

Chapter 6 An ethical problem

Radioactive waste is an ethical issue and CoRWM placed ethics at the heart of its deliberations. Ethical concerns about responsibility for future generations influenced CoRWM's thinking on the choice between dealing with radioactive wastes now or leaving it for future decision. Ethical arguments were also important in defining ideas of participation, partnership and compensation that are the basis for the Committee's proposals for implementation. On the question of new build, a clear ethical distinction can be made between dealing with existing and unavoidable wastes and the creation of new wastes.

1. Ethics are sets of principles or standards concerned with behaviour and well-being. They act as a guide to what is acceptable or unacceptable, what we should do, what is right or wrong, good or bad. Ethics are about how we ought to act in contexts that have significant implications for human and non-human lives and well-being.
2. Radioactive waste is an ethical issue for several reasons. It is associated with nuclear energy, nuclear weapons, the dangers of proliferation and terrorism, all of which raise ethical concerns. Radioactivity impacts unevenly between places and across generations and raises ethical issues of fairness. It is also an ethical issue because its longevity and complexity place it in the realm of both science and values. In making option assessments it is necessary to combine both empirical and ethical knowledge, facts and values.
3. Ethical positions are informed by values and may be stated as principles. The ethical principles of primary concern to CoRWM are those embraced in two of its guiding principles (see Chapter 4). One is the principle of equity. Equity is a core value embedded in Guiding Principle 3, to achieve fairness with respect to procedures, communities and future generations. In choosing options, it is necessary to consider the implications and impacts of decisions for present and future generations. The other key principle is that of sustainability identified in Guiding Principle 4, to aim for a safe and sustainable environment both now and in the future. Concerns about equity, sustainability and safety are at the heart of deliberations about options.
4. CoRWM has therefore put considerable emphasis on the importance of ethics throughout its programme of work. Ethical concerns informed the criteria used in the shortlisting process. During the options assessment phase of the programme, stakeholders and citizens were invited to apply a set of ethical questions as part of their holistic assessment. The Multi Criteria Decision Analysis (MCDA) was a systematic assessment involving a specialist input in which value judgements also played a major part. It was recognised that ethical issues play a role in evaluating the importance of criteria such as safety, security, flexibility and burden on future generations (see Chapter 11).
5. As part of its preparatory work, the Committee held a two day workshop where members were able to engage in ethical deliberations with a panel of ethicists. The contributions of the panel and the discussions at the workshop are reported simultaneously with this Report.¹ The workshop was a significant input to the overall assessment performed by members which led to the strategy for long-term management of wastes that is proposed in this report. Ethical considerations have played a significant role in CoRWM's decision making, both on the best option for the management of radioactive waste, and also on how the option can be successfully implemented.

6. During the discussions at the workshop, some fundamental ethical principles were identified. These included the principles of well-being, of justice and of dignity. Well-being represents a utilitarian approach and emphasises the need to maximise good impacts and to minimise harmful ones. Justice is a distributional principle focussing on the norm of fairness in the distribution of burden. The principle of dignity relates to ideas of autonomy and acceptability to those affected by decisions. In this sense, it is related to the general principle of liberty which emphasises the freedom for people to pursue their lives as they choose. When applied to the problem of radioactive wastes, these principles sometimes reveal conflicting perspectives.
7. The way in which a given ethical principle is applied in practice will often depend on judgements from other branches of knowledge, including science. If, for example, the ethical principle of fairness between generations is prominent, what this means for option recommendations will depend heavily on scientific judgements about the degree of confidence in the long-term safety of geological disposal.
8. While ethics are important they do not provide a simple answer to the question, 'What is the best option?'. Rather, ethical considerations enable us to apply our values to the options and help us to justify our choice by appealing to our value position. It must be said that ethical judgement requires careful analysis and reasoning, not simple assertion or subjective impression.¹
9. Ethics, then, are an integral aspect of decision making. Ethical considerations were prominent in developing CoRWM's thinking in three broad areas: environmental sustainability; intergenerational equity; and intra-generational equity.

Environmental sustainability

10. On the issue of environmental sustainability there are contrasting views. The most commonly articulated is the *anthropocentric* view which focusses on the environment as necessary for human well-being. The *ecocentric* viewpoint emphasises the intrinsic value of Nature in which humans are one species among many. It may be preferable to see these views in terms of a continuum rather than a dichotomy. However, they express different conceptions of sustainable development. Anthropocentric perspectives imply a version of sustainability stressing the efficient use of resources to support human needs and aspirations. Ecocentric views provide an interpretation which stresses the protection of environments and minimising impacts. There is a tendency to adopt an anthropocentric view when considering the impact of radioactive waste.
11. CoRWM's Guiding Principle 4 explicitly embraces 'the natural, as well as the human, environment' in its aim for sustainable development. The MCDA process identified impact on the environment as a separate criterion of assessment. During the public and stakeholder engagement process, environment was rated as one of the most important issues by Citizens' Panels, young people in the Schools Project and by the general public through the Discussion Guide (Chapter 7).

Intergenerational equity

12. Ethical concerns were a central matter in choosing the best option or options. Here the focus was on the broad area of intergenerational equity, more specifically on the question, 'How far should the present generation take responsibility for the impacts of its actions on the future?'. Two contrasting perspectives may be identified. One, expressed by a member of the ethics panel, is that 'responsibility has to extend to the reach of the impact of our actions'¹.

There is no justification for an arbitrary cut off point. An alternative view, which mixes the ethical and the pragmatic, is that we should exercise what responsibility we can whilst recognising that our capacity to do so necessarily will diminish over time. This perspective may also reflect a view that society has greater concern for the immediately following generations, in which it has both influence and interest, than for those in the far future over which it has much less control or concern. There is, thus, a contrast between the view of a continuing responsibility and that of a diminishing responsibility.

13. There are two broad alternatives for the long-term management of radioactive waste. They are, simply expressed, Deal with it Now, or Leave it until Later. These formed the basis of the Committee's ethical deliberations on its preferred options.
14. *Deal with it Now*. This position broadly reflects ethical considerations of justice arising from the belief that those who benefit should bear the burden. It emphasises the responsibility of the present generation to do what it can as soon as it can so that the transfer of burdens to following generations can be minimised. This position tends to favour geological disposal placing no reliance on the ability or willingness of future generations to deal with a problem created by the present.
15. *Leave it until Later*. By contrast, this approach emphasises the principle of liberty, providing the future with the freedom to make its own choices. This comes from a position which recognises both the rights of future generations as well as the responsibilities of the present. It is incumbent on the present to provide information and compensation to enable the future to take responsibility. This view tends to favour continuing storage options with the possibility of retrievability.
16. These contrasting ethical positions, where justice appears to conflict with liberty, were reflected in the conflict between minimising burden and increasing flexibility that became one of the most significant issues discriminating between options in the MCDA.
17. The choice between ethical perspectives and their related preference for storage or disposal is not necessarily straightforward. It must also be recognised that choices may contain elements of different ethical positions. For instance, the principle of liberty may impose burdens on succeeding generations while being concerned with ensuring justice to generations in the far future. By keeping wastes retrievable, the burden persists, but it leaves open the possibility of achieving greater confidence in the safety of disposal. The concept of phased disposal (delaying closure of the repository, see Chapter 15) represents, in effect, a way of trying to meet concerns about flexibility while also minimising burden.
18. Not surprisingly, the ethical panel argued from different ethical perspectives. There were those who favoured continuing storage on the grounds that radioactive waste should not be 'out of sight and out of mind'. It was important to maintain knowledge about potential dangers, to be able to develop new knowledge that would increase safety, to have access to potential resources and to protect future generations.
19. Phased disposal received strong support from the public and stakeholders with whom CoRWM engaged. This reflected the dilemma posed by conflicting ethical principles and the desire to keep options open for a few hundred years while providing a long term solution that reduces the burden on the present and near future generations.
20. By contrast, there is the view that we should dispose of the wastes as soon as practicable on the grounds that we cannot know what technological needs or powers may be available to our successors. The present generation should

remove the burden imposed by its actions from the future. This view ultimately prevailed among the Committee and the arguments are presented in the Overview and in Chapter 13.

Intra-generational equity

21. Ethical concerns were also an important element in the Committee's development of its proposals for implementation. The key principle here is intra-generational equity. In terms of radioactive waste, the problem is how to apply the principle to such issues as siting facilities, compensating communities and ensuring participation in decision making.
22. In terms of siting, radioactive waste facilities are necessarily unevenly distributed geographically. Intra-generational equity requires that actions should not impose an unfair or undue burden on individuals or groups within the current generation. There are different ethical considerations that are relevant in applying the broad principle to siting. Applied as a principle of justice, intra-generational equity might be interpreted in terms of: parity (sharing of the burden among places); proportionality (those who benefit take the burdens); responsibility (putting waste in places which already have it); and vulnerability (avoiding burdening such communities).
23. Viewed in terms of well-being, intra-generational equity suggests a utilitarian perspective, providing the greatest benefit to the largest number through, for example, siting facilities in areas of low population or through avoiding transportation of waste by leaving it where it is. Another approach might be to consider siting in terms of the principle of dignity, interpreted as locating facilities in those places where public acceptability can be achieved.
24. It is clearly not possible to satisfy all the possible ethical criteria that can be applied to siting. But, through its public and stakeholder engagement and in its own deliberations, CoRWM concluded that fairness in siting facilities could only be achieved by the enhancement of well-being and public acceptability based on a willingness to participate and a right to withdraw from a siting process. These principles are embodied in CoRWM's recommendations on implementation in Chapter 17 and in its report on Implementation.²
25. Once a community has expressed a willingness to participate, ethical issues of compensation arise. To an extent, compensation may be a condition of participation but it may be regarded as unethical to use it as an inducement. Such an approach may be seen as targeting the vulnerable. Rather, compensation should be a matter for negotiation and provided as recognition of a responsibility undertaken on behalf of society as a whole. Furthermore, compensation should not be seen in terms of financial reward, but in the broader context of regional development both now and in the future. These considerations led CoRWM to propose the establishment of partnerships between host communities and the implementing body and the provision of packages to ensure the social and economic well-being of the community.
26. Intra-generational equity also bears on the issue of participation in decision making. Here the ethical issues concern how communities are represented and who has the power to take decisions. Ethical concerns focus attention on the rights of communities to participate, on the need for broad participation and on the need for participation to be endorsed by the community. This raises the issue of how participation is made effective and how it relates to democratic decision making by elected representatives. These ethical and political considerations gave rise to much debate within CoRWM. The Committee affirmed the principle that key decisions must be ratified by appropriate democratically elected bodies. There

remained the issue of how host communities, as well as neighbouring and other communities affected by transport of radioactive waste, could secure effective representation. It is fair to say that this and other issues such as how communities are defined, how rights to withdraw are exercised and so on, have to be resolved. These issues of the relationship between participative and representative democracy are matters for further discussion during the implementation process.

New build

27. CoRWM's ethical concerns focussed on legacy wastes and those wastes within the inventory as defined in Chapter 2. During CoRWM's discussions the possibility of new build arose and led the Committee to consider the ethical concerns in relation to wastes arising from a programme of new nuclear power stations. It was suggested that an ethically sound solution for wastes arising from new build might be different from the option that might be ethically acceptable for the unavoidable wastes that were within CoRWM's remit. CoRWM subsequently issued a statement on new build (see Overview) which stressed the need for new build wastes to be separately considered. The ethical issues surrounding new build are discussed in the report of the Ethics Workshop.

Conclusion

28. Throughout its deliberations, including public and stakeholder engagement and the MCDA, ethics played a significant role in CoRWM's decision making. Ethics enable us to deepen awareness and understanding of issues and to explore what should be done and why. They form part of an overall assessment which seeks to integrate different forms of knowledge to reach conclusions that are founded in science, in values and in public trust and confidence.

References

1 Committee on Radioactive Waste Management, "Ethics and Decision-Making for Radioactive Waste", Workshop Report, document 1692, March 2006.

2 Committee on Radioactive Waste Management, "Moving forward: CoRWM's proposals for implementation", document 1703, July 2006.