>

### *The future of nuclear power*

- 5.4. In recent years, the threat of climate change has become more quantifiable. The best available scientific evidence finds that the observed global warming over the last 50 years is due to increases in greenhouse gas concentrations as a result of human activities.<sup>27</sup>
- 5.5. The Government have set a target of reducing carbon dioxide emissions in the United Kingdom by 60 per cent by 2050. The role that nuclear power can play in this respect is widely recognised, and is becoming a matter of increasingly urgent public debate. With the proportion of electricity generated by nuclear projected to drop from 24 per cent to 7 per cent over the next 15 years, the United Kingdom will become more and more reliant on imported gas, which raises serious questions regarding the security of supply.<sup>28</sup> As we stated in our recent report *Renewable Energy: Practicalities*, we do not believe that renewables will contribute as much as the Government expect to the United Kingdom's electricity needs.<sup>29</sup>

---

<sup>26</sup> *The Future of Nuclear Power*, Table A-7.A.1.

<sup>27</sup> *Climate Change 2001: Synthesis Report*, Intergovernmental Panel on Climate Change Third Assessment Report, Question 9.

<sup>28</sup> *Updated UK Energy Projections*, DTI Working Paper May 2004.

<sup>29</sup> *Renewable Energy: Practicalities*, 4th Report Session 2003-04 (HL Paper 126).

- 5.6. The RCEP concluded in 1976: “There should be no commitment to a large programme of nuclear fission power until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived highly radioactive waste for the indefinite future.”<sup>30</sup>
- 5.7. For retrievable storage we believe that this condition has now been substantially satisfied. In the decades since RCEP reported, technology has progressed and there has been much research into disposal techniques. New methods of handling high-level waste by vitrification (locking waste into a glass-like substance) have been developed, and as noted earlier, there is overwhelming scientific consensus that underground disposal is “capable of safely isolating the waste from the biosphere for as long as it poses significant risks”.<sup>31</sup>
- 5.8. The lead time for constructing new nuclear power stations could be more than a decade. It is therefore alarming, particularly given the lack of urgency shown by the Government, that resolving the long-term issue of nuclear waste is still being presented, in Mr Morley’s words as “a prerequisite in terms of deciding whether or not future nuclear power is viable” (Q 80). We disagree, although it is clearly desirable that there should at least be a plan for the long-term management of waste as a preliminary to new build.<sup>32</sup>
- 5.9. We neither endorse nor reject the concept of new nuclear build, but it should be recognised that modern reactors produce significantly lower waste volumes than the present generation of United Kingdom installations. A new nuclear programme would therefore add relatively low amounts of radioactive waste to that which already exists or will exist with the decommissioning of current nuclear plant. Whether or not there is a new nuclear programme, a long-term strategy for dealing with radioactive waste is essential and will have to be implemented.
- 5.10. **The Government must no longer allow delays in developing a long-term radioactive waste management strategy to be used as a pretext for deferring decisions on the future of nuclear power. To do so would seriously narrow the range of options open to the Government in meeting their longer term energy and environmental goals. The small uncertainties associated with radioactive waste disposal that still exist must be balanced against the spectre of global warming: the consequences of not doing enough to limit greenhouse gas emissions may be catastrophic.**

---

<sup>30</sup> *Nuclear Power and the Environment*.

<sup>31</sup> See the MIT study, *The Future of Nuclear Power*, p. 54.

<sup>32</sup> *Management of Nuclear Waste*, Paragraph 2.26.

## APPENDIX 1: COMMITTEE MEMBERSHIP

---

The members of the committee which conducted this inquiry were:

- \* Lord Broers  
Baroness Finlay of Llandaff
- † Lord Flowers
- † Lord Jenkin of Roding  
Lord Lewis of Newnham  
Lord Mitchell  
Lord Oxburgh (Chairman)  
Lord Paul  
Baroness Perry of Southwark  
Baroness Platt of Writtle  
Baroness Sharp of Guilford  
Lord Soulsby of Swaffham Prior  
Lord Sutherland of Houndwood  
Lord Turnberg
- † Lord Tombs  
Baroness Walmsley  
Lord Winston  
Lord Young of Graffham

\* Co-opted member

† Co-opted members for this inquiry only

### Declarations of Interest:

Baroness Finlay of Llandaff

*Employed at the Velindre NHS Trust, and has undertaken a review of strontium in the management of bone metastases*

Lord Flowers

*Member, United Kingdom Atomic Energy Authority 1970-80  
Chairman, Royal Commission on Environmental Pollution 1973-76*

Lord Jenkin of Roding

*Chairman, Foundation for Science and Technology  
Member, Supporters of Nuclear Energy (SONE)*

Lord Lewis of Newnham

*Chairman, Onyx Environmental Advisory Board*

Baroness Sharp of Guildford

*Visiting Fellow, Science Policy Research Unit, University of Sussex*

Lord Tombs

*Honorary Member, British Nuclear Energy Society  
Chairman, South of Scotland Electricity Board  
Chairman, Electricity Council 1977-80*

## **APPENDIX 2: LIST OF WITNESSES**

---

The following witnesses gave oral evidence:

*Department for Environment, Food and Rural Affairs*

Mr Elliot Morley, MP

Mr Chris de Grouchy

*Committee on Radioactive Waste Management*

Mr Gordon MacKerron

Mr Adam Scott

Ms Jenny Watson

### APPENDIX 3: VISIT TO IPSWICH

---

17 September 2004

The visiting party consisted of Lord Broers, Lord Flowers, Lord Jenkin of Roding, Lord Lewis of Newnham, Lord Paul, Baroness Perry of Southwark, Baroness Platt of Writtle, Lord Tombs (acting as Chairman) and Baroness Walmsley.

In the morning the Committee attended a public meeting of the Committee on Radioactive Waste Management. This was followed by an informal lunch. In the afternoon the Chairman of CoRWM, Gordon McKerron, made a short presentation, and then invited Members of the Committee to ask questions.

On **public engagement**, Mr McKerron commented that it was easy to learn the views of stakeholders, but engaging with the public was much more difficult. The problem was to elicit views that were representative. Jenny Watson elaborated on some of CoRWM's techniques. Some relied on the public to act to make their views known. Others were more deliberative and educational, and involved CoRWM selecting panels and focus groups. The Committee sought the widest possible media coverage, and hoped it would be possible to overcome public cynicism.

It was argued that there was a difference between "public engagement" and market research. The methods currently being used were essentially the latter, relying on tiny "representative" samples. Gauging the views of the public was a more difficult and time-consuming process. In response, Mr McKerron noted that while mass engagement was likely to produce a quick response, smaller groups could engage in a longer, more educational process, showing how views could change over time.

Professor Blowers noted that public confidence was essential, in order to provide political legitimation for the Committee's final recommendations. But there was a further question of representativeness. Future generations also had an interest, which should in some way be "represented". The non-human environment was also concerned. Ms Watson noted that research showed many members of the public would be satisfied that their views had been represented as long as there was full involvement of NGOs.

Pete Wilkinson commented on the involvement of young people. Following an initiative by Bedfordshire County Council with regard to waste management, the Committee was looking for ways to solicit the views of school pupils. In addition, the Committee's work was being featured as part of the national curriculum. In response to a suggestion that CoRWM might look at holding meetings at universities, Ms Watson commented that the Committee would seek to use universities in the later stages of its consultation. In the meantime meetings were publicised in universities.

With regard to the media, Mr McKerron noted that the Committee had media advisers to assist in handling media portrayals of its work. One of the benefits of the deliberative approach to public engagement would be to encourage participants to go beyond immediate responses to media reports. It was essential that the right material should be made available, and the Committee was using expert assistance in preparing such material.

It was pointed out that if CoRWM wished to ensure the accessibility of its proceedings, it should seek to hold meetings in more accessible locations, with

better acoustics, and that its members should refrain from using obscure language during public meetings. Mr McKerron agreed that Ipswich Town Hall was not an ideal location, but pointed out that the Committee had a limited budget, and that Town Halls were both cheap and familiar to local residents. In future the Committee would seek to hold meetings in more accessible locations.

On **peer review**, Mr McKerron said that CoRWM was keen to secure as much diversity as possible among reviewers, at the same time as seeking to ensure that the process was conclusive and limited in scope.

On **timing**, he said that the proposed timetable was very ambitious. CoRWM had been given less than three years to complete its work, and was looking to accelerate earlier phases so as to complete the final phases on time. However, the members of the Committee, though paid, were part-timers, so it would not be easy.



# Minutes of Evidence

TAKEN BEFORE THE SCIENCE AND TECHNOLOGY SELECT COMMITTEE  
MONDAY 18 OCTOBER 2004

---

Present	Flowers, L	Platt of Writtle, B
	Jenkin of Roding, L	Sharp of Guildford, B
	Mitchell, L	Tombs, L
	Oxburgh, L (Chairman)	Walmsley, B
	Perry of Southwark, B	Young of Graffham, L

---

## Examination of Witnesses

Witnesses: MR GORDON MACKERRON, Chairman, MS JENNY WATSON, Deputy Chairman, and MR ADAM SCOTT, Secretary, Committee on Radioactive Waste Management, examined.

---

**Q1 Chairman:** Good afternoon and welcome, everyone, to this session concerning the Committee on Radioactive Waste Management. Would our witnesses introduce themselves in turn for the record, please.

*Mr MacKerron:* I am Gordon MacKerron and I am the Chair of CoRWM.

*Ms Watson:* I am Jenny Watson and I am the Deputy Chair of CoRWM.

*Mr Scott:* I am Adam Scott from Defra and of the Secretariat of CoRWM.

**Q2 Chairman:** Could you each give a little background, please.

*Mr MacKerron:* I am an economist by training and have had an interest in the nuclear industry for, I guess, something over 20 years. I was originally a member of CoRWM but I did apply for the Chair's job and, when our first Chair resigned after about a month, I was asked to take over the job and was happy to do so.

*Ms Watson:* I have been a campaigner for freedom of information and I was formally the Chair of Nirex's Independent Transparency Review Panel, again as a campaigner for freedom of information. In my other life, I am also Deputy Chair of the Equal Opportunities Commission.

*Mr Scott:* I am a career civil servant. I was responsible for radioactive waste policy up to when CoRWM was set up. I was then slightly redundant, so we were posted to become the secretariat of CoRWM.

**Q3 Chairman:** I will ask members of our Committee who will be asking questions this afternoon to declare any relevant interests that they may have before they begin their questioning. If I may, I will begin. I note that CoRWM has been told by ministers to complete its work by 2006. Given this pressure, first of all is it

feasible, and are there sufficient resources available for the Committee to do this?

*Mr MacKerron:* It is feasible. It is a tight programme. We originally requested until November 2006. Ministers were very keen that we should report earlier than that and we are happy to comply. In order to try and make the process more achievable, we have actually brought forward the process of short listing among our options and we have reduced the number of phases of our programme from five to four and, although we are having to work very hard at it, I am confident that we can deliver by July 2006 and we have been on time so far in completing our first phase by the end of September. In terms of the resources, we have, with Adam's leadership, a team of six people that Defra have provided for us as a secretariat which I think is a more generous resource than bodies of this kind often get and, although it was delayed, we have now had appointed NNC Limited as our programme manager, a very competent company with a lot of relevant experience, and we have had a lot of practical support as well, not only from Defra but also from the devolved administrations, especially the Scottish Executive. So, I think that, in general, we have felt extremely well supported by Defra and the other relevant parties.

**Q4 Chairman:** Do you in fact have a timetable, a clearly defined timetable? You said that you were up to date so far, so I presume that you have.

*Mr MacKerron:* Yes, we have a very clearly defined timetable which becomes slightly more tentative the further forward in our process you go. We have a phase one report which has been on our website I think only for a very few days. One of the features of the phase one report is that it sets out in great detail for the next few months, that is until June next year, our next round of activities and then sets out in less detail the timetable that will take us through to

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

completion by July 2006 and of course the members of the Committee are very welcome to see that and we can arrange for you to see it as early as you might wish.

**Q5 Lord Flowers:** Mr MacKerron, after many authoritative and exhaustive studies, the international scientific consensus overwhelmingly favours some form of deep disposal in underground repositories. Therefore, was it necessary for CoRWM to start off considering all conceivable disposal options including deep-sea disposal which is contrary to the law of the sea and space disposal which is manifestly risky in view of the number of failures there have been in space?

*Mr MacKerron:* I understand very much the spirit of your question. We did not actually start off by looking at all conceivable options. We started out by looking at those options which either a reputable government or scientific agency has seriously considered at some point. We recognise that there has been if not unanimity then a clear preference in favour of one particular management route, namely deep geological disposal, but our terms of reference did ask us to start from a blank sheet of paper and I think, though the Minister will tell you himself, there has been a conviction on the part of Government that the problem with the previous process was that both technology and the site were predetermined and then there was an engagement with the public. There is, I think, quite a lot of merit in starting by asking people what they think. Having said that, we have brought forward our short-listing process and we will complete it more quickly than we otherwise originally intended and we have made sure that the amount of technical work we commissioned on options which at the moment we think we shall not proceed with has been relatively limited but we do feel that we have to go out to our public and stakeholder engagement process, tell people what we think the options are and invite them also to say what they think and we regard that as an important part of this process.

**Q6 Lord Flowers:** So, if the public thinks some particular disposal mechanism is the one they wish for the most and you know it is stupid to do it that way, you will tell them that they are being stupid, will you?

*Mr MacKerron:* I think the short answer to that is "yes". We have clearly said that we will own our own recommendations. We have clearly said that we shall take the best scientific and technical advice. If we do not possess it from within our own membership inevitably in such a small group and if that scientific and technical advice tells us that a particular option is useless for whatever reason, we shall say so and we must. There is no point in doing otherwise.

**Q7 Baroness Walmsley:** When you are asking members of the public a very technical question or their view on very technical issues such as this, obviously you cannot expect an ordinary member of the public to understand all the technological background. How much information do you give them before asking them that question?

*Mr MacKerron:* That is a very good question. We clearly are not going to ask people who come in from the street detailed technical questions which they will find it difficult to understand, as indeed I would. We will be asking different people in our process different sorts of questions. There will undoubtedly be some complex technical questions which we shall never put to members of the public, though we shall ask some stakeholders who do have specialist views and knowledge their views about some particular questions, but I think it is a horses for courses question. We shall clearly discriminate between different categories of people in terms of the questions we shall put to them.

**Q8 Chairman:** Do you think there are any significant groups of stakeholders or those that you might consider who have not already put their views on public record?

*Mr MacKerron:* It is hard for me to say. Many stakeholders have views on the public record. Some stakeholders have changed their views to a degree over time. It is true that there are many published views already available. We will be putting potentially somewhat different questions to them and I think that, as part of the process of leaving a clear audit trail for Government when our process comes to end, I think it is important explicitly to put questions again even if, in some cases, we have a fairly reasonable idea what the answers may be. I think we have to be explicit and we have to be open and leave a trail which can then be followed if people subsequently should object to something the Government propose after we end our process.

*Ms Watson:* It is perhaps also worth noting that we may be asking those questions with a slightly different inventory in terms of the waste that we are talking about because we have also been asked to consider plutonium, uranium and spent nuclear fuel which have not previously been categorised as wastes. So, it is possible that some of those stakeholders who put their views may not have put them in relation to that or may wish to change their views in relation to those materials.

**Q9 Lord Tombs:** Mr MacKerron, we met at Ipswich and thank you for your hospitality there. I want to deal with the constitution of CoRWM and that of the Committee itself. It is self-evident, I think, that there are no experts on the question of nuclear waste, science or technology on the Committee or at least as

---

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

---

regards its disposal. Was that by design or accident and do you regard it as a strength or a weakness? Following that, if I can give you another one which may follow on automatically, given the situation we have, how will you at CoRWM ensure that the preferred option which you arrive at can be demonstrated to be the best technical option?

*Mr MacKerron:* It is always convenient to be able to answer, “you will have to ask the Minister” to answer at least your first question. Clearly, Government set out, I think, in 2002 the range of skills they wished to draw upon in order to appoint CoRWM and that was quite a wide range and it was not purely scientific skills and it certainly was not limited to the science of underground disposal or any other management option. We do have on our Committee a majority who have, as their first degree, a science specialisation of one kind or another and we have a smaller number of people whose lifetime work has been involved in science and engineering aspects of nuclear but of course we cover only a very small part of the relevant scope and disciplines that might be necessary, especially when you consider that we did start from a blank sheet of paper. I personally think that the composition of the Committee as I perceive it is a strength in the sense that we have the capacity, I think, within the Committee to go out to the public and stakeholders and hope to earn trust by the fact that we have a number of people with experience—and my Deputy Chair is one of those—in issues of transparency and public engagement. So, I think the mix we have of scientific and non-scientific backgrounds I regard as a strength. To come to your other question which is, how will we secure the best technical input to make sure that whatever decision we have is technically sound enough, there are a number of different possible answers and I will try to be brief. One, I should say in terms of our budget. Defra originally suggested that we should have about £0.5 million to commission technical and specialist work. We felt that was not adequate. We propose that that budget be increased to £750,000 and all the indications we have had from Defra is that that will be something that they will accede to under all normal circumstances, they are very sympathetic to that. The second part of the answer is that we have already set up a pool or are in the process of setting up a pool of reviewers of scientific work and we will also use such a pool to review the kinds of work we are trying to commission before we commission it as well and, to give you examples of those people to whom we are speaking on that subject, the Royal Society and the Royal Academy of Engineering are two of the bodies we are already in touch with and, in the case of the Royal Society, have an assurance that they will be very interested to provide us with relevant people to help in the technical assessment of what we do. Those are the kinds of ways in which we are trying

to make sure that we do have a technically sound basis for our recommendations.

**Q10 Lord Tombs:** You still have of course to weigh those responses and other responses you get within the Committee; that is the problem I foresee.

*Mr MacKerron:* We may well find that not every scientist agrees with every other scientist. Speaking as an economist, I am well aware that not every economist agrees with every other economist. We will have a process of having to weigh that and that will be a major responsibility for us.

**Q11 Baroness Perry of Southwark:** Mr MacKerron, this really follows on from Lord Tombs’s question. In your forward look at your programme, you say that, during Phase 2, you were going to identify the data gaps and commission research. I have two questions. First of all, how have the gaps been identified? Who have you consulted about what the gaps are and was that a technical consultation as well? Secondly, does your Committee think that the major science questions have been answered or are you intending to commission specific research after Phase 2?

*Mr MacKerron:* In terms of the gaps and how to identify, we are in the middle of a process now in which we are trying to define for ourselves where there are gaps in information that we need to fill. Some of these are not gaps in the world of science, they are gaps in our understanding of the things that we need for our specific process. We are seeking advice from a wide range of bodies and I mentioned the two royal institutions as examples of those and we are explicitly going to use such bodies to ask about the kinds of gaps as well as about the results of the work once it is commissioned. So, we hope very much that that will cover it. We intend to commission most of the work of a technical and specialist character in the next few months to be ready for our so-called Phase 3, which is the main options assessment beginning next summer. Because some of this work is complex, we must commission it very soon. We are committed to commissioning further work beyond the next two or three months should our process, especially of public and stakeholder engagement, suggest to us that there are further gaps, but I also would not like to raise the expectations of the Committee too far. We do not have either the budget, the remit or the scope to commission new scientific work. We are essentially in the business of reviewing best scientific and technical opinion on a number of options such as exist already. We simply do not have the timescale or resources or remit to go into some of the more open-ended questions and, not being a scientist myself, I am not in a good position to try and define in any detail what those basic science gaps might be.

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

**Q12 Chairman:** Could I ask whether you think your Committee is actually in a sufficiently strong position to commission work appropriately because there is a question of being an expert or experienced customer if you are buying anything, otherwise you do not know what you are getting.

*Mr MacKerron:* It is a very fair question. I think if the Committee were left entirely to its own devices, although we have some members with relevant specialisms, I would still feel exposed and I understand the spirit of your question. One of the reasons why I have been very pleased that we have had NNC appointed as our programme managers is that they are a company which has long experience in both the conduct and commissioning of relevant technical work in a very wide range of nuclear disciplines including, in recent years especially, issues of nuclear waste management and because we are setting up other pools of expertise to which we refer as well, I am convinced that we are well enough covered by both our programme manager and our pools of expert outsiders that we will actually meet this requirement properly.

**Q13 Chairman:** I think it might be helpful to the Committee if you would explain the role of a programme manager.

*Mr MacKerron:* We have two main kinds of support. One comes from Adam Scott and his team, the secretariat, which is, in a sense, managing the Committee and managing the Civil Service process and I would not underestimate that that is rather a large task in itself. The role of a programme manager is to support us in terms of, on the one hand, classic project management techniques, a three-year quite complex project has to be managed, but also and very usefully in this case to give us advice on technical questions in which that company is well specialised. They are also responsible for helping us commission that kind of technical work in which they do not have specialisation and one of the things I am very keen to make sure is that NNC do in fact put out to tender or to other people technical work which, in principle, they might keep for themselves. In other words, we need to be completely transparent. I might just ask Adam whether I have left anything out of this description of the responsibilities but that is as I perceive it.

*Mr Scott:* I think that is a fairly comprehensive answer. The programme manager's job is to keep the project on track, to provide or commission any technical support needed and also to manage, and if necessary procure, other parts of the programme. So, when we are running our public and stakeholder engagement process, they will be setting up meetings, recruiting members of the public for particular exercises and so on and the secretariat's job, as the budget manager for Government, is to make sure

that they do a proper job and we are trying to question them to make sure that they keep everything moving forward but, at the same time, they are widening the pool of potential suppliers as much as possible.

**Q14 Chairman:** I did not quite catch whose responsibility it was to make sure that they were doing a proper job.

*Mr Scott:* Ultimately, mine.

**Q15 Chairman:** And you have sufficient experience in this area to do that?

*Mr Scott:* I do not have technical or programme management experience but I can see if the programme is getting severely off track and I also rely on appropriate members on the Committee who are helping to judge on particular projects whether something should go ahead or not.

**Q16 Lord Flowers:** Mr MacKerron, if the Royal Society and the Royal Academy of Engineering make a clear recommendation for disposal methods—and it will be underground disposal, I feel sure—is your Committee brave enough to stand up and say, “You are both wrong” and, if so, on what basis could you do that?

*Mr MacKerron:* That is the important caveat. Clearly, if we had reasons to think that they were wrong—and they would have to be clearly very strong reasons—we would say so. Whether we would say they were simply wrong or that this was not the right response to the questions we had been asking is a moot point, but we are very conscious of our responsibility as an independent committee, as a committee which will secure the best evidence it can both from public and stakeholders and from the best technical and scientific opinion and we will own recommendations when it comes to it. I personally hope that we do not have that kind of clash but we are quite convinced that we will own our own recommendations. We will have to be convinced that they are technically sound. We will have to be convinced too, as our terms of reference say, that the recommendations will inspire public confidence. That is our job and we have to do both.

**Q17 Baroness Sharp of Guildford:** I wonder if you could tell us what you think the UK can learn from the experience of other countries, particularly Canada, France and Finland, and perhaps you could also, while answering this, tell us what you think CoRWM itself learnt from the recent visits that you have paid to Sweden and Finland.

*Mr MacKerron:* We are very keen to make sure that we learn the applicable lessons that exist from the experience of course in the UK but also in other countries and the countries you have mentioned are

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

all especially interesting to us. We are already in quite close contact and have met the Chair of the National Waste Management Organisation of Canada which has some similar responsibilities to our own and, as you say, we have recently visited Sweden and Finland. I think some of the lessons that we can get from those countries are clear and transferable, especially the need for a process of openness and transparency and continuity and making sure that all those voices who wish to be heard are heard and evaluated appropriately. In some areas, we are not so fortunate. In all those cases, the principal problem with which those bodies that we have met are dealing is the management of spent fuel. We have many more waste streams and we have separated plutonium, uranium as well as spent fuels to think about and that makes the British task significantly more complicated and it is also true that parts of Scandinavia—and you will probably reach the edge of my geological knowledge quite soon—do have certain kinds of rock formations which make it, it seems, relatively easier to recommend certain kinds of options to do with the underground disposal than has historically been true here. So, we have to distinguish very carefully those things which we can learn directly and those things which we cannot. I think we were all encouraged by our visit to Sweden and Finland by the way in which the process has been managed there and by the way in which, in both countries, there are local communities whose political representatives are actually, in some important sense, competing to be the site for long-term radioactive waste management facilities. This is something that we found initially surprising but very interesting when we investigated it.

**Q18 Baroness Walmsley:** How do you see the responsibility of your Committee dividing between two parts of your brief: finding the appropriate technical solution for radioactive waste management and gaining public acceptance for that solution? Certainly when the Committee attended one of your deliberations, our impression was that you were spending, at least at this stage of your work, more of your time on the second part by making sure that your process was . . . well, rigorous would be an understatement, I think! This may be something to do with the stage that you have reached in the course of your work, but how do you see your responsibility dividing between those two things?

*Mr MacKerron:* I prefer to use the language of integration rather than division. It seems to me that both the technical and the public and stakeholder parts of that process are essential. I do not think it is possible to prioritise one over the other, but it is important to remember that, in our terms of reference—and I suspect in Government's thinking—the need for effective public and stakeholder engagement and the attempt to build

trust with those with whom we speak is absolutely central to our process. We have spent a lot of time early on thinking as best we can about how to engage in that public and stakeholder engagement process because that is original and unique to us. The securing of the best technical advice is important and the method by which we do it matters a great deal but there, I think, we are largely collecting best existing opinion and there is a sense in which that, while not a simple process, is one which we perhaps, in our early phase, spent rather less time on than on the critical issue of how we engage with public and stakeholders. Jenny may wish to add to that.

*Ms Watson:* I think partly one of the questions will be that some of the scientific and technical information that we will need will need to come from the public and stakeholder engagement processes and people are going to be asking us some of the questions that they will need to see answered as well. So, I think we are expecting a rather stronger focus on it later in the programme. One of the key things we have learnt—and Baroness Sharp asked in one of the questions, “What have we learned from other countries?”—is that, if you do not get the process right at a very early stage, you can very quickly lose all the trust that you have had built up so far and I think it is fair to say that, since we have started, we may be in a honeymoon period but we have certainly had a very positive and open engagement with the very wide range of stakeholders. So, I think we are acutely conscious that we have to get that early process right in order to keep them with us as we start to delve more into the scientific understanding.

**Q19 Lord Flowers:** Although judging from the Ipswich meeting, which we were fortunate enough to attend, you had very little of the public there to influence or to give any sort of impression of what they felt.

*Ms Watson:* I think that is a very fair point. You will all know, I think, that we meet in public and we have been meeting in public at various towns and cities around the country. They are our meetings but we hold them in public in order that people can see and hear what we are talking about and that is, in itself, a confidence-building process. They are not our stakeholder or public engagement process.

**Q20 Lord Flowers:** But, if there are only about six people there, it does not get you very far, does it?

*Ms Watson:* I think what it does is to show people that if they come, they will see a very open and transparent process with robust debate and open scrutiny, but there will be many other ways that we will use—and we can perhaps talk a little more about those later—to engage public opinion. I think very many people would not have the time to come and spend a day and a half, or the inclination frankly,

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

listening to a committee deliberate, but they will have the time and inclination to become involved in other ways.

**Q21 Lord Jenkin of Roding:** That leads on very well to the next question and I declare an interest since I chaired the *Science and Society* inquiry by this Committee five years ago and we reported, as I am sure you are aware, in 2000. This whole question of consulting the public and engaging the public is one on which a large number of organisations, after an initial period to digest what I think I may fairly say has been a very influential report, have asked the question, how can this be done? There is one point on which I think I would disagree with you which is when you said that your task is unique. There are a large number of other bodies involved in various aspects of scientific research and inquiry who are currently engaged in this. What evidence are you taking from the substantial body of social science which has analysed our report and is now coming up with a variety of solutions?

*Mr MacKerron:* First of all, if I tried to claim that process was unique, I apologise; I did not mean to say that. I think I meant that, in the history of radioactive waste management, we are doing the unique task but not at all across the board. I recognise that there are similarities between our process and many others. We have indeed taken a great deal of account of social science communities, some of them academic, some of them not, who have taken your report and others and now are quite experienced at developing particular ways of engaging with the public. On the other hand, we are also very keen to make sure that we do not get over-sophisticated and that we engage with people in as simple and straightforward a way as we can that is consistent with those messages. There is quite a complicated process for us of trying to make sure our process is effective and valid but also simple enough that a very wide range of people can understand it. I think it is fair to say that we are heavily engaged and have been right from the outside at the moment we were appointed with the relevant social science community that is deeply engaged with the science and society issue and we are paying very close attention to what they are telling us.

**Q22 Lord Jenkin of Roding:** How much attention do you pay to what is going on in Finland and a number of other countries?

*Mr MacKerron:* As we have said, we have very recently visited Finland and we got some very interesting input from a variety of different people in Finland. We are convinced that there are many things that Finland and, for that matter, Sweden do offer us especially in terms of process and we are engaged with the people there and will continue to be and we found their experience extremely helpful.

*Ms Watson:* We are also plugged into networks which a number of you will know about particularly COWAM which I think is Communities involved in Waste Management, which is another international network and we have had a number of members go to various COWAM events and bring back learning from those events and I think that is a mutual process but we are hoping to get a lot out of that and that is again about how to involve different communities and different stakeholder groups and the public within that process.

**Q23 Lord Jenkin of Roding:** One of the points that was made in the *Science and Society* Report was that there is a clear distinction between market research, which sometimes can involve quite large numbers of people, and engaging the public. I have to say that I find it very difficult to see how you are going to engage the public and perhaps you could say a word about that. One of the messages one also has is that people actually will not be engaged until you are talking about specific sites and then they will engage. Could we have your views on that?

*Mr MacKerron:* It is clear that we cannot, especially with our resources, engage with the public on a very wide scale and it would be fruitless of us to pretend that we could. However, there are a number of ways in which we can engage the public, in the sense that those people who have no clear prior view about these things, in what are called technically deliberative processes in which information is provided and debate is structured and note is taken of it. There is evidence that, if you do that well, there is a certain representativeness that can be applied to a wider public. Of course, we are never going to engage the greater part of the population of the UK in our process. That is not realistic or feasible to do. On the other hand, it is important to remember that there are sites already, some 30 of them, in which various kinds of solid radioactive waste is being stored in a so-called interim form where interim, as you may know in the nuclear industry, is rather longer than in some others. We may be speaking about decades. We have already visited a number of sites where radioactive waste is currently stored—Sellafield and Dounreay are the two obvious ones—and we have collected a lot of quite interesting preliminary views from those communities about what they think about siting and there are important transport issues about which people have widespread views, historically places like Cricklewood in North West London, where you can engage people even though we are not in the process and we will not be in the process of recommending a specific site. So, while I entirely accept that we shall not engage more than a very small proportion of the public, we are already seeing signs that quite wide-ranging communities do take an interest because there are siting issues that already affect them.

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

**Q24 Lord Jenkin of Roding:** Are you hoping then to be able to answer the question—will your proposed technical solution have public acceptance?

*Mr MacKerron:* In our terms of reference, public acceptance does not appear. There is a rather perhaps carefully worded phrase which says it is our job to try and inspire public confidence. Public acceptance will be in terms of a longer-term Government process. It is very important to say that we are the front end of what will inevitably be a quite a lot longer process. Government will make their own proposals when we have finished our work on which they will seek wider acceptance. Our job, I think, is to try to build enough trust and confidence in as large a community as we can so that the Government's job subsequently—and it is Government's and Parliament's job finally—becomes easier and acceptance then becomes possible, but I think I would be claiming too much if I thought that we were going to get full public acceptance. It is a long road and Government must be responsible beyond that process.

**Q25 Chairman:** In whom or what do you believe you are inspiring confidence?

*Mr MacKerron:* Clearly while we exist, the inspiration must be in our process and finally in our recommendations because we are what exists in this field at the moment, but we are only a small part of the process and we are at the front of it and Government will need to take over and, beyond our life, continue the process and get the acceptance it will need for the really hard decisions which Government will eventually have to take.

**Q26 Lord Young of Graffham:** To an extent, Lord Jenkin has asked some of the question but I would like to come back to this process or stakeholder engagement, Mr MacKerron. The point you are making about the Government moving on from where you are. It is the foundation which is going to relay the movement in public opinion. You are talking about giving views generally, but how do you ensure that the usual pressure groups which tend to be single issue pressure groups, that tend to be very vocal and that tend to put only their side of the story are not the only groups that you are actually getting comments from?

*Mr MacKerron:* It is a terribly important question for us but I think Jenny is the best person to answer.

*Ms Watson:* I think it is a key question. There are two points I would make about it. The first is that, to some extent, we know from existing research that many people, some of which I suspect you might call the silent majority, are reassured in any process if they can see that a wide range of stakeholder groups, including some of those pressure groups, have had the opportunity to be involved, but that is not enough. The other, I think, is to say that we are

looking at a whole range of techniques and a whole range of social networks to use with those techniques. For example, small discussion groups around nuclear sites and away from nuclear sites; social networks like the Women's Institutes who have already been involved in our process who are attending many of our meetings and talking about what they hear back in their local communities; we are working with schools and we are trying to set up a schools programme in different authorities around the country; and we are very keen to work with local authorities who will have a very key role to play in this and who have their own representative body which can feed in. So, I think through that whole range of techniques and that whole range of networks, we will be able to capture a different range of views. That may not add up to individual voices clicking on the website or writing us a letter but it will surface a whole range of views. I should say that we are, I think, old-fashioned enough to believe that open public meetings also have some value in this process, so we will be undertaking those as well, particularly around some of the nuclear sites. As I say, it may not be always numbers, though we will have a website and we will have individual response forms for people to send back, but there will be other techniques that we could use.

**Q27 Lord Young of Graffham:** Are you not, in a way, confusing two separate things? One is to take evidence from people and the second is to propagate your general views later. If you go round to schools, the WI or whatever, whatever you get from them is not informed specialist evidence of the particular problems of the subject. My concern about giving too much ground to pressure groups is that they only come out normally on the far extreme of any subject and normally, if they are any good at their job, always issue the most scaring of statements about a particular thing. What concerns me is that unless you find a way of bringing to the fore what the silent majority, the average person actually thinks or at least dampening down some of the more extreme, you will end up actually only reinforcing public fears about the word "nuclear".

*Ms Watson:* I think that is exactly why we want to go out much more broadly. Of course you are right that many people will not be able to give us detailed scientific evidence and we have other groups to get that which Gordon has already told you about today, but what a broader range of public engagement can do is to tell you the things that people think are important when one is making decisions about this. It may be that everybody would simply say to us, "Well, safety has to be the paramount consideration" but I suspect—and they are already starting to—that they will raise other issues with us as well and one of the things that we must do is not only to make

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

recommendations about an option or options for long-term management but also the strategy that might accompany that in order for it to gain public confidence, so we need to hear those things.

*Mr MacKerron:* It has been a concern of many members of the Committee right from the start and very explicitly—and the phrase “the usual suspects” has been used—that we should not only hear from those people who are well organised and who beat a path to our door whether or not we knock on it ourselves. So, it has been a critical part of our debate about how we engage the wider world that we do elicit views from those people who do not at the moment have clearly defined positions and we will feel very unsatisfied with ourselves if we have not done that as well as we possibly can within the limits of our resources and time.

**Lord Young of Graffham:** Of course safety is paramount, there is no question about that, but really what the Committee should be doing is saying, “This is a process which is inherently safe” because nobody would ever recommend any process that was not safe in itself and there may well be—and you should decide—technologies which are safe in themselves and they should be then trumpeted from the rooftops because otherwise we will not see any progress.

**Q28 Chairman:** The world has changed over the last couple of years. To what extent do you think that your Committee is equipped to review security of existing stores of waste and to what extent will security play a role in decisions about long-term solutions?

*Mr MacKerron:* Just to be clear what our remit tells us to do and what it does not, we have no responsibility at all for advising on the short-term security issues. We are not constituted in a way that would be suitable for that and we have not been asked.

**Q29 Chairman:** By “short term”, do you mean immediate or do you mean incidents which may occur at any time?

*Mr MacKerron:* We have no responsibility for security in any operational or real sense at all. We know that, following the events of 9/11, many people, both in the scientific community and outside, now feel a greater sense of urgency about the process than they did before. When we have been discussing among ourselves what are the criteria which we shall try to use to evaluate options, then the security issue has come up extremely high and we expect that, when we engage with the public, they will likely tell us the same thing, but it is very important to say that it is an important criterion for us but we have no responsibilities as such for security at any moment in

time and we are constituted to recommend long-term management options, not those that will be in place in the next few years.

**Q30 Lord Flowers:** But security is bound to be an issue in considering choice between a number of possible methods. For instance, you could continue with the present business of ground level storage for much longer but that of course is subject to a terrorist attack and, if it were in my hands, I would rule it out on those grounds.

*Mr MacKerron:* As a criterion, we regard it as an extremely important one and we have already begun to commission some work on the nature of terrorist risk that surrounds different options including surface storage. So, we think that security is a very important criterion and we expect to have that confirmed when we talk to a wider public.

**Q31 Baroness Platt of Writtle:** As Lord Flowers has just said, while the present nuclear waste, of which there is a large amount, is stored in the way it is, it is subject to possible terrorist attack. So, the longer we wait for a long-term solution, surely security becomes a more difficult question.

*Mr MacKerron:* I am sure security is a very important question and we will give it, I think, due consideration. I think it is also important though to look at the context in which there could be a long-term management option chosen. Let us suppose that it were decided, though we are not committing ourselves to this, that deep underground disposal were the right way to go, if you ask the opinion of expert bodies like Nirex, they will tell you that, if things go well, one might have actually started putting such waste underground by about the year 2025. That is a long time in relation to security but we do not see any way around that. We are certainly moving as fast as we reasonably can but we are just the front end of the process and it will inevitably be some years, possibly decades, before a long-term solution can be implemented.

**Baroness Platt of Writtle:** That is the frightening thing.

**Q32 Lord Mitchell:** If you are the front end of the process, who is the back end?

*Mr MacKerron:* Without making reference to pantomimes and horses, the back end, I think, must be inevitably the Government process that will take place after we report. After we report, assuming that we have done our job well, the Government are likely to take some time, I suspect, to do some further consultation. They will then move, I would guess, towards a siting process for whatever kind of facility may then be recommended and then one would suppose that one would move to the public inquiry and those other processes that will then take place.

18 October 2004

Mr Gordon MacKerron, Ms Jenny Watson and Mr Adam Scott

We are not really specialists in our Committee on what will happen subsequent to our process but, when we listen to other people, then it is clear that Government will have to take responsibility subsequently and that it will inevitably take a period of years. Experience both in the UK and elsewhere says that it will. Just very briefly, Finland and Sweden are doing very well but both Finland and Sweden have had more or less continuous processes for

something like two decades. Our processes have been seriously interrupted and we are, I think, at the beginning of a new process and one cannot expect it to be immediate.

**Chairman:** Mr MacKerron, Ms Watson and Mr Scott, thank you very much indeed. I am afraid we have come to the end of our allotted time. We are most grateful to you all for coming to talk to us this afternoon. Thank you very much.

### Examination of Witnesses

Witnesses: MR ELLIOT MORLEY, a Member of the House, Minister of State for Environment, and MR CHRIS DE GROUCHY, Radioactive Substances Division, Department for Environment, Food and Rural Affairs, examined.

**Q33 Chairman:** Good afternoon, Minister. We are glad to welcome you to the Committee. I wonder if, for the record, you would simply say who you are and your position.

*Mr Morley:* I am Elliot Morley. I am Minister for the Environment at Defra. I am accompanied by Chris de Grouchy, who is from our specialist Radioactive Substances Division.

**Q34 Chairman:** In our report in 1999 on the management of nuclear waste, we urged the Government to act promptly and without delay. On the other hand, we have heard from our immediately preceding witness, Mr MacKerron, that CoRWM was told to start with a blank sheet of paper. An enormous amount of work has been done by this Committee and by many other organisations: authoritative, influential and experienced organisations, have made contributions. Why were they urged to reinvent the wheel?

*Mr Morley:* It was not so much reinventing the wheel. As you know, this is a hugely complicated, difficult and controversial area, and you will be aware of the public inquiry which ended in 1997 and all the problems that went with that. I think that given the history of the public inquiry in 1997 which was inconclusive, certainly at the very least in that it was taken as a finding against deep disposal and that is how it was interpreted by many people, it was right and appropriate to allow CoRWM the broader remit in relation to the work that it has to do and also to approach the whole process as openly and as transparently as possible in order to involve as many people with an interest in this and also to hear all shades of opinion. So, it is a complex proposal and, as you say, a lot of work has been done since your Committee's report in 1999, which was a very helpful contribution to the process in itself, and that is why it has taken some time to get the Committee up and running because of the huge amount of work. It is also fair to say that there were other issues to deal with such as the setting up of the new Nuclear Decommissioning Authority, for example, and also

dealing with the Energy White Paper. So, an enormous amount of work has had to be done since 1999.

**Q35 Chairman:** I think you have instructed the Committee to finish its work by 2006.

*Mr Morley:* Yes, in July.

**Q36 Chairman:** Do you regard this as feasible?

*Mr Morley:* Yes, I do. I had a meeting with the Chair very recently and he has assured me that while it is challenging given the amount of work, he is confident that the Committee can meet that deadline.

**Q37 Lord Tombs:** I think we might agree—and CoRWM certainly would—that their members are not experts in the science of radioactive waste. Was that constitution of the Committee accident or design on the part of the Government?

*Mr Morley:* The structure of the Committee was very carefully considered and you are right to say that while there is a range of expertise on the Committee it is of course a very specialised area, and what I would say is that any scientific recommendations they made would be subject to full peer review in relation to external experts who would look at the science of anything that is suggested. I think there was something like 400 applicants for the Committee, so there was a very strong range of people who had applied. The idea is for the Committee to evaluate a lot of the existing reports, to look at some of these, and their conclusions and various recommendations, and to advise accordingly, and there is a cross-section of opinion on the Committee which of course is part of its strength.

**Q38 Lord Flowers:** It seems almost perverse that there is nobody on the Committee who can make personal contribution to any of the scientific or technological aspects of the problem of waste disposal.

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

*Mr Morley:* There is an external advisory consultancy and the Committee has access of course to any level of expertise that it chooses.

**Q39 Lord Tombs:** I think I can take it that the answer is that it was by design that the Committee was so constituted.

*Mr Morley:* It was by design. Chris, do you want to make a comment on this?

*Mr de Grouchy:* Simply to add that, in the process by which the Committee was put together, the issue that you are raising, the issue of the understanding of the scientific and technical background, was very well understood and was given priority. I think that Defra as a department takes the issue of understanding the scientific and technical background issues very seriously indeed. Having said that, as the Minister said, there is a very broad range of interest involved here. It was critical that the Committee should be able to interpret and act, as it were, as an intelligent customer for all those interests and that was the basis on which the Committee was established, bearing in mind—and we may develop this line—that it must have access to a variety of routes for validating and peer reviews.

**Q40 Lord Flowers:** Scientists should be on tap and not on top, in other words!

*Mr de Grouchy:* That is not an expression, with respect, that I feel comfortable with. I think it is more a matter of close partnership between the variety of interests involved.

**Q41 Lord Tombs:** A number of members here with scientific or technical background have sat on very complex committees with a lot of lay people and, for my part, I find it very difficult to understand how a committee can deal with a subject of this kind without discussions between themselves which are informed by experience. That leads on to my next question. How do you think CoRWM can realistically discuss a complex issue of this sort and evaluate necessarily contradictory evidence they will receive?

*Mr Morley:* I think it is the quality of the people who are on the Committee. I have every confidence in CoRWM and the skills and the ability of those who sit on the Committee. Yes, it is technical and, yes, there is a lot of information to take into account but that is the role of a range of advisory committees who are made up in similar ways. Not all advisory committees are dominated by scientists. It varies. I think you also need a range of people from a range of backgrounds and there are some real experts on CoRWM who can actually take into account and try to evaluate the various information and options which are put to them.

**Q42 Lord Tombs:** It may be of interest to know that the 1999 Committee, a committee of this Committee, had only 13 members, only three of which could be described as familiar with the subject and we had some very fruitful discussions as a result of that but—and I speak as the Chairman of the Committee—it was fruitful because it was an in-house knowledge and an in-house ability to discuss the written and contradictory issues. So, I find it surprising and I will leave it there.

*Mr Morley:* I do think CoRWM does have an ability and of course they can call upon, as I mentioned before, external experts including bodies under the Royal Society, for example, and basically they are free to call upon the experience and advice of established experts as they see fit.

**Q43 Chairman:** Let me put it another way, Minister. Would you be happy to fly in an aircraft, the engines for which had been selected by a committee with a wide range of opinion, which I think we would all agree is present on CoRWM, but relatively limited technical expertise?

*Mr Morley:* I think you will find that aircraft engines are selected by economists as well as scientists, for a range of options by a range of experiences of people.  
**Chairman:** May I take that as a no, you would not?

**Q44 Lord Young of Graffham:** Minister, I above all appreciate the need in this subject to tackle the ultimate challenge; there is no question about that, but this is not a problem that is unique to the United Kingdom. This problem has now had exhaustive study internationally. With all that wealth of information why was it necessary for CoRWM to go back to the very beginning and even investigate things like disposal at sea and other areas which clearly would be non-runners?

*Mr Morley:* Disposal at sea is clearly out; I make that absolutely clear. I do not know whether that was a serious issue. It is just of course that there were no restrictions on them looking at the various options. You have to bear in mind that not every country's experience is absolutely relevant to our own in the way that they are dealing with nuclear waste. It is not a subject that should be ignored. What other countries have done and are doing is very useful. Some countries, like Canada, have embarked on a very similar process to CoRWM. Other countries, like Finland, decided to go for the deep disposal route. Then if you look at countries like Finland and Sweden and at the nature of the nuclear waste that they have to deal with, it really is much more limited in its range than the waste that we have to deal with because we were pioneers in this field of nuclear technology. We had some of the older systems in relation to Magnox fuel, for example, the way that it has been separated, the way that it has been stored,

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

the condition it is in now, and the fact that we had a nuclear weapons programme. Finland and Sweden did not, of course, and there are other issues there in relation to the type of waste that they have. All this means that the solutions that we may wish to look at may well be different and they are, by the very nature of the fact that we are a pioneering country in relation to nuclear technology, much more complicated.

**Q45 Lord Young of Graffham:** We seem to be taking a much more relaxed approach to this problem in that a number of other countries are talking about dates for opening repositories for nuclear waste in the twenties and we are not until after the forties. That is a very long way ahead and normally speaking, in the world which we will then be in, talking about doing something after the forties means no. Should there not be, with all the other advantages and disadvantages that this report should come out with, more of a sense of urgency in looking at the technical issues?

*Mr Morley:* Of course there are issues in relation to the need to get on with this because of course nuclear waste is an issue now and it will increase in the future, particularly with the decommissioning programme of the older stations. On the other hand this is a very complex and potentially controversial issue. It is important to engage people in the discussions and if that takes a bit longer in terms of getting an understanding of the nature of the problem, getting an understanding of the options which are available, and also demonstrating a process that is open and transparent in the way that it proceeds, then to add a little bit of time to the process I think is probably better than having some of the confusions and polarisation that we saw in the 1997 inquiry, for example, bearing in mind that the engineering solution is probably quite a long way away.

**Q46 Lord Flowers:** Minister, do you think that CoRWM is significantly involving the public?

*Mr Morley:* CoRWM will be involving the public. It has just concluded its Phase 1 report. I do not know whether the committee have had a chance to see it. I will make sure you receive a copy of that. It has only just become available. Its Phase 1 report sets out its work programme and what it intends to do. Part of that is extensive consultations around the country.

**Q47 Chairman:** Just to go back to what you were saying a moment ago, Minister, I agree totally that there are great complexities in this, but frankly none of the points that you raised was not patently apparent in 1997, 1998 and 1999. Why have we had to wait so long to get to this?

*Mr Morley:* I remember the 1997 controversy because it was such a high profile issue. If you recall, in 1997 there was confusion in relation to the position that

NIREX was taking. There were arguments about whether it was a deep repository or whether it was storage. There were arguments about the process and the conclusions it had come to. This confusion allowed the opponents of the approach to pick it apart and, as you know, it all unravelled in the end. That is a lesson that we need to learn in relation to the process that we are putting in place now. So I think it is better to have a longer process that is open and transparent, and engages all the stakeholders, than it is to go through the result of 1997.

**Chairman:** I was not so much questioning the length of the process but the length of the time that it took to get to it.

**Q48 Baroness Platt of Writtle:** Minister, a recent European Commission proposal for a Council Directive states, "It is accepted among experts that, on the basis of present knowledge, geological disposal represents the most appropriate solution for long-term management of long lived radioactive waste. To that effect Member States should study the possibility to give priority to deep geological disposal to dispose of their long-lived radioactive waste, taking due account of their specific circumstances". Would you like to tell us what the government's position on this statement is and on the directive as a whole?

*Mr Morley:* We oppose that position from the European Union along with a number of other Member States. We oppose it firstly because the European Commission have not explained why they have come to that conclusion. This is of course an option, and it is an option which will be considered by CoRWM, but to take a definitive position like that there has to be some scientific rationale for it, and the Commission has failed to explain that. Secondly, I come back to the point that, given the differences between individual Member States, given the differences between individual countries and given the differences between our nuclear programme and other nuclear programmes, this should be a decision in relation to the disposal that should be taken in the light of the needs of individual countries. That is our position as a government.

**Q49 Baroness Platt of Writtle:** Surely the basis is likely to be deep geological disposal?

*Mr Morley:* That may well be the conclusion. I do not think it is for me to second-guess the findings of the CoRWM. They will be looking at all the arguments for and against various methods of disposal, including deep disposal.

**Q50 Baroness Perry of Southwark:** Following on from that, can you tell us what is the role of the European Union in overseeing Member States given that the disposal of nuclear waste is very much an

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

international, not a national, issue? What is the position and what do you see in the future? Would it be sensible to leave the oversight of nuclear waste to the European Union?

*Mr Morley:* The European Union has a number of roles, and I will ask Chris to expand on those, and of course one of them is the movement of nuclear waste in relation to European regulations. They of course have an interest in Member States storing and dealing with nuclear waste in proper secure ways. We are also overseen of course by the International Atomic Energy Authority and they are very satisfied with the procedures that we have in place, and of course we are open to scrutiny on that. They are also entitled to look at what individual Member States are doing, particularly on the basis of good practice, but they are not entitled to impose their own views on what is the most appropriate method of disposal and storage in terms of a unified approach, bearing in mind all the differences of Member States. That is our view as a government. Perhaps Chris would like to add to that.

*Mr de Grouchy:* I have little to add to that except to say that the government is of course very concerned to keep to its obligations under those treaties—Euratom, the IAEA and so on. The Minister has explained the position in relation to the proposed directive which clearly, as it is currently framed, would seem at odds with our ongoing process in the UK. I would like to add one point, if I may, which is to say that, in relation to the consideration of any wider options which are raised, the committee has been asked to look at that part of the process very quickly and to focus on those options which it regards as being feasible. I think that is an important point to get across.

*Mr Morley:* Just looking at some of the text from the Commission's draft directive, the preamble states that each Member State shall be fully responsible for the management of all spent nuclear fuel and radioactive waste under its jurisdiction, which seems a bit contradictory to the conclusions it then comes to, which is not unknown, I have to say.

**Q51 *Baroness Perry of Southwark:*** If I may press you on the issue of its future and given the technology in the new accession candidates to the European Union, is there not a likelihood that the EU might take a more proactive role in this oversight? It is an international issue, is it not, in that if one country has a dreadful accident it is not confined to the borders of that country?

*Mr Morley:* That is absolutely right, and there is a role for the Commission in that, although of course you also have the International Atomic Energy Agency. Their role is to make sure that there are safety procedures. As you rightly say, an accident in one country can affect another. In relation to movements of nuclear materials, that is also one for

the Commission's competency because it is cross-border movements within the EU. There are some perfectly reasonable areas where the Commission has an interest and it is not unreasonable that, in these areas, the Commission should have an overview about what Member States are doing in relation to the proper safe storage and management of their nuclear waste.

**Q52 *Lord Jenkin of Roding:*** While we are on this question of international comparisons I do not know if your attention was drawn to an MIT paper published some months ago, *The Future of Nuclear Power*, an inter-disciplinary MIT study. To my astonishment, when it came to listing the United Kingdom in the disposal plans of leading nuclear countries, it said, "Delaying decision until 2040". Would you like to take this opportunity to say that that is complete rubbish?

*Mr Morley:* It is certainly not delaying the decision until 2040; that is not the case. I have seen some studies which suggested various options, some of which are that it might take till 2040 to put them in place.

**Q53 *Lord Jenkin of Roding:*** Yes, but that is a different thing.

*Mr Morley:* That is a different thing; you are absolutely right.

**Q54 *Lord Jenkin of Roding:*** So they are talking nonsense about this?

*Mr Morley:* You may choose to use that expression but I can assure you that the decision will not be delayed until 2040.

**Q55 *Baroness Sharp of Guildford:*** Minister, I wonder whether you could tell us, in relation to some extent to the role of the EU here but outside that as well, what lessons you think the UK can learn from the experience of other countries, and perhaps in particular within the EU from France, Finland and Sweden, but outside the EU from Canada?

*Mr Morley:* As I said, it is important to look at what other countries are doing to see whether there are issues there which are relevant to ourselves. In relation to lessons that we can learn from the Finns and the Swedes, who have come to a conclusion themselves in relation to waste disposal, it took many years of consultation to come to that conclusion. It was a very open process and a very careful process of the type that we are trying to put in place within the UK. I also understand that Canada have embarked on a very similar process in relation to a CoRWM type committee and the kind of process that we are doing. It is interesting to look at what other countries are doing, and of course to look at the technologies that they are applying. Of course we have talked to

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

the Finns in relation to their technology so we are aware of what they are doing and that all adds to our knowledge and it helps in relation to the range of choices that we all have to make.

**Q56 Chairman:** Minister, in connection with Finland could you visualise our adopting a political process comparable to that which the Finns have used, namely, having the final decision being made by Parliament as distinct from by a minister in a department?

*Mr Morley:* I think technically that is the same as here in that any decision which is made will have to be endorsed by Parliament and reported to Parliament. There is no difference constitutionally.

**Q57 Chairman:** I think it is slightly different—

*Mr Morley:* It might be a different procedure.

**Q58 Chairman:** Yes.

*Mr Morley:* But I of course as Minister I am accountable to Parliament and to the Secretary of State, and she is accountable to Parliament. There is full accountability in that the final decision will have to be approved by Parliament.

**Q59 Lord Tombs:** The 1999 report did address this question and recommended that the authority that was set up to handle the nuclear waste question should have its conclusions submitted to Parliament for debate and reviewed annually, and that it might be a very powerful democratic process.

*Mr Morley:* Reviewed annually is a bit of a change of our tradition, I imagine. What I would say is that the decisions in relation to the approval of the process will have to be taken but I personally have no objection to submitting decisions to Parliament for a debate. Whatever the outcome of the CoRWM process there will be an opportunity, I am sure, for Parliament to debate it and for people to give their views.

**Q60 Baroness Walmsley:** Public engagement has clearly been central to developments since 1999 both in what the government has been doing and of course in the work of CoRWM so far. Is this emphasis a reflection on the unique sensitivity of anything to do with nuclear waste management or do you see it as a template for decision making in the future for other contentious matters?

*Mr Morley:* We have used similar kinds of procedures for a range of contentious matters. The GM issue springs to mind where we do have a range of advisory committees. We set up in the GM debate the Agricultural and Environment Biotechnology Commission, the AEBC, which was a very similar structure in that there was a range of representatives, including lay people, from different organisations,

and experts as well on that committee in relation to producing reports to advise the government. Indeed the committee is still in operation and does a very good job, I might say. We very much appreciate the work of the committee and the advice it provides.

**Q61 Baroness Walmsley:** This committee produced a report in 2000 called *Science in Society* in which very specific recommendations were made about proper dialogue. Is the government implementing those suggestions?

*Mr Morley:* I am not sure whether we are because I cannot recall at this moment exactly all the recommendations, but I think we have addressed quite a number of them. I will have to check through the list of them to see what has been done on that.

*Mr de Grouchy:* I believe that the Chairman of CoRWM is taking account of its recommendations.

**Q62 Lord Jenkin of Roding:** We have been given information this afternoon by the Chairman of CoRWM of the extent to which their remit goes, which is to produce a report which recommends a form of disposal and to ensure, so far as they can, that there will be public support for that. There will have to be engagement of the public who must be consulted widely. Can you tell us a little bit of what will happen after the report by CoRWM because at some stage people are going to have to address the issue of sites on which permanent disposal may take place? Can you tell us how you see that process being addressed and over what sort of timescale?

*Mr Morley:* Part of the CoRWM process is to look at siting issues<sup>1</sup>. That will be part of the report and part of the recommendations as I understand it, but of course there will have to be full consultation.

**Q63 Lord Jenkin of Roding:** Just pausing for a moment, we did not gather that from the Chairman. He is not expecting to address that. He said the opposite.

*Mr de Grouchy:* They have the opportunity. They have been invited if they wish to make recommendations about how their conclusion (which will be of a general kind) in favour of a particular form of disposal might be implemented, and one would imagine the government would listen very carefully to those recommendations. It is not implied by that that they will be making recommendations about specific sites, which clearly would be a very sensitive issue.

<sup>1</sup> CoRWM's terms of reference state "the assessment of options will not consider potential radioactive waste sites; but it will raise siting issues, including whether local communities will have a veto or be encouraged to volunteer, and whether they should be offered incentives. CoRWM will need to consider these issues, and may want to make recommendations to Ministers on them".

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

**Q64 Lord Jenkin of Roding:** Chairman, we may need to clarify this because it seems to me there is a conflict of evidence here.

*Mr Morley:* It is CoRWM who are correct on this one. We would expect, as you have heard, to look at the options, and some of the options could point to specific areas or sites and they could if they chose identify a particular site. If they do not wish to do that, as Chris has explained, then they do not have to do that and of course the decisions will have to be taken by government on the basis of the advice that CoRWM provides. Whatever that is, it will have to involve a full consultation in relation to the way forward.

**Q65 Lord Jenkin of Roding:** And presumably it may involve some planning process.

*Mr Morley:* It depends on the site, it depends on the outcome and the proposed solution. It may well involve the planning process, yes.

**Q66 Lord Jenkin of Roding:** Have you any idea of timescale?

*Mr Morley:* I think you will have to wait for the report in July 2006.

**Q67 Lord Tombs:** This is really quite an important question in terms of future determination because first of all the Chairman of CoRWM did say that they would not be part of any discussion on or examination of sites. I think they would recommend a route. Secondly, their budget is so small that there is no possibility of their being able to do that. I hope that the Minister will take away this problem and look rather carefully at what will happen when CoRWM reports because what I would hate to see is a further four years of inactivity in Defra similar to the six years since 1999. I think it is very important that you should have your next plans in place and be able to answer questions such as the ones Lord Jenkin asked.

*Mr Morley:* CoRWM under its terms of reference can produce a second report on implementation issues along with the main option and recommendation. We could, in due course, give some thought to asking CoRWM, and perhaps even change the nature of its membership, to oversee a public debate and consultation on site options. That is a possibility on how we could approach that. Obviously, eventual siling will be very heavily influenced by the options that CoRWM come out with even if they do not specifically identify a site.

**Baroness Platt of Writtle:** We were quite clear that they were not going to do that and that it would be a government responsibility. Equally, we are quite

clear, the members particularly who considered it before, that this is the most controversial thing of all and that once it gets near somebody's back yard they are against it. It seems to me that we do need a programme immediately after the CoRWM report to go into this question of sites which will need transparency, public consultation and all the other things because all this time the present nuclear waste exists and stands there on the ground and surely this does need to be thought out carefully and quickly so that there are plans for getting this nuclear waste into safe housing.

**Q68 Lord Flowers:** We must not yet again start with a blank sheet of paper.

*Mr Morley:* No, because we are looking here for clear advice in relation to implementation. As part of the process that we have put in place I will just mention to you that we are giving thought now to how we take the next phase forward in relation to consultation on specific areas, and of course we would also expect an early indication of the likely outcome of the way that the CoRWM review is going so that we can begin to prepare financial provision, for example, in our budgets. We have given thought to that. That is part of the process. You are quite right: that will be the key issue. Where the site will be will inevitably be controversial, which is why you need careful thought. I would not like to give the impression, if I have, Chairman, that we would want to duck that decision by expecting CoRWM as a committee to make such a contentious decision. That decision is quite properly one for government to make and government will have to be accountable through Parliament for the decisions it takes on it.

**Q69 Chairman:** As Lady Platt says, as soon as we get to that phase the nature of the public consultation changes profoundly.

*Mr Morley:* I think that is absolutely right.

**Q70 Chairman:** There is a question about how much all the precursors have any relevance to that.

*Mr Morley:* Again, there are some unknowns here because it may well be that some of the preferred options are very clear in relation to the implications for the site because the number of sites may be very limited in relation to the options, but that very much depends on which options the committee decides.

*Mr de Grouchy:* I hope this will not seem a contentious point but we have seen what happened in 1997 when that ground was not effectively laid. It is for the very reason that that judgement will be contentious, as the Minister has said, that we are very anxious that we should be able to say that we have had public/stakeholder engagement in getting to that point.

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

**Q71 Lord Flowers:** Minister, one of the most difficult technical areas of CoRWM's work is its assessment of how to deal with the UK's stocks of plutonium, which are quite large. Any assessment they make will depend upon strategic decisions about whether the plutonium is to be treated as waste or whether it is to be used in a nuclear programme—and if so, I have to say that there is far more plutonium than can ever be used in a conceivable nuclear programme—or whether you follow the present line of saying, “It is not waste but we are not using it”, which does not make much sense. All of this of course was explored in 1999. The decision about how to classify plutonium is a strategic matter. Is it a matter for government also and, if so, what should be the timetable for reaching such a government decision?

*Mr Morley:* You are absolutely right of course about the issue of plutonium. Plutonium can be used for fuel and indeed there may well be a future role for that. I accept what you are saying about the level of current stocks, and of course it is a material that, for obvious reasons, we would want to keep under very close and tight control and we have every intention of doing that. It is likely that some stocks of plutonium will be quite heavily contaminated in various ways. That element of the plutonium stock is probably unusable and therefore should probably correctly be classified as waste and that was part of the announcement that Margaret Beckett made in July 2002. We will probably have to draw a distinction between the classifications and I know it was something that you looked at in relation to 1999 in relation to classification, and that was very helpful. That again will be part of the overall decisions in relation to the advice from CoRWM and also potential future programmes relating to nuclear energy, for example.

**Q72 Lord Flowers:** But you are not leaving the classification of plutonium to CoRWM, are you?

*Mr Morley:* No.

*Mr de Grouchy:* The new Nuclear Decommissioning Authority will obviously have a strong interest in this issue and it will be one on which we envisage they will want to give early thought. Could I just make a point about the timetable within which CoRWM is doing its work because I think it is very relevant? I think this is an example of how CoRWM is seeking to make sure that it does move forward at as fast a rate as it can, albeit some of the issues in the background are not yet fully resolved. What the committee is intending to do, I understand, as I hope will be clear from their first report which, as the minister said, has just been made available, is that they will look at a range of options in this area so that as that information on strategic decisions emerges they are able to assimilate it rapidly. I hope that is a helpful contribution.

**Q73 Lord Young of Graffham:** If I can follow on from that, how well equipped is CoRWM to review the security on the existing waste? When the report comes out in two years' time that is going to be quite a significant element for public concern, and a large part of CoRWM's activity with stakeholders is to allay that concern.

*Mr Morley:* I am not sure it is within CoRWM's remit in relation to the security of plutonium storage. That of course is a high priority.

**Q74 Lord Young of Graffham:** Forgive me: it does involve all sorts of radioactive waste in terms of security.

*Mr Morley:* In relation to the security of storage in general terms, then yes, that will be a consideration in relation to whatever the long term solutions are.

**Q75 Lord Young of Graffham:** But are they equipped to deal with the security aspects of that and will they be able to comment on them?

*Mr Morley:* I am sure that they will, bearing in mind that there is also an external security assessment. It is not entirely for CoRWM to decide the security because security is a major issue. In fact, there has been a recent assessment of security because of the international situation, and of course I cannot go into details as you will appreciate.

**Q76 Lord Young of Graffham:** I am just suggesting that whenever people mention nuclear waste these days they think in terms of terrorists.

*Mr Morley:* That is why security is an issue; you are absolutely right.

**Q77 Baroness Platt of Writtle:** How will CoRWM interact with the Nuclear Decommissioning Authority? Once they have reported what role will the NDA have in the next stage of the process?

*Mr Morley:* Obviously CoRWM will have an interest in relation to what the NDA is doing. I do know that they are in regular contact with the NDA team so that they do talk to each other. They are not operating in vacuums. It is important that they have that consideration. The NDA, of course, are themselves interested in the work that CoRWM is doing because that will influence their decommissioning because the site of storage is a factor in that. We would expect them to keep in close touch and to work together in relation to some of these issues.

**Chairman:** Minister, would it be within CoRWM's remit, for example, to consider how local communities might be compensated for receiving, for example, a repository? It is a characteristic of a

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

number of countries where these programmes have made progress, and I am thinking in particular of the United States and Finland—

**Baroness Platt of Writtle:** And France.

**Q78 Chairman:**— and France, that local communities have been compensated for perceived environmental damage associated with the existence of a site. Indeed, the CoRWM Chairman commented that they were somewhat surprised in Finland to find that local communities had been competing with each other to house such facilities. This has not been a feature of the UK approach. I wonder if you have thought of this.

*Mr Morley:* I have seen these options applied in France and Finland and I must say I am very interested in the concept, and there is an argument for it. CoRWM do not have to but they are free to touch upon these issues in their recommendations if they so choose.

**Q79 Lord Jenkin of Roding:** Your predecessor in my hearing did say that it was his great ambition to solve this problem before he ceased to be minister. Obviously, that did not happen and Mr Meacher has now left the Government. Do you share that ambition?

*Mr Morley:* I am always keen to solve every problem as quickly as possible, and successfully preferably as well.

**Q80 Chairman:** Minister, the last question is in a way one of the more fundamental ones. To what extent do you think the outcomes of CoRWM's work relate to decisions on the future of nuclear power in the UK?

*Mr Morley:* I think it is very important because of course nuclear power has reappeared in the debate because of the problems of climate change, which are serious. As you know, they are taken very seriously by the Prime Minister who has given a very strong international lead on this. One of the reasons why we have no current plans for nuclear power is the huge expense of dealing with nuclear waste and the fact that it is not resolved because, as you know, that is the whole reason why we are having this particular debate. It also takes a very long time to come on line and, given the very large sums of money in terms of commissioning nuclear power stations, I think that there is an awful lot that can be done in relation to development of renewables at this moment in time. It may well be the case in the future that there will be new scientific breakthroughs and new technologies that deal with some of these problems of waste and cost. If that is the case they should be considered on their merits and we should not take a fundamental position on this. Resolving nuclear waste is certainly a prerequisite in terms of deciding whether or not

future nuclear power is viable or not. At the moment its costs and its problems do not compare very well to the development of other technologies and renewables.

**Q81 Chairman:** I am interested to hear a government minister say that because in other areas it leaves these decisions to the market, and if the market does not find a solution attractive it does not follow it up. It would seem to me that the costs should be among the least of the government's concerns under these circumstances but rather that they establish a regulatory environmental framework in which, if companies were able to produce nuclear power at a competitive price, they felt free to go forward with that. Would you not agree with that approach?

*Mr Morley:* To a large extent, although there are other considerations in relation to environmental impact and the long term consequences.

**Q82 Chairman:** And that is planning.

*Mr Morley:* That is right, and they are also part of the criteria that must apply. At the moment market forces are not going to deliver new nuclear power stations because the costs and returns are just so unattractive. We are some way from that in relation to a market based approach. There are new technologies such as hydrogen fuel cells and possibly carbon sequestration which are also so huge that the market is not going to deliver those and there will have to be some intervention as we move away from fossil fuels, as we must. There is a combination of approaches. Some of them will have to be driven by government and indeed some of them will be driven by market forces.

**Q83 Lord Tombs:** I want to put in a plea for disconnection in the Minister's mind as well as in other parts of government between new nuclear power and the long term solution to radioactive nuclear waste. We have a huge stockpile of waste, some of it 60 years old. We have been storing it satisfactorily for 50 years. The technology is improving. You are going to say that you are satisfied with the present method of storing nuclear waste but you want to improve it, of course, and that is the real driver for the long term solution to nuclear waste. To build a nuclear programme of the size of the one we have at present would add less than 10 per cent to the cost. I think it is a dangerous fallacy to link the long term solution of nuclear waste storage to a new nuclear programme. The things are connected, of course, but they are not as simple as that by a long way.

*Mr Morley:* They are not as simple as that but of course it is one of the factors why the nuclear option is not an attractive one because of the need to resolve the issue of waste and cost.

18 October 2004

Mr Elliot Morley MP and Mr Chris de Grouchy

**Q84 Lord Tombs:** But the huge cost, Minister, is there. It does not rest on whether we build nuclear power or not.

*Mr Morley:* I absolutely accept that because we cannot rely on the current storage methods. Some of them are heading towards life expiry so we do need to replace some of those storage facilities and we want a proper long term solution to nuclear waste. All I am saying is that we do not have one yet.

**Lord Tombs:** But please let us disconnect the often promoted but quite wrong proposal that a new nuclear programme has to await the other problem. It could take 10 or 20 years to build a brand new

nuclear programme and in that time you have to make progress on nuclear waste.

**Baroness Platt of Writtle:** The other feature, remember, is that nuclear power does not produce carbon dioxide and that needs to be at the forefront of people's minds.

**Q85 Chairman:** Minister, we are very grateful to you for coming this afternoon. I know you have to get away. Thank you very much for making time to be with us. We are most grateful for your patience.

*Mr Morley:* It is always a pleasure to be here, Chairman.

### Supplementary letter by Mr Elliot Morley, MP, Minister for Environment and Agri-Environment

Thank you for your letter of 21 October 2004 in which you asked for clarification of the following points in respect of the evidence I gave to the Select Committee on 18 October 2004:

- what role the Government sees for CoRWM in terms of recommending sites;
- more generally, what plans the Government has for taking forward the process once CoRWM has produced its final report, in particular with respect to site selection.

In responding, I should like to provide some further observation on another point raised by the Select Committee, namely:

- the availability of expertise on CoRWM, in particular in respect of the science of deep disposal.

### THE ROLE THE GOVERNMENT SEES FOR CoRWM IN TERMS OF RECOMMENDING SITES

In answering this question there is a need to distinguish what is said in CoRWM's current terms of reference, which covers the Committee's work up to its delivery of recommendations in July 2006, from what the Government might ask the Committee to do as follow-on work.

Under its current terms of reference, CoRWM is required:

“to oversee a review of options for managing solid radioactive waste in the UK and to recommend the option, or combination of options, that can provide a long-term solution, providing protection for people and the environment”

for:

“wastes for which no long-term management strategy currently exists—that is, high and intermediate level waste now in storage or likely to arise over the next century or two, and some low-level waste unsuitable for disposal to Drigg”.

The terms of reference go on to say:

“... the assessment of options will not consider potential radioactive waste sites; but it will raise siting issues, including whether or not local communities should have a veto or be encouraged to volunteer, and whether they should be offered incentives. CoRWM will need to consider these issues, and may want to make recommendations to Ministers on them”.

---

**MORE GENERALLY, WHAT PLANS DOES THE GOVERNMENT HAVE FOR TAKING FORWARD THE PROCESS ONCE CoRWM HAS PRODUCED ITS FINAL REPORT, IN PARTICULAR WITH RESPECT TO SITE SELECTION**

Once CoRWM's recommendations have been delivered in July 2006, Government has decided policy in light of it, and the facility or facilities required are clear, we foresee that the process and criteria to be adopted for site selection will also be the subject of discussion in an open and transparent way.

An option to which consideration is being given, but has not yet been finally decided is to ask CoRWM, possibly in a somewhat reconstituted form, to undertake further work to oversee debate of process and criteria for site selection. This would take into account any implementation issues identified in their current programme of work.

This could be carried out in parallel with Government consideration and decision on the necessary institutional arrangements for delivery of the selected option, or options. Once in place, the implementation organisation could be given responsibility for carrying forward the agreed site selection process. We shall be aiming to have the delivery organisation in place, and ready to take on this work, as soon as possible after CoRWM has reported.

**THE AVAILABILITY OF EXPERTISE ON CoRWM, IN PARTICULAR IN RESPECT OF THE SCIENCE OF DEEP DISPOSAL**

It was never planned, and indeed it would have been impossible, for CoRWM to have had access to all the necessary expertise to carry out its evaluation of options. Rather it needs a combination of skills that enables it to act essentially as an executive board for the programme, securing access to, or buying in, expertise as appropriate.

The Committee was selected from over 400 applicants, and we believe it is both well balanced and well qualified to do its job. The Committee contains a majority who have, as their first degree, a science specialisation of one kind or another and others with extensive experience of the science and nuclear engineering aspects of nuclear power.

There are a variety of ways in which the scientific and technical quality of CoRWM's work will be ensured. First, by virtue of the fact that CoRWM's programme is being conducted in an open and transparent way, all with an interest, including the scientific community, can comment on it. Second, the Committee has technical support from NNC Ltd, a long established and well respected company in the field of nuclear waste consultancy. Additional expert input can be secured under the terms of the contract with NNC. Third, CoRWM is establishing a pool of specialists—on the basis of advice from bodies such as the Royal Society and Royal Academy of Engineering—that it can call upon for views. Finally, it is considering setting in place an independent process evaluation contract which will provide for ongoing assessment and reporting back to the Committee as its work proceeds.

All of these mechanisms will provide for appropriate quality assurance and peer review of the Committee's work.

*3 November 2004*

**Supplementary letter by Mr Elliot Morley, MP, Minister for Environment and Agri-Environment**

The House of Lords Select Committee on Science and Technology has asked:

“Whether Defra's Chief Scientific Advisor, or other senior scientific advisors within the Department, were involved in the setting up of the Committee on Radioactive Waste Management (CoRWM), deciding its composition and terms of reference; and if so, how?”

The Defra Chief Scientific Advisor was not directly involved in the setting up of CoRWM, although has been kept informed of its establishment and the development of its work. There were scientific advisors and consultants supporting the Defra division responsible for establishment of the CoRWM programme.

My previous clarification explained the role of CoRWM, the way it would secure access to the necessary scientific and technical advice, and its arrangements for quality assurance and peer review. As the work of CoRWM proceeds, the Defra Chief Scientific Advisor will be taking a particular interest in the latter arrangements for scientific and technical quality assurance and peer review to ensure that they are robust.

*16 November 2004*

---



## RECENT REPORTS FROM THE HOUSE OF LORDS SCIENCE AND TECHNOLOGY COMMITTEE

Information about the Science and Technology Committee is available on [www.parliament.uk/hlscience/](http://www.parliament.uk/hlscience/), which also provides access to the texts of Reports. General Parliamentary information is available on [www.parliament.uk](http://www.parliament.uk).

### Session 2000–01

- 1st Report Science in Schools (follow-up to 3rd Report 1999–2000)
- 2nd Report Therapeutic Uses of Cannabis (*follow-up to 9th Report 1997–98*)
- 3rd Report Resistance to Antibiotics (*follow-up to 7th Report 1997–98*)
- 4th Report Human Genetic Databases

### Session 2001–02

- 1st Report Managing Radioactive Waste: the Government's consultation (*follow-up to 3rd Report 1998-99*)
- 2nd Report Science in Schools: Government Responses
- 3rd Report What on Earth? The threat to the science underpinning conservation (*follow-up to 1st Report 1991-92*)

### Session 2002–03

- 1st Report Managing Radioactive Waste: Government Response
- 2nd Report Chips for Everything: Britain's opportunities in a key global market
- 3rd Report What on Earth? The threat to the science underpinning conservation: The Government's response and the Committee's commentary
- 4th Report Fighting Infection
- 5th Report Science and the RDAs: SETting the Regional Agenda

### Session 2003-04

- 1st Report Chips for Everything: follow-up
- 2nd Report Science and the RDAs: follow-up
- 3rd Report Science and Treaties
- 4th Report Renewable Energy: Practicalities