

LANCASTER  
UNIVERSITY



Project ISOLUS  
Front End Consultation

**Final Report**

Report to the MoD  
CSEC, Lancaster University  
September, 2001

The Lancaster University Front End Consultation Team would like to thank everyone who participated in this consultation.

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## Executive Summary

The Warships Support Agency (WSA) of the Ministry of Defence is undertaking Project ISOLUS (Interim Storage of Laid-up Submarines) to determine the means of managing the radioactive wastes from nuclear powered submarines after they have been withdrawn from service.

As part of Project ISOLUS, the (WSA) commissioned the Centre for the Study of Environmental Change (CSEC) at Lancaster University to conduct a Front End Consultation to ascertain the issues that the public and other stakeholders believe should be taken into account when deciding on the options and site(s) for the interim storage of the wastes.

The Front End Consultation was carried out between January and July, 2001. The Consultation comprised 8 discussion groups, 4 stakeholder workshops, a citizens' panel, and a web site, and was overseen by a Steering Group.

The main areas of recommendation emerging from the consultation were:

1. The influences and responsibilities of those outside the ISOLUS project (including inside and outside MOD) need to be recognised and addressed.  
(*Recommendations 1, 2, 5, 6, & 58*)
2. There is public concern that the involvement of private companies will mean the project is driven by cost and pursuit of profit, rather than safety and it is important that MoD remains in control of the waste. The extent of this concern over privatisation should be brought to minister's attention.  
(*Recommendations 4, 8 & 39*)
3. The public concern about building further nuclear-powered submarines, particularly in the absence of a final disposal route, needs to be recognised.  
(*Recommendation 3*)
4. A decision on Renown project needs to be made as soon as possible  
(*Recommendation 7*)
5. The consultation exercise has been seen as positive step but more must be done to engender trust and understanding. A clear response to the consultation findings, demonstrating how these have been taken into account, is required. More information must be made available – or an explanation given as to why this is not possible – and the next steps in the process must be publicised with more effort made to be inclusive in consultation, recognising local consultations will be necessary when sites have been identified. An expanded Steering Group should oversee consultation, which should be conducted by a third party, and the project should appoint an Advisory Group of interested representatives and impartial individuals. Funding of individuals and expert contributors should be considered.  
(*Recommendations 9, 10, 11, 12, 13, 14, 45, 48, 49, 51, 52, 53, 54, 55, 56, 57, 59, 60, 61, 62, 63, 64 & 65*)

6. There was support for discontinuing long-term afloat storage and storing on land but retention of intact reactors, rather than further dismantling, was preferred. The free release of metals, which could be contaminated, should be avoided. The project needs to build in contingency for delays.  
*(Recommendations 2, 15, 22, 23 & 24)*
7. The fact that there are risks should be accepted and their existence acknowledged. The project must make contingency plans for these risks and the land storage solution must allow for containment of the site. Safety should not be compromised by cost and best possible practise should be sought.  
*(Recommendations 16, 17, 18, 27 & 28)*
8. Public and workers exposure should be minimised and avoided where possible and practices for keeping dosage records of workers reviewed. The same principles should apply to non-radioactive toxic wastes in the reactor. Independent monitoring of the eventual site's security and management should be considered and the principles and practices of regulation publicised.  
*(Recommendations 19, 20, 21, 26, 29, 30, 31 & 43)*
9. While more than one site was recognised as a possibility, the preferred site was one with existing nuclear activity. In selecting a site, MOD needs to address risk of climate change, geological stability, need for expansion of facility and extension of the duration of storage. The site also needs controlled access and should avoid the need for transportation of the waste. In establishing a site, consideration needs to be given to identifying and maintaining the necessary skills base.  
*(Recommendation 32, 33, 34, 35, 36, 37, 38, 40 & 41)*
10. The consultation process should allow for participation of those who cannot speak freely. Similarly, the project should allow for employee dialogue with Regulators and for a 'whistle blower' route to report bad practice.  
*(Recommendations 42 & 46)*
11. Confidence and public acceptability are enhanced if there is independent scrutiny of information, monitoring, management and practice, and of the consultation process itself. The public do not generally consider government agencies to be independent in this respect.  
*(Recommendations 11, 14, 19, 21, 30, 31, 49 & 53)*

Full details of the findings are contained within the Final Report and 16 detailed reports of the consultation activities. These are available on the consultation website at [www.nucsubs.org.uk](http://www.nucsubs.org.uk).

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The MoD’s response to these recommendations should clearly indicate where consultation outcomes have been taken into account, and where not. The reasoning behind plans and decisions should be fully transparent. The response should be in the public domain and easily accessible (for example, on the website, in printed form available on request, and distributed to participants in the Front End Consultation). ..	66
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Project ISOLUS should provide information, or indicate where such information can be found, on areas where the knowledge bases are disputed or uncertain, such as the health effects of low-level radiation, and notify relevant bodies of particular areas of concern raised by consultees.....	70
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The consultation and decision processes should be laid out more lucidly, and be more accessible, with (in as far as is currently possible) a clear timetable of action. It should be clear from the outset of any activities what the objectives of the consultation are, its relationship with and timing within the decision-making process and linked processes, and how the consultation findings will be used. ....	70
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People with local knowledge will need to be included in the consultation team (see also Recommendation 54).....	73
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The next stage of consultation should take place not later than the time at which the Outline Proposals are received. In the meantime, Chief Executives of Local Authorities, and other appropriate bodies, should be informed by the MoD of the decision-making and consultation process (including the process prior to Outline Proposals being received) and its projected timetable. This information should also be posted on the consultation web site and provided to those who participated in the Front End Consultation (see also Recommendation 59).....	74

RECOMMENDATION 64 .....75  
Consideration is given to providing expert advice on consultation and public acceptability, and the means by which this can be done, to potential contractors.....75  
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Once potential sites are identified, consultation techniques should include the provision for people from different sites to meet together to pursue more acceptable solutions. ....75

## 2 Introduction

Project ISOLUS (interim storage of laid-up submarines) is the process by which the UK Ministry of Defence (MoD) will:

“Define, develop and procure a safe and publicly acceptable method for the interim storage of the radioactive material arising from decommissioned submarines.”

The Warships Support Agency (WSA) of the MoD commissioned a Front End Consultation (FEC) to identify what members of the public and other stakeholders think should be taken into account in deciding what to do with the radioactive waste from nuclear submarines that have been taken out of service. The FEC was carried out under contract by independent researchers in the Centre for the Study of Environmental Change at Lancaster University.

The FEC comprised 4 workshops with stakeholder organisations, 8 discussion groups with members of the public in different parts of the UK, a citizens’ panel and a web site consultation. The Lancaster team has been responsible for developing the procedures and for raising and discussing these questions with members of the public. The FEC was overseen by a Steering Group. Details of the reports of each of the consultation activities are given in Appendix I.

The consultation addressed the following four questions:

1. What issues would people like to be taken into account in evaluating storage options?
2. What issues would people like to be taken into account in evaluating potential sites?
3. How would people like to be consulted?
4. For the Steering Group overseeing subsequent stages of the ISOLUS consultation:
  - Who should be involved?
  - What should be its role and remit?

Further consultation is planned for later stages of the project (see Consultation in the next round: the Project Plan, page 70). In the meantime, comments can be submitted to the ISOLUS consultation website at <http://www.nucsubs.org.uk> or to Dr Jane Hunt, CSEC, Lancaster University, Lancaster LA1 4YG.

## 3 Summary of this Report

This report describes the process of the FEC and synthesises the responses. It discusses issues raised, and derives key findings and recommendations. This Final Report is best read in conjunction with the more detailed reports of the consultation activities, which provide a more comprehensive account of the responses, issues and concerns of participants.

The next section of this report describes Project ISOLUS and the problem of storing the radioactive wastes from laid-up nuclear powered submarines. The Front End Consultation is described in the subsequent section.

The second part of the report summarises the findings from the Front End Consultation and derives recommendations from these findings. In section 6, the broader issues raised by the public and other stakeholders are discussed. The wider context is described in section 7. Options are discussed in section 8, monitoring in section 9, and siting, and related issues, in section 10. Issues concerned with contractorisation are raised in section 11, and those concerned with regulation in section 12.

Sections 13 and 14 discuss the public and other stakeholders' views on consultation and the Steering Groups recommendations for the next phase of consultation.

## **4 Project ISOLUS**

### **4.1 Introduction**

In February, 1998, Ministerial approval was given for the WSA to proceed with an in-house study into options for the interim storage of decommissioned nuclear powered submarines (Project ISOLUS). The results of this study were produced in May, 1999, in the report 'The ISOLUS Investigation', which was edited for public release in April 2000, and is available on the MoD website at <http://www.mod.uk/index.php3?page=2579>, via the Consultation Website at <http://www.nucsubs.org.uk>, or from the WSA.

Subsequent to the production of this report, it was decided to undertake a Front End Consultation prior to other stages of consultation. The Front End Consultation was conducted to ascertain public and other stakeholders' views and concerns regarding the interim storage of the radioactive wastes from the laid-up submarines, so that these could be taken into account in planning the next stages of Project ISOLUS.

### **4.2 The Problem**

There are 27 nuclear powered submarines already in existence, of which 11 have been taken out of service and are currently stored afloat at Rosyth and Devonport. Further submarines will be withdrawn from service over the next few years. A further 3 nuclear powered submarines are being built (the Astute Class), and 3 more are planned subject to Ministerial approval.

Until recently, the assumption was that defuelled nuclear powered submarines would be broken up and the radioactive wastes disposed of in a National Deep Waste Repository, anticipated to be available in the early 21<sup>st</sup> century. Until the Repository was available, the submarines were to be stored afloat. However, in 1997 the plans



for a Deep Repository were, at least temporarily, abandoned, and Government policy on radioactive waste storage and disposal is currently being rethought.

The ISOLUS Investigation states that the study was undertaken in response to three factors:

- 1) The expected completion date for a National Radioactive Waste Facility had been delayed, and was not expected until 2040, if at all. This therefore meant that the MoD needed to determine how the wastes would be managed until such a facility is available, taking into account the possibility of further delays and/or changes in Government policy on radioactive waste management.
- 2) Existing afloat storage capacity at Rosyth and Devonport will be filled by 2012 and submarines withdrawn from service subsequently would have no storage berths unless further berths were found.
- 3) The Radioactive Waste Management Advisory Committee (RWMAC), in their 1997 report, had criticised the MoD as being perceived as having ‘no policy’ for the radioactive waste management. This view was supported by media criticism.

The problem is therefore one of agreeing and implementing a means of managing the radioactive wastes from the laid-up submarines. To this end, the WSA established Project ISOLUS, conducted the ISOLUS Investigation and commissioned the Front End Consultation.

### **4.3 The Way Forward**

The MoD intends to examine the findings of the FEC and publish its responses to the recommendations in this report.

The presumption is that contractors will produce innovative proposals for the means of, and location for, storing the wastes, and that the MoD will let a contract for approximately 30 years to a contractor (or consortium of contractors) to manage the wastes. Contractors have been invited to submit expressions of interest in response to a Market Consultation Paper issued by the MoD. The MoD intend to invite submission of outline proposals (ISOPs) from contractors by mid 2002; these proposals will need to take account of the findings of the FEC. Further public consultation will then take place to contribute to the shortlisting of the outline proposals.

Details of the ongoing process of Project ISOLUS, including further consultation, will be published on the website.

## **5 The Front End Consultation**

### **5.1 The context**

The idea that the public should participate more fully and be consulted more extensively in relation to social and environmental issues has taken hold over the last

few years. Particularly in the fields of health, environment and local government, innovative forms of consultation have been developed and used.

The benefits of broader engagement with the public are widely recognised to include better and more responsive decision making and service provision, wider acceptance of decisions, the development of more constructive relationships and better understanding, and a more comprehensive knowledge base.

A number of specific issues and events provided a more specific context for the Front End Consultation. There were repeated references to the depleted uranium issue, which was the subject of extensive media attention in the earlier part of the consultation period. These references usually carried the implication that the MoD response (as reported in the media) was to deny the existence of a problem, and this was a typical MoD response. The problems experienced by Railtrack, and the debate over the future of the London Underground system, were referred to in relation to discussions of privatisation and contractorisation. Finally, the General Election, in addition to limiting the publicity activities that could be undertaken by the MoD, presumably had some influence although it was not referred to directly in any consistent or significant way.

These issues illustrate the way in which the Front End Consultation needs to be considered within its larger context. That is, the issue of the radioactive wastes from laid-up submarines is understood and perceived as part of a wider set of risk issues, is related to these, and cannot be separated from them.

## 5.2 What is a Front End Consultation?

A Front End Consultation is designed to elicit the concerns of the public and other stakeholders so that these can be taken into account in developing decisions. As such, a Front End is fundamentally addressing the issue of ‘framing’<sup>1</sup> by enabling participants in the consultation to construct the problem in their own way. That is, defining what the problem is about, and what is important in how it is addressed, requires public and other stakeholder input in order that solutions should be publicly acceptable. Crucially, a Front End takes place before proposals are developed and provides the framework for those proposals. As such, it can use a number of different techniques, but a key requirement is that these should enable discussion, debate and deliberation, and outcomes are therefore generally qualitative rather than quantitative.

Front End Consultation is increasingly being recognised as necessary in contentious areas such as radioactive waste management. The ‘decide, announce, defend’ model, whereby the public and others are consulted after a decision has been reached, and have little or no input into what should be included in that decision, is seen to have been unsuccessful in reaching implementable solutions. Thus, early and widespread consultation, which identifies public concerns and issues, is seen to lead to more acceptable decisions (presuming, of course, that public concerns are properly taken into account in those decisions).

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<sup>1</sup> This concept is presented in The Royal Commission for Environmental Pollution’s 21<sup>st</sup> Report ‘Setting Environmental Standards’ (2000) Cm 4053 (The Stationery Office, London)

## **5.3 Description of components**

The Project ISOLUS FEC comprised:

### **5.3.1 Discussion Groups**

8 discussion groups were held at a variety of locations, including sites both near to existing nuclear and/or submarine activities, and distant from these. Participants represented a range of demographic characteristics (age, gender, income, household membership, ethnicity, employment etc). 6 to 8 people participated in each group, were provided with information about the submarines and their radioactive wastes, and took part in discussion.

The discussion groups were intended to gain the views of ‘ordinary’ members of the public, who would not in general have contributed to traditional forms of consultation.

### **5.3.2 Stakeholder Workshops**

The four workshops were held in London, Plymouth, Manchester and Edinburgh. Plymouth and Edinburgh were selected to enable groups concerned with Devonport and Rosyth dockyards to participate, and London and Manchester as places with good transport links for other participants. Stakeholders were defined as those representing some form of group, including regulators, the MoD, contractors, local authorities, and local environmental groups. The workshops comprised a presentation on Project ISOLUS and small group discussion.

The stakeholder workshops were intended to bring representatives of groups with different interests together, to generate discussion, and to articulate concerns.

### **5.3.3 Citizens’ Panel**

The citizens’ panel involved 12 ‘ordinary’ members of the public, who met together for four days over two weekends, to examine the issue, become informed, question expert witnesses, and produce a report identifying their key concerns.

The panel was used to enable informed members of the public to consider the issues in depth.

### **5.3.4 Web Consultation**

The consultation website included information on the submarines and their radioactive wastes, an open ended on line questionnaire and a discussion space. Anyone with internet access could contribute their views. A paper version of the material on the website was also available on request, and any letters received were included as responses to the consultation.

The website was used to enable anyone who wished to express a view to be able to do so, within the constraints of the availability of the technology and awareness that the consultation was taking place.

### 5.3.5 Steering Group

A Steering Group was convened to oversee the conduct of the Front End Consultation, review the reports, especially this report, and contribute to the development of plans for the next stage of consultation. However, the role of the Steering Group was not to endorse this report as such, but to provide a review to contribute to quality control of both the consultation process and the reporting of that process.

The members of the Steering Group comprised:

Fred Barker	Radioactive Waste Management Advisory Committee
Andy Elmer	Local Government Association
Rob Gray	Nuclear Installations Inspectorate
Mark Hannon	Decommissioning Manager, Berkeley Nuclear Power Station
Brian Hooper	Project ISOLUS, Warships Support Agency, MoD
Steward Kemp	Nuclear Free Local Authorities
Di McDonald	Nuclear Submarine Forum
Judith Petts (Chair)	Centre for Environmental Training, University of Birmingham

Membership was intended to reflect a range of different stakeholder groups.

## 5.4 Who participated?

The use of different forms of consultation enabled a wider range of people to participate than is possible using only one form of consultation. As above, the design of the consultation was intended to elicit views from different groups, including the general public and more specialised stakeholders.

The numbers of participants in each of the areas of the consultation was as follows:

<b>Events:</b>	
Citizens' Panel	12
(Eight) Discussion Groups	61
(Four) Stakeholder Workshops	58
<b>Online Participation:</b>	
Web Questionnaire	45
Web Discussion	25
Letters Received	22

The total number of participants in the Citizens' Panel, Discussion Groups and Stakeholder Workshops was 131.

The overall total including online participation and letters received was 223<sup>2</sup>.

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<sup>2</sup> This figure does not take account of any double counting, i.e. people who may have participated in more than one consultation activity but are not identifiable as such.

In addition, a petition with approximately 430 signatures was received from the residents of the Loch Ewe area.

### **5.4.1 Accessibility**

The FEC was designed to be both proactive in eliciting views from members of the public who might otherwise not participate, and to enable the participation of anyone who wished to participate, via the website and associated written materials. However, it needs to be recognised that:

- a) some groups and individuals believe they have a particular right to be consulted actively, due to their concerns with the issues and/or particular location,
- b) many people were not aware that the consultation was taking place, but were interested and felt they should have been informed, and
- c) many people do not have access to the internet.

The FEC cannot be said to have fully enabled everyone who wished to participate to do so, although it must be recognised that this aim is difficult if not impossible to fulfil completely.

## **5.5 Timing of the consultation**

The consultation was compromised by the fact that although it was designed as a Front End, several options had already been considered in some detail, and particular sites named in an internal MOD discussion paper aimed at identifying the practicalities of different storage possibilities. The existence of the report 'The ISOLUS Investigation', which was not originally written to fulfil the role of a basic information source for the consultation but which found itself in that position, was problematic, particularly in relation to the sites which were discussed in that report and where, quite reasonably, local inhabitants felt that they should have been informed of the consultation and the decision process.

A decision had been made at the start of the consultation not to focus on any sites other than, to a limited extent, Plymouth and Rosyth (as these are the existing locations of the laid-up submarines), as no sites have been formally identified or proposed. Site specific consultation is proposed for the next round of consultation, when potential sites have been proposed. However, during the consultation period the media represented various sites (particularly Plymouth, Rosyth and Aultbea/Loch Ewe) as either having been selected, or being potential sites. This media coverage resulted in a strong public response from Plymouth and Aultbea (see 10.3.4, Put it in Plymouth, and 10.3.3, Put it in Scotland).

## **5.6 Other methodological comments**

### **5.6.1 Consensus or consultation?**

The methods used were selected in order to enable people to discuss and deliberate over the issues they identified as significant. The framing of the problem was, whilst focussed on the questions stated in the Introduction, otherwise left open.

This suite of methods, however, does not produce clearly defined and articulated conclusions. Rather, it identifies the map of concerns and issues held by participants in the consultation. In some cases, views are contradictory, although in many cases similar issues were raised by different groups and it was apparent that views were widely held.

### **5.6.2 Analysis of responses**

The qualitative nature of the material gathered during the consultation means that the analysis and synthesis of that material, and the derivation of recommendations in relation to it, inevitably requires judgement and interpretation. The reporting of the consultation activities (see Appendix I: Reports produced in this consultation, page 76), which presents extensive direct quotations and statements by participants, provides the means for the reader to assess the validity of those judgements and interpretations.

## THE CONSULTATION FINDINGS

### 6 Framing the Front End

The problem of what to do with the radioactive wastes from nuclear powered submarines was construed very differently by different individuals and groups. Responses illustrated that it can be a management problem, a technical problem, and an efficiency problem; it can also be a political and ethical problem, where issues such as the trust in responsible institutions and whether it is ever legitimate to, for example, expose anyone (not just workers) to increased doses, are primary concerns.

The WSA's responsibility rests mainly in determining a course of action and managing the implementation of that course of action. Many of the concerns raised during the course of the Front End Consultation fall beyond their remit. However, if public acceptance is to be pursued, it is crucial that these concerns are not ignored (see Legitimacy of consultation, page 66). In many cases they represent underlying issues which can be taken into account within the development of Project ISOLUS, although they are often disregarded. In others, they are clearly matters for other authorities, and should be passed to them for attention. It is very clear that the pattern of public concerns does not easily map onto institutional arrangements and responsibilities. In some cases, institutional realignment is necessary to fully take account of public concerns, such as the strong preference for an independent body to develop policy and implementation with respect to radioactive waste management.

#### RECOMMENDATION 1

Consultation findings which fall outside the remit of Project ISOLUS should be passed to the relevant bodies.

#### 6.1 Inside the frame: A technical problem (with a public acceptability problem)

The players primarily visible to the Authority are themselves, contractors, and NGOs who campaign on peace and environment issues. NGOs are external to the existing relationships between contractors and the Authority, usually occupying an adversarial role. Contractors and the Authority have developed a particular framing of the problem, which is dominantly one of concern with the technical plausibility of various options, contractual responsibilities and formulations, and the need for justification in economic terms (a need imposed by government commitments to privatisation, and the economic conditions in the market place). It is important for all players to recognise that this framing – the definition of the ball park and what is within it, and the rules by which the game is played – cannot be completely changed by those responsible for Project ISOLUS, although that does not mean that challenges should be ignored.

Within this dominant framing, other issues are added on as ancillary. Public acceptability, whilst not being an optional extra, is both a catch all for a host of very varied concerns, and separated from technical and management concerns.

What a Front End consultation brings to the fore is that the concerns that commonly get collected under the heading of public acceptability are often very relevant to, or fundamental components of, technical, managerial and economic perspectives. For example, the concern that contractors are compromised by their need to pursue profits, and that, therefore, corners may be cut and best practice not always observed, is one that can and should be addressed within the Project. It is not merely something that can be dealt with by information provision, but implies careful consideration of contractual arrangements, especially with regard to quality assurance.

## **RECOMMENDATION 2**

The ways in which public concerns relate to the practices and motivations of other stakeholders need to be taken into account. Stakeholder practices should be developed in ways that demonstrably address public concerns.

## **6.2 Outside the Frame: a different sort of problem**

A number of issues clearly fall outside the frame of Project ISOLUS as currently conceived. The listing in this section is not comprehensive; many issues are discussed under subsequent headings. However, some very strong messages are apparent and these are presented here. As above (see Framing the Front End, page 23) these concerns should be passed to the relevant bodies.

### **6.2.1 New build**

For very many members of the public, as well as for stakeholders associated with environmental NGOs, there is a high level of concern about building further nuclear powered submarines. There are a number of dimensions to this concern:

- A common sense position that it is foolish to continue producing wastes when there is no way of disposing of those wastes (this position is similarly apparent with regard to civil wastes from power production).
- Nuclear deterrence is no longer required and/or that the UK is in any case a small player.
- If the deterrence capabilities are required, then alternative means of propulsion should be developed and utilised (i.e. nuclear deterrence does not necessitate nuclear propelled submarines).
- The money spent on nuclear submarines could be better spent elsewhere.

These positions are only sometimes associated with the moral position that nuclear weaponry is fundamentally wrong. Many participants accepted a past need for nuclear submarines to provide deterrence, but thought this was no longer necessary. Others accepted that nuclear weaponry may be required, but not that the submarines necessarily needed nuclear propulsion.



Where other uses of nuclear powered submarines were considered (i.e. the uses of those submarines which do not carry nuclear weapons), these uses were seen to be less reliant on or have less or no need for nuclear propulsion. Quite clearly, the main justification (both as seen by stakeholders and the public, and as presented by proponents of nuclear powered submarines) for nuclear powered submarines is their abilities in relation to nuclear deterrence.

These views were put into sharp relief when the question of the wastes were considered. The public view was clearly that, whatever the merits or otherwise of nuclear propulsion and nuclear weapons, it was foolish to continue building nuclear powered submarines when no disposal route for the ensuing wastes is available.

### **RECOMMENDATION 3**

The appropriate bodies should be informed of the strength of feeling against building further nuclear powered submarines, especially in relation to the absence of a final disposal route for the radioactive wastes.

#### **6.2.2 Defuelling and related activities**

Defuelling is accepted by all parties as a considerably more risky activity than the cutting up of submarines and storage of the radioactive wastes. Some participants argued cogently that, although the MoD remit for Project ISOLUS did not extend to defuelling, the concerns of the Project could not be considered in isolation from the rest of the submarine fuel cycle in particular, and the production and use of nuclear submarines more generally. In part, this is because many of the same bodies – in some cases, the same individuals – have much wider responsibilities, and therefore the confidence in the conduct of Project ISOLUS is directly related to confidence in the conduct of other related activities. In part, it is because the radioactive waste from the submarines is part of a much larger complex of decisions and actions, many of which impact more or less directly on the wastes, particularly in relation to continued production and questions of need. In part, too, it is in line with RWMAC recommendations that the MoD should produce a coherent strategy for waste management<sup>3</sup>, which necessarily considers projected waste arisings and management plans more holistically.

#### **6.2.3 Safety not cost**

There was a widespread recognition of a tension between safety and cost. The clearly expressed preference was that safety should not be compromised by cost; the accusation that the Authority would choose the cheapest bid was one expression of this. This relates to the argument between best possible and best practicable means (see below), and the misgivings regarding the use of contractors and PPP.

Some stakeholders presented the position that expenditure on high levels of safety in this area meant a shortfall in funding elsewhere, and that, overall, it was more

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<sup>3</sup> The Radioactive Waste Management Advisory Committee's Advice to Ministers on the Ministry of Defence's Radioactive Waste Management and Practices (July 2001)

appropriate to use limited resources, for example, to increase health care provisions. This argument was largely rejected by the public, who felt that enormous expenditure had been committed to nuclear submarines and that the additional costs were marginal in comparison, and that the cost of high levels of safety for waste storage was part of the overall cost of having these submarines and should be recognised.

#### **6.2.4 Mistrust in contractors (and the MoD, the nuclear industry...)**

A high level of mistrust of responsible institutions and others, and in the current and historic arrangements for waste management, was expressed. The point here, in relation to framing, is that this mistrust is related to the perceived interests of the particular groups, and the relationships between them. The MoD are seen as secretive and pursuing their own agenda. Contractors, for example, are perceived as profit driven, whilst regulators are seen as powerless, in cahoots with or at least siding with those they are regulating, overly constrained by their remits, and biased towards the status quo. Lay experience – of Railtrack, of Sellafield and the Japanese fuel – contributes to this now widely recognised disjunction between the populace and the state.

In terms of the privatisation of services, with consequent issues regarding contractorisation, this mistrust is seen as reflecting a high – and increasing – level of concern about the movement of responsibility and action from the public sector to the private sector. Whilst government institutions are similarly mistrusted, they are at least seen as having to act in the public good rather than being driven by profit motivation. These concerns are also linked to a rejection of the commodification of issues – such as health and wellbeing – where it is felt to be inappropriate to judge on the basis of cost, and that decisions should be made on ethical grounds. One example of this is the way in which the consultation was welcomed as being ‘the right thing to do’ rather than being assessed in terms of the relative merits of this allocation of resources.

### **RECOMMENDATION 4**

Further action and decisions need to be clearly justified in terms of their ethical premises and principles, with cost being subsidiary to this.

#### **6.2.5 International issues**

Current international agreement is that radioactive wastes should be managed and disposed of in the country of origin. However, public and stakeholders repeatedly articulated the view that radioactive waste is an international problem, and should be dealt with internationally. With particular regard to the submarines, there were several strands to this argument:

##### **6.2.5.1 Knowledge and responsibility**

- The Russians were seen as in need of international assistance in dealing with their submarine wastes

- The UK was seen as having a responsibility to assist those countries which have less developed technologies or are economically unable to deal with their wastes
- The UK could become a world leader in radioactive waste management technology
- International sharing of knowledge and skills was seen as only sensible
- The existence of other countries with nuclear powered submarines means that the wastes are a global rather than national problem
- The use of submarines to maintain ‘peace’ at a global level similarly means that the wastes are a global responsibility.

### 6.2.5.2 *Siting*

The possibility of an international site or site(s) was seen as preferable by some people, either because

- Britain was seen as a small and crowded island with no suitably remote sites, or
- There may be a site or sites available globally which is better, in some way, than any available in Britain
- The US was seen to have an available site at Hanford, which is both better than any site in Britain and where an additional 27 reactor compartments were a marginal addition.
- however, international equity was seen to preclude ‘dumping’ wastes in less developed countries.

## RECOMMENDATION 5

Relevant bodies should be informed of the strength of feeling regarding the need for international collaboration, and public information on the collaboration which is taking place should be available.

# 7 Context

## 7.1 Radioactive waste and the public

Radioactive waste is clearly a subject which raises high level of public concern. In part, this is due to associations with radioactivity (dangerous, invisible, cancer-causing, secrecy, weapons<sup>4</sup>). Waste, too, has negative connotations, even if these are not as directly threatening. Whilst it is laudable that the UK public appear to have accepted the premises of waste minimisation as a fundamental issue in waste management, this often conflicts with existing practice and the existence of wastes. The combination of ‘radioactive’ and ‘waste’ is to provide a sort of mutual amplification of the negative resonances of each.

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<sup>4</sup> J. Hunt & P Simmons (2001) Mapping Public Concerns: A Report to Nirex (<http://www.nirex.co.uk/inews.htm>)

## 7.2 Nuclear submarines and the public

It is striking that nearly all the imagery associated with nuclear (and other) submarines had negative connotations. There is a strong association in the public mind between nuclear powered submarines and nuclear weapons; related to this are images of the submarines as big, black, dangerous monsters lurking secretly in the deeps of the ocean. Perhaps surprisingly, there was very little apparent confusion between nuclear powered submarines and submarines carrying nuclear weapons. Instead, it was clear that, in the public mind, the association between the two is reflected in a belief that the need for nuclear powered submarines is dependent on the continuation of a policy of nuclear deterrence. That is not to say that nuclear deterrence is seen to necessitate having nuclear powered submarines, but that the nuclear power submarines are only necessary due to the policy of nuclear deterrence.

The ritual and symbolic nature of waste management activities in relation to this very particular form of radioactive waste should not be overlooked. That is, it needs to be clearly recognised that the way that people feel about the submarines and their associated wastes generates its own needs in terms of the ways those wastes are managed. One manifestation of those needs is in the requirement to bring into the ‘light’ knowledge about the submarines, to deal with the negative associations of secrecy which are not just to do with requirements for openness and transparency, but also to do with a shared cultural sense of the ‘wrongness’ of secrecy and submarines.

## 7.3 UK radioactive waste policy

A repeated issue among stakeholders was that the management of the submarine wastes could not be considered separately from the development of UK radioactive waste management policy. This has the implication that Project ISOLUS should not move forward until UK policy is established, which is problematic in terms of the anticipated timescales of each. However, interim land storage does not foreclose other currently identified long term management options, and no argument was put forward in the consultation that Project ISOLUS should not proceed. The move to interim land storage and away from early disposal was not raised as a policy issue in itself, but may underlie the concerns of some stakeholders as it creates *de facto* policy

The closure of Drigg was also foreseen by some, with the recognition that a new national low level disposal site is likely to be required within the timescale of Project ISOLUS, and that this could have (unspecified) implications for ISOLUS.

A possible radical rethinking of government policy on radioactive waste management could also have implications for any decisions taken on the management of the submarine wastes. Although the current range of perceived options are consistent with the interim (land) storage of the wastes, the development of other options is not impossible. Additionally, should the government decide, for example, that there should be a single national site for the storage of ILW, this would have obvious ramifications. The point here is that in the absence of clear government policy, Project ISOLUS needs to maintain the flexibility to respond to forthcoming decisions.

Given that a national repository is unlikely to be available until at least 2050, if at all, and given that the storage options under consideration will allow wastes to be packaged for disposal if a repository becomes available, the choice between cutting up

the reactor compartments and packaging the wastes, and leaving them intact, is related to the level of confidence that any final repository will not require subsequent repackaging before disposal. This is considered in more detail below.

The RWMAC report (see note 2) on MoD radioactive waste practices recommends “that MoD should produce and publish a clear statement of its strategy for the management of the radioactive wastes in its ownership.” The integration of Project ISOLUS into such a strategy appears to be an appropriate means of enabling coherence both within the MoD, and between the MoD and national policy.

In the meantime, it seems only sensible for Project ISOLUS to establish and maintain a relationship with the appropriate government bodies and closely monitor the development of radioactive waste policy, reviewing the implications of this particularly prior to taking decisions.

## **RECOMMENDATION 6**

Project ISOLUS should establish and maintain relationships with government bodies involved in the development of radioactive waste policy, closely monitor the development of this policy and assess its relevance for Project ISOLUS.

### **7.4 The BRDL proposal**

Concurrent to the consultation period was the consideration of the authorisation of BRDL’s proposal to cut up the Renown at Rosyth and package the wastes from the reactor compartment. Stakeholders made repeated reference to this proposal.

A commonly expressed view was that it was inappropriate to proceed with the BRDL proposal either in advance of the consultation outcomes or at all. These people argued that if, as the MoD stated, no decision had been made, then it was unnecessary and pre-emptive to proceed with cutting up one submarine. Cutting up the reactor compartment was seen as inherently more risky than leaving it intact, and should not be undertaken without very good reason.

However, there were some who argued that proceeding with the proposal would yield information on the method of cutting up reactor compartments, which would enable this option to be more comprehensively assessed. These people stated that these benefits should be pursued while the skilled workforce at Rosyth was still available. Proceeding with the proposal would also provide employment, and thus maintain the skilled workforce at Rosyth.

The uncertainty surrounding the proposal was counterproductive in generating constructive dialogue, giving rise to a sense that the MoD were not being as open as they claimed.

## **RECOMMENDATION 7**

A clear statement on whether the BRDL proposal will proceed or not should be made at the earliest possible opportunity.

### **7.5 Responsibility**

Responsibility for the waste was attributed to:

- The Government – as they had been responsible for decisions that meant the waste had been produced
- NATO – as the nuclear submarine fleet was part of NATO
- The MoD – as they are clearly institutionally and legally responsible
- Everyone – as we had all benefited from nuclear deterrence or because we generally share responsibility for problems which affect us all
- Not us – as we didn't sign up to building the submarines in the first place, and/or we object to the use of nuclear deterrence

The importance of the attribution of responsibility in relation to public acceptability is that the public will be more willing to accept decisions, particularly in relation to siting, if there is a greater sense of shared responsibility. This sense of shared responsibility will be enhanced by openness and a greater trust between the involved parties.

## **RECOMMENDATION 8**

Openness and trust should be pursued by the MoD.

The specific responsibility for the waste in terms of who will be directly 'in charge' of it is considered in relation to contractors and the MoD, below.

### **7.6 Trust and Relationships**

One of the premises of consultation, especially when it includes dialogue between stakeholders, is that different parties gain a better understanding of the views, arguments and positions of others. This, it is argued, is a necessary basis for moving forward, in part through the development of relationships between previously antagonistic parties.

It is clear from this consultation that various assumptions are made by different groups about one another. For the sake of clarity, these are presented simply here as the MoD, the public, and contractors; this is not meant to imply that these are the only significant groups nor that perceptions are homogeneous within these groups, but to give an indication of dominant perceptions that might obviate against, or be useful in generating, constructive dialogue.

### **7.6.1 What the public think of the MoD**

The public perception of the MoD was of a secretive organisation who went their own way regardless of the concerns or interests of anyone else. The MoD were seen to close ranks and deny the existence of problems (the DU controversy gained substantial media coverage in the early part of the consultation period). Thus, the MoD were not seen as having the ideal characteristics of an organisation that could be trusted by the public to manage the wastes acceptably.

More positively, the MoD were seen as disciplined and capable of good organisation, and were also seen as a more appropriate body to be responsible for managing the wastes than contractors.

### **7.6.2 What the public think of contractors**

The strongest expressions of mistrust came in relation to contractors, who were seen as fundamentally compromised by their necessity to prioritise profits. This brought them in direct conflict with the strongly articulated position that safety should be prioritised over costs.

Contractors were also associated with privatisation, and the failures associated with the British railways.

### **7.6.3 What the public think of the nuclear industry**

Although this consultation was not geared towards addressing issues of the nuclear industry more broadly, it is apparent that the public and many other stakeholders view the issue of the submarine waste as being firmly located with issues to do with the nuclear industry more broadly. Where reference was made to the nuclear industry, this was generally in terms of a secretive, untrustworthy industry which frequently made substantial mistakes. There was little confidence in the nuclear industry generally being competent to manage the wastes.

### **7.6.4 What the public think of the Regulators**

Both the Environment Agency and the Nuclear Installations Inspectorate came in for some criticism, although they were seen as essential organisations for checking that safety limits were not breached. It was thought that regulators were sometimes too lenient or not impartial, supporting the ? interest rather than the public interest (see Regulation, page 58)

### **7.6.5 Lay Experience**

Participants were clearly drawing on shared experiences in reaching these positions in relation to the MoD and contractors. As well as press coverage of relevant issues prior to and during the consultation period, many people had direct experience of working in the nuclear industry, including within the nuclear submarine industry. More generally, many people's experience of the privatised industries (especially health and transport) has been negative, and that experience has led them to mistrust privatisation in any manifestation.

### **7.6.6 What some contractors, MoD and other stakeholders think of the public**

Comments were made by stakeholders which represented the public as homogenous and often misinformed or misled. This is a clear example of what is known as the ‘deficit model’, whereby the public are assumed to perceive and respond to risks in the way that they do because they lack adequate information. If properly ‘educated’, so the story goes, the public will then come to accept the risks in the same way that some other stakeholders accept them.

Although information is clearly a crucial component of both engendering public acceptability, and consultation more generally, to view public views and concerns solely in terms of misinformation is misleading. The public understand risks in very different ways to professional risk assessors, and one might as easily argue that it is the professionals who need to learn how the public see the risks. That is, the public views have their own basis and rationality, and are often premised on deeply felt moral positions. Public views must be respected as legitimate, or public acceptability is an impossibility.

There was clear evidence in this consultation that this is becoming appreciated more widely, with many stakeholders, from many different sorts of organisations, stating that public concerns were valid, or otherwise indicating their recognition of these issues.

#### **RECOMMENDATION 9**

Understanding public views and respecting their legitimacy should be encouraged at all levels; decisions should clearly demonstrate this respect and that public concerns have been addressed.

### **7.6.7 Summary: mistrust and antagonism**

The combination of the MoD, private contractors and the nuclear industry represents an alliance of three groups which is perceived by the public and other stakeholders to be secretive, acting in its own interests rather than the common good, and willing to be dishonest. Sometimes, criticism was levied at regulators. All institutions were criticised for failing to identify and solve safety related problems.

The requirements commonly acknowledged to be necessary to engender trust between institutions and the public – and hence acceptability of those institutions’ actions - are openness, transparency and accountability. To this can be added independence, integrity, honesty, and a motivation to act in the common good.

It would appear that the groups mainly responsible for managing the submarine wastes might well have some way to go to gain the trust of the public. However, the welcoming and positive perception of the Front End Consultation suggests that consultation is one method for improving perceptions of at least the MoD.

#### **RECOMMENDATION 10**

It is recommended that the MoD recognise that consultation of itself can engender more positive relationships.



## 7.7 Knowledge and trust

One of the constantly reiterated themes of the consultation was that information was not made public or accessible, and that information was largely in the control of a handful of institutions, none of whom were themselves trusted. That ‘they would tell you only what they want you to know’ was a repeated comment.

Perhaps the most telling example of this came from a discussion group, who made the point that the reactor compartments at Hanford, which have remained uncovered so that satellites can confirm that these submarines have indeed been taken out of service, might not be reactor compartments at all but mock-ups – and that there may never actually have been as many submarines in the first place as stated, but that misinformation on the total numbers of submarines was part of a policy of claiming greater military force than actually existed.

To the lay person (and perhaps to some experts) this is a plausible interpretation of the available evidence. Although presented with humour, the example captures the sense that information from official sources – particularly the MoD with their reputation for secrecy and misinformation in the name of national security – cannot be trusted, and that the direct evidence available to the public to confirm official pronouncements is very limited. This leads to demands for ‘checking’ by independent third parties who are trusted to be acting in the interests of people and the environment, and is thus one reason behind the strong requirement for ENGOs to have such a role within Project ISOLUS, as the public often perceive ENGOs to be motivated by concern for the environment.

### RECOMMENDATION 11

Bodies who are widely seen to be acting in the interests of people and the environment should be enabled to provide authority to information through their review and verification of that information (see also Recommendation ? and Recommendation ?).

#### 7.7.1 Openness

Another aspect of the relationship between knowledge and trust is that, although respondents repeatedly required that information be placed in the public domain, they were not generally aware of the quantity of information that has been made public in recent years (particularly as a result of European legislation providing access to environmental information). Publicising the fact that this information is available may go some way to generating trust and confidence in the responsible organisations.

However, the lay public do not tend to recognise information as being public if they are unaware of its whereabouts, or if it is incomprehensible to them. Thus, there were repeated requests that information should be made available in a way that was accessible, both in terms of its location and its comprehensibility. This obviously generates a number of difficulties – that much information cannot be simply translated into plain English, there is an enormous and ever-growing quantity of information potentially available, and what is accessible to one group may not be accessible to another, amongst others. This is a problem that many institutions are currently

addressing, and the MoD may well benefit from reviewing approaches being developed elsewhere. Certainly, the problem of information is central in environmental and other disputes, and requires further attention.

Openness should not be narrowly translated as meaning only the provision of information, but also including the ways in which this information is provided, and the ‘body language’ of those providing it. Thus, if there is a clear willingness to answer questions, provide information, and make clear the reasons why some information cannot be provided, this too is likely to generate greater trust and confidence.

## **RECOMMENDATION 12**

The MoD should review approaches to information provision being developed in other agencies, and considers ways of providing more publicly accessible information.

One obvious mechanism to utilise in relation to particular sites is local media, as well as other local networks. The local press was commonly put forward by the lay public as one appropriate vehicle for communicating with the public in specific geographical areas, with the repeated suggestion that large advertisements would achieve the dual purpose of communication without journalistic re-interpretation or misrepresentation.

## **RECOMMENDATION 13**

The MoD should specifically consider the ways in which the local media can be utilised in relation to consultation at specific sites, and seek out other local information channels for similar use.

### **7.7.2 Technical details of the submarine wastes**

That the technical details of the submarine wastes should be made public was seen as a basic requirement, accompanied by the statement that although the need for national security, and hence a degree of secrecy, was acknowledged, there was no apparent reason why information on the wastes should not be made public. Specific requirements in this respect were that the location of the wastes, and monitoring results, were public knowledge.

The more detailed argument over technical information is that the design of the reactor and ancillary equipment is required to be public in order that statements regarding the makeup of the wastes and the provisions for their management can be confirmed independently. Such data also enables a realistic and publicly justifiable safety case and off-site safety plan to be developed.

Such details are currently not public on the grounds that it is possible to derive from them the operational capacity of the submarines, and because an existing treaty with the US negates this possibility. However, should (as is currently the case) such details not be made public, or at least made available for independent expert scrutiny, then this issue is likely to arise more forcefully in later stages of Project ISOLUS. This problem

should be resolved when the new Radiation Preparedness and Public Information Regulations (REPPIR), with which Project ISOLUS must comply, come into force in 2002.

## **RECOMMENDATION 14**

Serious consideration should be given to ways in which further details of the submarines, relevant to all aspects of the interim storage of the radioactive wastes, can be made public or made available for independent expert scrutiny. MoD compliance with REPPIR should be publicly stated. Where information cannot be made available, the reasons should be clearly and publicly explained.

## **7.8 Intergenerational equity**

The principle of intergenerational equity is well established as part of a commitment to sustainable development. Radioactive waste management was clearly recognised as having significant intergenerational dimensions, which imply an ethical responsibility to deal with the wastes now. However, this was represented in two quite different interpretations of what this meant in terms of current action:

### **7.8.1 Act now**

One school of thought argues that the responsibility to act now means going as far as is currently possible. In practice, this means cutting up the reactor compartments and packaging them for long term storage or disposal. This argument is supported by the contention that the necessary skills and technologies may be lost in the future. In the civil nuclear energy industry, this translates as early dismantling of reactors and return to green field sites. ‘Act now’ also implies proceeding rapidly to final disposal.

### **7.8.2 Leaving options open**

The second school argues that as we do not currently have a final solution for radioactive waste disposal, we should not foreclose options for future generations, but should proceed to try and develop a solution. In practice, this translates as storing the reactor compartment intact. This argument is supported by the fact that radioactive decay will reduce worker doses and the risk of environmental contamination in the event of cutting up the reactor compartment at a later stage (although others argue that the use of robotics means workers should not be exposed), and the point that technology may advance to provide better solutions in the future.

These two positions contain somewhat different assumptions about:

- Whether technology (and societal capability) will advance or be lost: this is unforeseeable, although obviously provision can be made now in terms of training and research agendas etc. to influence the generation or loss of technology and skills in the future.
- The extent to which the obligation to future generations assumes that their preferences will be similar to ours: this too is unknowable

- Whether current options are acceptable (in this case, the option of cutting up the reactor compartment): this point thus remains as the basis on which to make current decisions, and the preference exhibited in this consultation is that the reactor compartments should not be cut up at the present time (see Options, page 40).

## RECOMMENDATION 15

The consideration of intergenerational equity lends some weight to the preference for leaving reactor compartments intact and this should be taken into account.

### 7.9 Nature of the technical problem

The technical difficulties of cutting out the reactor compartment are widely recognised as minimal, and well within current technological capabilities, by many stakeholders.

The difficulties of cutting up the reactor compartment are seen as greater, although within current technical ability. The lay public and other stakeholders see this as inherently more risky (especially to workers) as it involves the manipulation of radioactive materials.

The provision of a weatherproof, monitorable store is not seen as presenting any technical problems.

### 7.10 Nature of the risk

Stakeholders from the nuclear industry, the MoD and regulators generally conceive of the risks from the nuclear industry as manageable. The point that the submarine wastes are not volatile and cannot become critical is seen by this group as meaning that the wastes are relatively unproblematic. The risks from dismantling and storing the submarine wastes are well within the boundary of risks that are routinely managed and accepted elsewhere in the industry. Further, the risks, when conventionally assessed, are minor compared to risks that the public are deemed to accept.

The public and other stakeholders, however, tend not to think in terms of comparative risk, risk assessment, or 'risk' as defined by professional groups. Instead, the public are concerned with what might happen, rather than the probability of that happening – but more than this, extend beyond the frame of risk assessment to ask whether it is necessary to undertake the activity giving rise to this risk at all. The answer to that question of 'need' in this consultation (as in other studies) has been that the activity (nuclear propulsion of submarines) is not a necessity.

For many people, therefore, the point that the submarine wastes are comparatively benign is irrelevant – the wastes are still, in an absolute sense, 'horrible'.

A number of well established findings of studies on public perceptions of risk are evident in this consultation – particularly that the public:

- Are less willing to accept involuntary risks imposed by external bodies

- Differentiate between collective and individual risks
- Tend to estimate familiar risks as lower than unfamiliar risks
- Are more concerned with ‘worst case scenarios’ than average risks (i.e. magnitude has a considerably greater weighting than probability)

A further relevant finding, which seems specific to radiological risks, is a growing concern with cumulative risks. This is the point that, for example, living near one nuclear site is risky, and living near two nuclear sites is twice as risky. This translates into the argument that if a community already hosts one nuclear activity, it should not be asked to host another. Cumulative risk is reflected in recent regulatory recognition of the need to assess radiation doses from all sources collectively when performing risk assessments, rather than only examining them individually.

There was general agreement among stakeholders that the risks were relatively low, in comparison with other nuclear activities. However, the lay public tend to respond to all radioactive wastes as highly dangerous, in part, as above, because they are ‘horrible’, but in part because they are responding to the whole trajectory of activities which radioactive waste represents.

## **RECOMMENDATION 16**

Although assessed as relatively low, the risks associated with submarine wastes should not be presented as insignificant; this is likely to be counterproductive in terms of generating public acceptability.

### **7.10.1 Risks outside the frame**

As discussed above, one way of moving outside the risk assessment framework is to consider the need for the risk producing activity, and this is very apparent in the way many people think about the risks of the radioactive wastes from nuclear submarines.

Another way of thinking about risks outside the frame, related to this ‘need assessment’, is to consider the comparative risks of having nuclear submarines or not having nuclear submarines. People discussed this generally in relation to deterrence, and many stated that they saw the risks of having submarines (potential for accident, waste management, making places into targets) as greater than not having them, particularly in the context of the end of the Cold War.

### **7.10.2 So is it safe?**

All stakeholders, and many members of the public, agree that 100% safety is not achievable. In a memorable interchange, one discussion group identified this as the 0.1% chance of becoming unintentionally pregnant. That ‘accidents happen’ was widely recognised. That ‘It could be you...’ was less significant; the point was that accidents happen to someone, not necessarily that they impact upon particular individuals.

Nuclear industry bodies, however, as described above, tend to see this residual risk as manageable, and thus that the wastes (and other nuclear activities) are sufficiently

safe: that the risk is acceptable or ‘tolerable’ and this equates to safety (or ‘safe enough’).

But for other stakeholders and the public, this does not equate to safety: the residual risk may have consequences sufficiently profound to mean that the activity cannot be described or accepted as safe. As above, this is translated to mean that the activity should not be undertaken unless there are very strong reasons to take that risk. Given that the wastes exist, however, the argument for ‘best possible’ practice (rather than best practicable option) is reflected in the widely articulated requirement for management that is ‘as safe as possible’, i.e. that everything that can be done is done to ensure the minimisation of risk.

## **RECOMMENDATION 17**

Public acceptability will be enhanced the more ‘best possible’ practice is utilised (rather than best practicable means), and thus best possible practice should be pursued and not be constrained by cost, unless a robust case for doing otherwise can be publicly justified.

### **7.10.3 Risk, safety and uncertainty**

Another dynamic of the safety/risk discussion is that trust in official stakeholders is further undermined when claims of ‘safety’ are made when residual risks exist. That residual risks will always exist is apparent in the widespread recognition of inevitable uncertainties, indeterminacies and ignorance. Several clear statements were made that there is a preference for such uncertainties to be identified, and that the claim that ‘the best possible is being done (even though this can’t guarantee absolute safety, given uncertainties and other contingencies)’ is more acceptable than the statement that ‘this is safe (trust us)’ – and generates more trust and respect for the responsible agency.

Openness regarding residual risks and uncertainties has traditionally been avoided by risk-managing agencies on the grounds that the public will be unable to comprehend them, and will get unnecessarily concerned. This patronising stance is in itself not conducive to engendering productive relationships. Moreover, evidence from this consultation and other studies strongly indicates that the public are more than willing to engage in a more mature debate about the acceptability, or otherwise, of risk and uncertainty.

## **RECOMMENDATION 18**

Residual risks and uncertainties should be acknowledged in communication activities, and judgements about them debated and justified.

### **7.11 Worker doses**

The exposure of workers to radiation is seen as both unacceptable and normal practice. Positions were that worker doses:

- Shouldn't exist – no one should be exposed to man-made radiation
- Were not justifiable at levels higher than public dose limits
- Were safe enough – no additional effects had been identified
- Were not safe enough – possible additional effects had not been sufficiently researched
- Were acceptable by those undertaking the work, who received financial compensation
- Were not acceptable to those undertaking the work, who were sometimes coerced.

Worker dose was also an area where various statements were made regarding exposure of workers above the limits, poor working practice, and failures in recording doses, maintaining records, and making these available to other medical practitioners.

## **RECOMMENDATION 19**

Recording and record keeping practices in relation to worker exposure to radiation should be independently reviewed (see also Recommendation 30).

### **7.12 Public doses**

A related concern was that of doses to the public. Here, the contention is that dose limits are too high and that exposure of the public to man-made radiation results in unacceptable effects. Some participants were familiar with the arguments concerning the effects of low-level radiation; others argued from the comparatively straightforward principle that any exposure was worse than no exposure.

The clear preference is that doses, to both public and workers, should be minimised and avoided where at all possible.

## **RECOMMENDATION 20**

Doses to the public and workers should be minimised and avoided where at all possible. Records of doses received should be in the public domain.

### **7.13 Other toxic materials in the submarines**

Respondents to this consultation did not have their attention drawn to the non-radioactive hazardous substances in the submarines, and were told that the remainder of the submarine (outside the reactor compartment) was largely uncontaminated. There was some feeling among stakeholders that this might be a deliberate omission, in line with the view that attention was deliberately being diverted from bigger problems. The problems of the toxic substances in the submarines are significant, and it is plausible to derive the case that the same principles that were articulated in relation to the radioactive wastes: containment; minimisation of exposure of workers, the public and the environment; caution; etc are relevant.

Had the toxic substances and radioactivity outside the reactor compartment been discussed more extensively, it is likely that this would have added support to the argument for keeping the reactor compartment intact, in relation to the clearly stated principles of containment and the minimisation of worker exposure.

## **RECOMMENDATION 21**

Where options and choices that have implications for the management of the toxic substances within the submarines are considered, similar principles to those raised in relation to radioactive wastes should be applied. Information on the toxic substances contained in the submarines should be publicly accessible, especially at sites proposed for dismantling the submarines

## **8 Options**

The proposal to store the submarine wastes on land for an interim period was broadly welcomed. The options that were most discussed were the pros and cons of storing the reactor compartment intact, or cutting it up and storing the packaged wastes. These are closely related to arguments about the interpretation of intergenerational equity. The overall preference was for storage intact.

### **8.1 Storing the Reactor Compartment Intact**

The main arguments for storing the reactor compartment intact were:

- To keep future options open
- To take advantage of radioactive decay prior to longer-term solutions which could include cutting up the reactor compartments
- Because workers would not be exposed to radiation when cutting up the compartments
- To maximise the containment of the radioactivity (e.g. through not contaminating tools, or creating discharges into the environment)
- Because the sealed reactor compartment would provide a container superior to Nirex boxes
- To take advantage of possible future technological advances

### **8.2 Cutting up the Reactor compartment**

Arguments for cutting up the reactor compartment were:

- To do as much as can be done with current technology
- To facilitate transport
- To enable possible storage on a wider range of sites
- To gain knowledge
- In case skills and technology are lost in the future



A preference for this option was sometimes accompanied by the condition that robotics be used to cut up the reactor compartment, so that workers were not exposed to radiation.

### **8.3 Free release metals**

The argument for containment of the wastes was repeated in concerns raised regarding the release of metals from other parts of the submarine. Of particular concern was the practice of ‘diluting’ metals with very low levels of contamination with uncontaminated metals for entry into the scrap metal market. The potential for metals with very low levels of contamination to be recycled into, for example, domestic appliances, was seen as unacceptable. Moreover, this practice was seen to be in contradiction with the very broadly agreed principle of containment, rather than dispersion, of the radioactivity.

## **RECOMMENDATION 22**

Metals contaminated with very low levels of radiation should not enter the scrap metal market; a policy of ‘dilute and disperse’ is not acceptable.

### **8.4 Afloat storage**

The majority of respondents felt quite clearly that afloat storage was not acceptable, due to the corrosive effects of seawater and the point that, if leakage did occur, it would be rapidly dispersed through the marine environment. A further repeated concern, reflecting the very high significance given to monitoring, was that storage afloat meant that monitoring was more problematic. Should any problems occur, there could be a need for a rapid response and it was not clear resources were available for this.

A small minority believed there was no problem with continued afloat storage, and thus that the whole of Project ISOLUS was unnecessary; further berths, they felt, could be found relatively unproblematically. A further minority believed that the problem with afloat storage was one of public perception, but that this negative image meant that land storage was required.

Afloat storage also raised concerns regarding the shortage of facilities available for defuelling and other decommissioning activities. That Valiant was still fuelled as facilities had been in use for other purposes was widely regarded as unacceptable. Certainly, contingency plans and particularly, extra time, to deal with unforeseen events or limitations due to other demands on these facilities need to be included within the Project.

## **RECOMMENDATION 23**

Afloat storage should be discontinued.

## **RECOMMENDATION 24**

Contingency plans for dealing with delays and limitations of access to necessary facilities need to be considered, so that situations such as that pertaining to the Valiant do not arise.

### **8.5 Disposal at Sea**

The majority believed that disposal at sea was not acceptable due to the dispersion of any contamination and the difficulties or impossibility of monitoring.

Stakeholders generally did not even consider the option as it is banned under the OSPAR Convention, although for the public this was not seen as a particular issue, as 'laws can be changed'. Some stakeholders pointed out that the current ban expires in several years time. For a small minority of stakeholders and members of the public, disposal at sea in deep ocean trenches remained the best option, there being a feeling that the deep sea was as remote from humans as it was possible to get, that any effects would be on sea life which is not as important as humans, and that in some way the deep ocean is the natural final resting place of the submarines.

### **8.6 Storage and disposal**

Throughout the consultation there was considerable conflation of the ideas of storage and of disposal of radioactive wastes. In relation to Nirex's current development of the concept of a retrievable underground repository, and the slippage in terminology that implies in relation to a facility built for both storage and disposal, this actually reflects current thinking to some extent. The conflation also reflects the recognition that a storage site becomes a disposal site if no further action is taken, and concerns about what sort of commitment was being given by a community who agreed to host a store in terms of the lifetime of that store and volume of wastes to be accepted.

The conflation of the terms also signifies that for many people there is no real difference between the concepts: when the wastes are physically present in a location, the question of whether this is storage or disposal becomes irrelevant. Thus, although it was repeatedly pointed out that the Hanford site is a disposal site, this was not taken up, as it makes little difference (certainly within the timescale of a human lifetime) whether this is storage or disposal: the wastes are present.

#### **8.6.1 Storage pending technical development**

Many stakeholders and members of the public were strongly supportive of the idea of storing the wastes for an interim period pending the development of a more satisfactory solution. Thus, the basic premise of interim storage appears to be acceptable.

## **RECOMMENDATION 25**

Project ISOLUS should proceed with developing interim storage on land.

## 9 Monitoring

### 9.1 Radiological Monitoring

There was a very strong feeling that the wastes should be extensively monitored; here, the public view was quite clearly in favour of best possible practice. Monitoring was seen to be necessary to ensure that if (when) anything went wrong, it was rapidly identified, and remedial measures taken.

The level of monitoring required may well be beyond regulatory requirements. Participants were keen that wastes should be continuously monitored although it is not clear what this requirement means in practice; lay participants are unlikely to be able to specify in more technical terms what would suffice. However, certainly some form of monitoring of the wastes themselves on a continuous basis which would enable immediate attention should leakage occur would be appropriate to meet concerns about leakage and contamination.

#### **RECOMMENDATION 26**

Continuous monitoring of the stored wastes should be undertaken.

#### **9.1.1 Responding to monitoring**

The requirement for extensive monitoring carries with it a requirement to be able to respond rapidly and effectively should monitoring uncover any problems or the likelihood of problems.

The lay public showed a strong preference for wastes (whether intact reactor compartments or packaged wastes) to be stored inside a store which could be sealed, should some level of contamination occur.

#### **RECOMMENDATION 27**

Plans for responding to problems, including the flexibility to respond to unanticipated problems, should be developed.

#### **RECOMMENDATION 28**

The store itself should provide a level of containment, and be capable of being temporarily sealed in the event of leakage to provide environmental isolation within the building.

### **9.1.2 Publishing results**

There was a strong requirement for all the results of monitoring to be published and accessible. Publishing results in government reports of which the lay public are unaware was not seen to be sufficient. Rather, members of the public repeatedly suggested that publication in local newspapers around any sites would meet the requirement for accessibility, and would provide a level of reassurance to the local populace.

### **RECOMMENDATION 29**

Provision should be made for local publication of all monitoring results at waste storage sites and at sites where submarines are dismantled.

### **9.2 Who monitors the monitors?**

A familiar concern was that of who ensured that the monitors (including regulators) were conducting their activities appropriately. The current provision for confirmation of monitoring by other government agencies is not seen as fully adequate, particularly for those who perceive shared interests among bodies of this nature which compromise their independence. A more clearly independent agency may well prove more acceptable.

### **RECOMMENDATION 30**

Consideration should be given to additional means for providing independent monitoring, and/or independent peer review of monitoring.

### **9.3 Visibility and monitoring**

Part of the concern that wastes should remain 'visible' is to do with trying to ensure that wastes are not 'forgotten' but remain a focus of active attention. Monitoring provides a method for maintaining this attention.

There is then the question of how much attention needs to be paid to wastes. For some, regulatory requirements were the norms that should be adhered to, whilst for others these were inadequate, and more extensive monitoring was required. This is again a form of the 'safety not cost' prioritisation.

Although the lay public and many stakeholders are unfamiliar with the regulatory monitoring regime, and although that regime does address most of the concerns raised, there remain concerns that the regulatory (and international) standards are inadequate and that regulators are too close to those they regulate.

## **9.4 Non-radiological monitoring**

Many respondents were also concerned more generally about who monitored areas such as management and security. As with radiological monitoring, the preference was for independent bodies to be responsible for monitoring in these areas.

### **RECOMMENDATION 31**

Consideration should be given to means of independent auditing of management and security procedures and practices.

## **10 Siting: waste storage**

The relationship between transport, siting and cutting out or cutting up the reactor compartment means that any discussion of any of these issues needs to be read in conjunction with the others.

### **10.1 No new sites**

A strong finding of the consultation is a decided preference to use a site with significant levels of existing nuclear activity (i.e. not a small user), with the perception that such a site would already be contaminated and that it would be foolish to destroy the integrity of a new site. This perception implies that it was sites with significant levels of activity that were being considered. Ideally, the wastes should be within the boundary of an existing site; it should at least be conterminous.

### **RECOMMENDATION 32**

A site with existing, relatively large scale, nuclear activity should be used, unless there are strong and clearly justified reasons otherwise.

### **10.2 Geological stability and protection from flooding**

Geological stability – that is, storage in an area which does not experience earth movement – was a concern of a large number of people. Although some of this concern can be attributed to confusion between the storage of the radioactive wastes from the submarines and the concept of a national underground repository, there is still a valid concern about geological stability in the region of the store.

Flooding, particularly in the context of climate change and rising sea levels, was also a concern. Given the lifetime of the store, the implications of climate change, including rising sea levels, need to be addressed.

## RECOMMENDATION 33

Geological stability and the implications of climate change need to be assessed in relation to the site(s) used for storing the wastes.

### 10.3 Remote or visible?

One key tension is between the preference to store the waste away from human populations, so that any accidents or discharges are equally remote, and to store the wastes near to populations on the grounds they would be better cared for and less likely to be ‘forgotten’ or overlooked. A particularly interesting and useful response was that, although initially people were likely to suggest remote sites, after discussion and consideration, very many concluded that a remote site would not be appropriate. This pattern of response supports the contention that the lay public are not just ‘NIMBYs’ but can engage in reasoned discussion in relation to the common interest when given the opportunity to so do.

#### 10.3.1 Put it in London

There was a very strong feeling, especially in areas which saw themselves as potential sites, that the most appropriate place to store the wastes was London, particularly at a site close to the Houses of Parliament. This was not facetious, but represented several powerful lines of reasoning:

- If the wastes are safe, then they can be stored in or near centres of population. If they are not safe, no site can be expected to accept them.
- Storage in the capital was believed to ensure that the best possible care would be taken of the wastes
- The wastes would remain visible, and would not be forgotten, if they were close to the seat of power
- The government had been responsible for the creation of the wastes (rather than the people of Britain being responsible) and thus they should bear the burden – and the reality - of the storage site.
- Populations at other locations felt devalued by being potential sites, as opposed to the south east who were assumed to be privileged by comparison.

#### 10.3.2 Put it in the US - they’ve got a hole

Another repeated suggestion from the lay public was that the wastes should be stored at the Hanford reservation in the US, along with the reactor compartments from decommissioned US submarines, although this was tempered by the feeling that there was a national responsibility to site the wastes within this country. Stakeholders were more circumspect, being more likely to be aware of the international agreements which obviated this. For those in favour of this option, the argument was that:

- A storage/disposal site already existed
- The US is a large, comparatively empty country
- 27 British reactor compartments would be a marginal addition to the dozens of US reactor compartments
- It is to support the US that Britain has nuclear submarines

There was little dissent from this view, when expressed, although there was a perception that the US would be unlikely to be willing to accept British wastes.

The possibility of locating the wastes in the US was also popular as it overcame the problem of sending the wastes to a country seen as less fortunate than Britain, with associated undertones of ‘dumping on the poor’.

### **10.3.3 Put it in Scotland**

Many discussion groups and some stakeholders at some point suggested Scotland as containing the best sites, in line with the argument that wastes should be stored remotely. For many, Scotland appears as containing large unpopulated areas which would be the most remote in Britain. Unpopulated Scottish islands were also repeatedly suggested in discussion groups

Many discussants, however, then developed the argument that the wastes should not be stored remotely for a number of reasons:

- They were more likely to be ‘forgotten’ and less well tended if stored remotely
- Even in remote areas, there are local populations, and it is unfair to inflict the wastes upon them
- Wastes should be stored where there is existing nuclear expertise
- Should there be radioactive contamination from the site, this would spread through the environment anyway

Respondents from the Highlands also raised concerns:

- The main economic activities in the region are dependent on the perception of the region as remote, and hence ‘clean’. Siting radioactive waste in such a region would fundamentally undermine such industries.
- Incomers have moved to the Highlands specifically because of its remoteness, and relative environmental integrity. This would be felt to be destroyed should nuclear waste be sited in the Highlands.

The most popular suggestion from Scottish respondents was to site the wastes in London, reflecting their rejection of the idea of the waste being imposed on them by the English Government.

### **10.3.4 Put it in Plymouth**

A very few stakeholders articulated the view that Devonport is the most practicable place to dismantle the submarines and store the wastes as the dockyard is already the primary site for submarine refitting, defuelling etc. There was also an argument that as Plymouth had benefited from the jobs associated with submarine maintenance, it should also suffer the disbenefit of hosting the wastes.

Counter to this were a number of arguments:

- Devonport dockyard is an unsuitable site for nuclear submarine activities as it is located within a residential area which includes schools. Nuclear activity within the dockyard should not, therefore, be increased.
- Plymouth already suffers the disbenefits of other nuclear submarine activities, including radiological risks

- The proposed increase in discharges of tritium associated with the defuelling of nuclear submarines is itself unacceptable, let alone any further nuclear activity
- Regeneration projects in the dockyard area are already suffering from an unwillingness of investors to provide funding due to the association of the area with nuclear activity
- DML, the Devonport contractors undertaking work on the submarines, are owned by Brown and Root Ltd, who were not seen as having a good reputation for being environmentally and socially responsible
- Wastes should be stored away from centres of population.

### **10.3.5 Put it in Rosyth**

Since losing the Trident refuelling contract to Devonport, it is planned to run down submarine work at Rosyth dockyard. Some stakeholders argued that using Rosyth to dismantle the submarines and store the wastes would maintain the skills base in the area, which would otherwise be lost. Additionally, seven submarines are already laid up at Rosyth and it seemed sensible to at least dismantle those in their current location, rather than towing them elsewhere. The existence of the AWAFF at Rosyth, with space for some of the ILW wastes, was also used to suggest that current resource commitments would be wasted should Rosyth not continue to work on the submarines.

Against this were arguments that storing of wastes, particularly the intact reactor compartments, would obviate attempts to develop tourism and other industries within the dockyard area. In addition, representations (including a detailed report from an ex-subcontractor of BRDL) were made that BRDL, the Rosyth contractor, had a number of failings which were stated to indicate they were not suitable for this work.

### **10.3.6 Put it on MoD land**

For some members of the public, there seemed a certain fairness in using MoD land to store MoD wastes. In combination with this was a widespread perception that the MoD own large tracts of unpopulated land, on which there was sure to be a site better than others proposed.

### **10.3.7 Put it in Siberia**

A number of people in discussion groups followed up the argument that wastes should be stored away from human populations by suggesting that, somewhere in the world, there must exist a site sufficiently remote to be the best option. Siberia was proposed in several consultation activities, being seen as a remote and largely worthless area.

A further strand of this argument was to consider other countries for whom the financial reward of hosting the waste site might be worth accepting the waste, notably third world countries. This was rejected wholesale by other participants, including stakeholders, on the moral grounds that the waste must not be 'dumped' on poor and/or powerless people, as, historically, had often been the case. A further concern with this possibility was the availability of suitable expertise in the location.



However, as above, the idea that there were better sites for waste storage outside Britain, had some support.

### **10.3.8 Put it somewhere else**

The generalised possibility of a site ‘somewhere else’ was presented to discussion groups. Many participants took up this theme, arguing that as nowhere in Britain was acceptable, somewhere else had to be found.

Respondents from areas who perceived themselves as potential sites also implicitly suggested that ‘somewhere else’ had to be found, although many specifically suggested remote sites or London.

Support for ‘somewhere else’ can be read as a wholesale rejection of the problem. In part, ‘somewhere else’ represents the unacceptability of everywhere proposed or even possible. In part, it is saying ‘we don’t want it’ in our town/region/country.

There were also those who explicitly rejected ‘somewhere else’ as representing this very rejection of the problem, a problem which they believed was a shared responsibility which must be faced up to.

### **10.3.9 Don’t put it anywhere beautiful**

Several stakeholders put forward the view that the wastes should not be stored in sites of high scenic or scientific value, both because these were valuable in their own right and should not be disturbed or destroyed, and because economic activity in the area was often dependent on its scenic quality.

### **10.3.10 Don’t put it near centres of population**

Although this view was most vociferously represented by respondents from the Plymouth area, it was also articulated strongly by many others, as it seemed commonsensical not to site hazardous substances in locations with a high population density.

### **10.3.11 Security**

Remote sites and existing nuclear and MoD sites were seen as offering more security than other possibilities. The main security concerns raised were terrorism and vandalism. Controlled access to the location would probably obviate these concerns.

## **RECOMMENDATION 34**

The wastes should be stored in a site where unauthorised access is prevented.

### **10.3.12 Tradeoffs and equity**

A clear sense of there being some possibility of tradeoffs existed for many respondents. The elements of the trade included:

- Economic benefits, including employment
- Maintenance of a skilled workforce
- Routine exposure of the local population to radiation additional to background levels
- Risk of serious accident
- Blight resulting from the negative perception of areas with nuclear activity.

The economic benefits, however, were largely seen as less than the disbenefits. There were strong statements to the effect that any economic benefit would not be sufficient to make a site accept the wastes, and/or that wastes were, quite simply, not wanted, regardless of any benefits. The other side of the coin is those who stated that if they did accept the wastes, they would certainly require the employment and other economic benefits as well. This implies that in some circumstances it could be more acceptable that the wastes be stored at or close to the site at which the submarines are dismantled, or that at least some employment and/or other economic gains would be a pre-condition of accepting the wastes. Employment gains were clearly seen as needing to go to the local community, e.g. by training local technicians, rather than being met by importing workers into the area.

In terms of considering where the wastes should be sited, there were two arguments: a site that has gained economically from nuclear activity should have the waste as they have had the economic benefit, or shouldn't have the wastes as local populations already carry a disproportionate radiological risk, as well as economic disbenefits such as damage to the tourism industry.

One potential resolution to this lies in the notion of equity: of what it is fair to expect communities to accept, taking into account distribution of risks and benefits (broadly conceived). If the benefit of the existing submarines in providing deterrence is taken into account, then the benefits have a national distribution, which suggests that it is fair to distribute the wastes across a number of national sites. In this analysis, the economic benefits of existing sites are seen to be cancelled out by the additional radiological risks which are associated with the activity.

A further dimension to this argument is to take account of existing radiological burdens (natural and man-made) when siting not just wastes but other activities which increase radiological risks, in order to derive a more equitable distribution of exposure.

### **10.3.13 Possible multiple sites**

The argument above leads to consideration of the possibility of building waste stores at more than one site. On site storage of wastes at the site of production is the current norm for ILW, and (in the absence of an alternative being proffered) is not generally contested by local communities. Although a direct equivalent for submarine wastes is not available as the submarines are mobile, asking a number of communities to accept part of the burden could prove more acceptable.

In addition, the existence of more than one site would provide a comparison which could be used to drive up standards, and this too might well prove more acceptable.

## **RECOMMENDATION 35**

The possibility of storing the wastes at more than one site should not be discounted.

### **10.3.14 How much waste: how many submarines?**

Although Project ISOLUS is concerned with the interim storage of the existing 27 nuclear powered submarines, participants were clearly aware that if further submarines are commissioned, there will be further wastes which are likely to be sent to the then existing waste store. Beyond this were concerns that other radioactive wastes might also be located in the vicinity.

Whilst production of nuclear wastes continues it is highly likely that finding solutions for waste storage will remain very contentious, particularly whilst new nuclear powered submarines are being built.

## **RECOMMENDATION 36**

The MoD should be explicit about the potential for expansion of storage beyond the existing 27 submarines, and should clarify, as far as is possible, what this potential could imply for the storage site(s).

### **10.3.15 How long will the waste be stored?**

Contractors also expressed concern about where responsibility for sites would lie after a 30 year period, particularly in relation to site licensing and the point that a licence could not be simply cancelled. Although contractors were assured that MoD would take up the responsibility of the wastes, and thus the sites, at the end of a contract period, for local populations this means that contractors have a limited temporal commitment, whilst local people have a much more open ended commitment. This can be perceived as both unfair, and as giving rise to the possibility that contractors might run down the site (with consequent loss of standards) towards the end of their contract. Although contract provisions should prevent this occurring, local populations are likely to be concerned about the possibility, especially when they see themselves as the ones who will be left with the waste long after the contractors have decamped.

## **RECOMMENDATION 37**

The MoD should be explicit about the responsibility, location and management of the waste beyond the initial 30 year period, and clarify, as far as is possible, the implications for the storage site(s).

### 10.3.16 The short list

There was a repeated assumption from stakeholders, fuelled by inaccurate media coverage, that a list of preferred sites existed. The ISOLUS Investigation Report examines a number of sites in order to identify the practicalities of different options. The Report also contains a number of deletions, some of which have been assumed to be the names of possible sites. Overall, there is a widespread feeling that the MoD must at the least have some sites in mind.

Whatever the degree of commitment, or lack of it, to any particular sites, the point here is that the attention given to the ‘short list’ is greater than that given to any other issue raised in the consultation. This is due to a number of factors, not least the common media strategy of constructing a story around the claim that a particular site is on the short list. However, what is important is that this re-emphasises that once sites are identified, considerably higher levels of public and media attention are to be expected.

As this consultation shows, it is not only when a short list is officially announced that attention will rise. Whilst potential sites are being considered (notably, in this case, by contractors rather than the MoD), speculation will be rife. Communities at sites that are the subject of this speculation will be concerned, in some cases unnecessarily. Ways of reducing this unnecessary anxiety are considered further below.

## 10.4 Siting the wastes: Summary

- A publicly acceptable distance from centres of population
- On existing nuclear sites
- Near centres of nuclear expertise
- Not in areas of outstanding beauty, scientific interest or other high (non-market) value
- Equitable distribution of risks
- No clear way forward, except for preference to use existing sites

The clearest tension in responses regarding siting was between the feelings that wastes should be sited away from centres of population, and that they should not be sited remotely, as they were more likely to receive attention and care where there were more people, particularly decision makers.

One potential resolution to this in the use of existing nuclear sites which are neither remote, nor close to centres of population.

The question of equity remains, however. Who should host the site is a question which represents the fundamental conflicts involved in locating a waste store. For many, the answer is ‘no one’ or ‘those who created the wastes’, neither of which is practicable. Siting is likely to be the most problematic part of Project ISOLUS.

## 10.5 Siting: dismantling the submarines

The issue of where to carry out the dismantling of the submarines raised issues with a different emphasis to those related to siting the waste store. These issues comprised:

- The comparative simplicity of cutting out the reactor compartment, which did not require highly specialised skills
- An assumption that the best technical option was to dismantle the submarines at the storage site (thus removing the need for transport of the reactor compartment or packaged wastes)
- A feeling that existing dockyards where work took place on submarines were the appropriate places to dismantle the submarines
- A sense that the significance of the location of the submarine dismantling was mostly in relation to the location of the store

Overall, though, the question of where the submarines should be dismantled was not an issue that generated a lot of discussion, although some strong arguments were put forward that if Rosyth were the site for dismantling, this would help maintain the existing skilled local workforce.

## 10.6 Transport

Transport was a recurrent concern throughout the consultation. With the exception of some participants in discussion groups who expressed horror at the idea that these wastes could be transported on road and rail through major centres of population, concern was relatively low key. Some stakeholders stated the position that transport should, as a basic premise, be minimised. For others, transport was a technical problem.

Transport by rail was considered by many to be in the realms of a sick joke; that the consultation took place after the Hatfield rail crash, and in a period of severe disruption to rail services, did not inspire any confidence in this possibility. That the railways had been privatised further compounded mistrust of both the possibility of rail transport, and of contractors being responsible for the management of the wastes.

More general concerns about transport may be somewhat muted as the sources of the wastes are themselves mobile, and because transport of the intact reactor compartment is presumed to be by water. A preference for transport by sea was expressed.

## RECOMMENDATION 38

Transport of the wastes should be minimised, and should avoid centres of population, subject to other considerations, unless there are strong and publicly acceptable reasons otherwise. Transport by sea is preferable.

## 10.7 Siting, options and transport

The relationship between transport, the choice between cutting up and not cutting up the reactor compartment and potential storage sites, is one of high interdependency. Minimisation of transport could, for example, imply that the wastes should be stored at the location where the submarine is dismantled, whilst if no acceptable site with access by water can be found, this could imply the reactor compartments should be cut up and packaged. None of the possible combinations were ruled out by the consultation, although concerns about transport appeared to be less demanding than

concerns about appropriate dismantling and storage. It is possible that a proposal which is less acceptable against one set of requirements be very acceptable against another, and that the overall justification may prove more acceptable. For example, although there was a strong feeling that wastes should not be sited in centres of population, the popularity of the Houses of Parliament as a potential site for other reasons appears to outweigh the consideration of population density.

## 11 Contractorisation and contractors

### 11.1 PFI/PPP or a traditional contract

There was a strong feeling that it was inappropriate to place these wastes in the hands of contractors, who, as above, were not trusted and were seen as motivated – and constrained - by profit seeking. The detailed workings of private finance initiatives and public private partnerships were largely unfamiliar to many. However, experience of contractorisation of other public services led to a general sense of the inappropriateness of this.

Instead, there was a strong argument from many stakeholders and the public that the MoD should retain responsibility and oversight of the wastes. Some argued that contractors should not be involved at all, and that the MoD should employ the requisite workforce direct. Others accepted that the expertise and skills now resided in private companies but argued that the MoD would need to place very clear demands on the contractors they used.

The detailed economic and financial implications of PFI/PPP were not discussed directly, although there was a clear perspective that if there were financial savings through utilising PFI, then this was because corners were being inappropriately cut.

The form of contracting used is closely bound to concerns about the conflict between profit, efficiency and cost, and safety and best practice. A traditional MoD works contract, where the MoD is more clearly in control (particularly of the financing, which is commonly seen as a key driving factor) may be more acceptable.

### RECOMMENDATION 39

The Minister should be informed of the strength of feeling against privatisation, and the problems of trust and confidence in contractors, and serious consideration be given to ways of organising Project ISOLUS which maximise the control, responsibility and accountability of the MoD.

### 11.2 Contracts

Several concerns were raised about what the contracts would cover:

- Who would own the wastes?
- Who would be accountable for the management of the wastes?

- What would happen after 30 or 60 years?
- What would happen if the contractor went into liquidation?
- Would there be one contract or several?

These questions generally reflected concerns about the responsibility for the wastes, and that management of the wastes would be coherent, with clear lines of accountability. Issues concerned with the regulation of contractors, and ensuring compliance, are discussed below.

### **11.3 Skills base**

There was concern from stakeholders that the skills base, now located in the private sector, would become further eroded over time and not be available for future waste management. Against this it was argued that the need to provide nuclear waste management would maintain the employment and skills base overall.

Particular sites, notably Rosyth, were likely to lose their skills base and workforce unless further work on nuclear submarines was undertaken there.

The lay public were concerned that skills and expertise be available in the location of the waste store, and certainly provision needs to be made that such expertise is indeed available.

### **RECOMMENDATION 40**

When assessing proposals, consideration should be given to the availability of suitable expertise in both the geographical area and the relevant areas of knowledge and experience, and for how this expertise will be maintained over time.

### **11.4 Locations of Knowledge**

The extent to which knowledge and skills have been transferred from the MoD to the private sector was an issue of concern. How ‘institutional memory’ was to be maintained when knowledge and experience was fragmented between often competing bodies was also recognised as an issue, as was the fragmentation of knowledge between contractors.

Again, this implies that the preference is for the MoD to take a more involved role in the waste storage than had been anticipated, taking responsibility for the collection of relevant knowledge, having ownership of the knowledge base, and attempting to ‘capture’ experience as far as is possible.

Given the concerns expressed regarding the maintenance of the skills and knowledge base, it would seem sensible to conduct an audit of the anticipated skills and knowledge required over the first 30 years of interim storage and beyond. This would then provide the basis for developing plans to address these concerns.

## **RECOMMENDATION 41**

An audit of the skills and knowledge bases required over the first 30 years of storage, and beyond, should be conducted and used to develop plans for the maintenance of such skills and knowledge bases.

### **11.5 Commercial confidentiality**

Commercial confidentiality was often seen as an excuse for not making information public, whilst in other cases it was recognised that the current economic structure of information production, ownership and use obviates against openness and the sharing of information resources. There is an obvious tension here between public requirements for openness and accessible information, and contractors' interests in retaining commercial confidentiality. This tension is acute when considering how to consult on the commercially confidential outline proposals to be invited in the next stage of Project ISOLUS, as discussed below.

### **11.6 When things go wrong - whistle blowing and cover ups**

During the course of the consultation, a significant number of individuals described instances where rules had not been fully implemented and bad practice had occurred with the nuclear submarine industry. A much larger number recognised that mistakes inevitably occur, and whether deliberately or accidentally, rules get broken.

Many of these accounts also stated that such mistakes were routinely covered up, including from immediate seniors. This too was recognised more widely as 'normal working practice'. Employees were unwilling to report bad practice, as they believed their jobs would be threatened, and in some accounts, people had indeed lost employment.

The argument against this was that those describing malpractice were ex-employees with a grudge, and that such accounts were fictitious.

Whatever the truth of particular claims, it is clear that the majority felt that it was to be expected that things would not be done correctly all the time, and that there should therefore be provision for employees (including sub-contractors) to be able to communicate safely with regulators.

In addition to this, it was suggested that it would be valuable for regulators to meet regularly and informally with employees to gain greater knowledge of the real working of the establishment.

## **RECOMMENDATION 42**

Provision for whistle-blowing should be made within the management plan.



## 11.7 Lack of confidence and mistrust in contractors

The lack of confidence in contractors was related not only to the perception of cover-ups and rule-breaking, above, but the point that the pressures of contract work in relation to time and finance pressures were seen to exacerbate corner cutting and rule breaking. Added to this was the local experience of employees that entered into everyday conversation, and was given more credibility than counter claims by employers, perhaps because employers were seen as having a clearer interest in claiming that all was well.

It was striking that the lay public generally assumed that the wastes would be under the direct control, and managed by, the MoD. When issues of contractorisation were raised, they were largely done so negatively. The RWMAC Report (see note 2) points out that the MoD cannot determine the detailed activities of contractors “because in order for them to discharge their responsibilities in the most effective way possible, they need to be given a largely free hand in the way they manage their sites (subject to consistency with MoD’s radioactive waste strategy and its responsibilities as the waste-owner)”. This freedom, necessitated by the logic of efficiency seen as underpinning privatisation, contradicts public calls for the wastes to be closely managed by the MoD in order to assuage, at least to some extent, public concerns about the level of confidence they can have in the parties responsible for the hands-on management of the wastes.

## 11.8 From the contractors’ point of view...

Contractors were concerned that the ‘public acceptability’ requirement placed them in a position of increased uncertainty in an area where they had little or no expertise. Because the next stage of consultation, and its relationship with Outline Proposals submitted by contractors, will only be defined in the MoD response to this report, as an outcome of this phase of consultation, contractors were unsure how this would affect their development of proposals. There was a clear request for guidance on what would constitute public acceptability. For this reason, a summary of ‘Key points for contractors’ has been developed, and will be published on the Consultation Website.

Contractors also requested clarification of the distribution of responsibilities between them and MoD. These responsibilities including the financial and planning risks, and the long term ownership of the wastes.

Contractors agreed that the Public Sector Comparitor (PSC), developed by BAE for the MoD, and covering five scenarios for interim storage of the submarine wastes, should be made available to them, to provide an indication of what it was that they were, effectively, bidding against. The argument against this is that this may provide a falsely restrictive monetary ‘cap’ on contractors’ proposals.

Contractors also requested clarification of what would be deemed to be acceptable to regulators, suggesting that regulators’ comments on the PSC would be useful in this respect. Regulators do routinely provide advice on proposals, so it is not clear what more these contractors are requesting, other than details of the PSC and the regulatory responses to this. It would appear to be the contractors’ responsibility to approach

regulators with more detailed requests and suggestions if further advisory structures beyond those already provided are required.

## 12 Regulation

### 12.1 Regulators and contractors

The feeling expressed by many people that regulators and contractors were ‘in cahoots’ is not an accusation of improper conduct, but a recognition that it is the contractors, by proposing, and regulators, by authorising, that between them effectively decide in practice whether levels of safety are sufficient. This is not to discount the importance of regulatory levels, but to recognise that there is a level of discretion in the judgements about whether practices are adequate.

Regulators and contractors share a way of understanding what the issues are and what is important – that is, they share a framing of the problem. This framing, as discussed above, often does not fully reflect public concerns. It is this shared but exclusive framing that underlies public concerns about regulators and contractors being overly close. Thus, it is the appropriateness and validity of this shared framing that needs to be examined and moderated to include better representation of public concerns and values.

### 12.2 Are regulatory practices acceptable?

It was apparent in the course of the consultation that many of the requirements raised by the public are already undertaken. In part, this reflects the lack of communication between regulators and the public and the invisibility of regulatory practice. In part, it reflects historic practice. In part, too, it reflects lay knowledge of instances where regulation is not applied, and often is not visible. But it also reflects the point that although the requirements are met, they are not met in a way that fulfils public requirements. The example given earlier was the interpretation of ‘independent’ monitoring, where other government agencies are not seen as independent bodies by the public.

Concerns were expressed by a number of the public and other stakeholders regarding the comprehensive regulation, and the cross-over and gaps between regulatory bodies. These concerns were particularly strongly expressed by those who stated they had direct experience of things ‘falling through the gaps’, sometimes quite literally. This matter is one about which regulatory bodies also expressed some concern, and clarification is clearly required.

The legitimacy of regulation principles and practise is derived from legislation, hence from the operation of democracy. However, where the results are not acceptable to the public this needs to be identified and revisions made. There seems to be a necessary area of investigation to understand more precisely when greater information provision and understanding can legitimately reassure the public that regulation is sufficient, and when the regulatory practice itself is unacceptable.

## **RECOMMENDATION 43**

The principles and practices of regulation should be made more publicly accessible, especially around potential sites. The responsibilities of different bodies need to be made clear. Regulators should seek to engage in two-way communication, especially with affected populations. The responsibilities of the various regulatory bodies need to be reviewed to assess duplication or lack of contiguity in regulatory responsibilities for nuclear submarines.

### **12.3 Is internal regulation acceptable?**

The public, in line with discussion of monitoring, generally emphasised the need for independence of regulation and regulators from regulatees. Several stakeholders more specifically raised questions, or more strongly, demands, that regulation of MoD nuclear activities be brought in line with civil regulation, and that the exemption of MoD activities from civil regulation was inappropriate. In particular, there was some degree of agreement that regulation of the waste stores should be undertaken by civil, not MoD, regulators, notwithstanding the MoD commitment to apply standards at least as good as those in the civil sector.

## **RECOMMENDATION 44**

Serious consideration is given to supporting the case for civil regulation of waste stores specifically, and other MoD nuclear activities more generally.

## **13 Consultation**

### **13.1 A welcome initiative or a waste of time?**

The consultation was broadly welcomed, with a substantial number of comments that it was reason for optimism in itself that the MoD was undertaking this consultation and that this was a positive change from the historic practice of secrecy and ‘decide, announce and (very often) don’t bother to defend, just do it’.

Certainly, even for those who were suspicious of the motives of the MoD in commissioning the consultation, there was a widespread commitment to the principle that the public and others had a right to be consulted on issues of this type.

The RWMAC report (see note 2) also welcomes the commitment to consultation within Project ISOLUS, seeing this as a necessary concomitant of developing viable waste management options.

A small minority of respondents considered that the consultation was a waste of time, particularly at this stage when there was no specific proposal on which to consult.

Other views in this group were that consultation could be used as way of avoiding making difficult decisions, or that it was inappropriate to consult the general public as they ‘don’t know enough about it’ and were prey to media misrepresentation.

### **13.2 Engaging in front end consultation – stakeholders and the public**

A notable difference between the ways in which stakeholders and members of the public engaged with the consultation was in the self-imposed constraints of stakeholders and the comparative openness of the public. That is, stakeholders, particularly those participating in a professional capacity and to some extent representing the views of their organisation, tended to think primarily in terms of what implications the Project has on their professional responsibilities. This was coupled to a partial rejection, or failure to understand, the premises of Front End consultation, in that these stakeholders often queried what it was they were supposed to be discussing, as they came with the expectation that they would comment on concrete proposals, rather than more abstract principles. For example, several stakeholders stated it was not possible to consider siting issues generically but these could only be addressed in relation to specific sites.

In contrast to this, the public generally found it relatively easy to engage with underlying principles and general issues. In part this is because they are not constrained either by technical knowledge, which predisposes people to think in those particular terms, or by roles where they would be required to implement decisions. As they have no pre-existing discourse to utilise, they are free to develop their own terms of debate, and this is largely constituted by social and ethical reasoning, rather than narrowly technical concerns. In part it is because, as the public state in this and other arenas, they have no desire to engage with the detailed technical debate (that should be left to the ‘experts’), but that they do believe, in a democracy, that guiding principles should reflect public concerns.

### **13.3 Inclusion and exclusion**

Some participants queried the premises on which people had been either recruited for discussion groups and the citizens’ panel, or invited to stakeholder workshops. These querists appeared satisfied that public participants had been recruited to include a wide range of different ‘types’ of people (i.e. demographically varied and representing a range of points of view), and that stakeholders had been invited to represent a range of different stakeholder bodies.

Nonetheless, some particular groups felt that they should have been invited to participate, and some participants from the Plymouth area believed there should have been more intensive consultation around Plymouth. Similarly, some respondents from around Aultbea also believed the consultation should have been more widely publicised to enable greater voluntary public participation.

One premise of the design of the consultation was that no one should be excluded, and the provision of the website, with associated printed material, was seen to meet this

provision. However, this does not address the issue of publicity of the consultation, which should be considered more carefully in subsequent stages of consultation.

Four consultants, with expertise across a range of technical arenas, and who frequently provide advice to environmental groups, did not participate as funding was not provided to pay for their time.

A small number of people declined to participate in either stakeholder workshops or the website on the grounds that they did not believe in the validity of the consultation. Only if the legitimacy of consultation is demonstrated through a clear take up of the outcomes might this group be persuaded to participate.

## **RECOMMENDATION 45**

Further phases of consultation should aim to include anyone who wishes to be included, as far as this can be made possible.

### **13.3.1 Silenced sites**

It was apparent that in some areas, some people did not feel they could speak freely, as feelings about the issues were so sensitive within the local community. For example, in areas which are highly economically dependent on employment provided by nuclear activities, some people feel unable to voice criticisms of nuclear activities or expansion. Further consultation activities need to take account of this, and not only enable people to make anonymous submissions but to actively recruit those who are potentially silenced in this way, as many people who are silenced will often not make even anonymous submissions.

## **RECOMMENDATION 46**

The consultation design should enable those who may not feel they can speak freely to contribute.

### **13.4 Who should be consulted?**

A specific question to the public participants in the consultation was ‘who should be consulted in further rounds of consultation?’ One very clear response was that ordinary members of the public were vital consultees; a small minority stated that the public should be excluded as they were insufficiently informed, or that only those with extreme views would participate. There was also considerable overlap between suggested consultees and members of a Steering Group.

Proposed consultees comprise:

- The lay public – “ordinary, everyday people” who have “common sense”
- A cross section of the public, to cover the diversity of opinions
- People around sites and along transport corridors
- People who will be affected by decisions

- “Us” – i.e. people who have participated in this round of consultation
- Technical and scientific experts
- Nuclear experts
- Counter experts
- Environmental groups
- Community Councils (Scotland)
- Local Authorities (at all levels), particularly officers rather than elected members
- Regional Chambers
- Department of Health
- Workers in the industry
- Ireland and Norway as neighbouring countries concerned about nuclear activity in Britain
- Other countries
- The UN

#### ***13.4.1.1 Counter experts***

A strong requirement was that ‘counter experts’ should be included. Counter experts comprised those who were outside the ‘magic circle’ of nuclear industry, regulators and government agencies, but still had the competence to assess proposals. Often, counter experts are associated with ENGOs. This was seen to be a necessity to produce better proposals and implementation, and to give credibility to them. The simple interpretation was that ‘if they’re satisfied, so am I’.

### **RECOMMENDATION 47**

Counter experts should be included in future phases of consultation (see also Recommendation 50).

#### **13.4.2 Who should not be consulted?**

Some emphatic suggestions were made for those who should not be consulted:

- Those from urban areas because these areas are not potential sites
- People from outside of Plymouth – because they have no interest in what happens in Plymouth, and Plymouth was assumed to be the relevant site
- Local and national politicians – as they are not trusted, and are not seen as independent
- Economists – as they are limited by “parameters of money, and the problem is far too big for that”

These exclusions reflect one key discrepancy with those who should be included, i.e. politicians, and emphasises the sensitivities around their role in subsequent consultation. Otherwise, there is a very significant degree of agreement. Other inclusions reflect the emphasis on those at a proposed site having the ‘strongest voice’ in consultation, and a reiteration of the point that these decisions on such matters should not be determined by economic considerations.

## 13.5 How should they be consulted?

The lay public and most stakeholders are not familiar with the variety of novel consultation techniques and their premises, and therefore cannot be expected to suggest detailed consultation plans. However, a number of premises were clearly articulated:

- Consultation should be widely publicised, particularly in potentially affected communities
- Discussion groups were seen, by participants, as highly appropriate, giving the opportunity for a degree of informed discussion among a wide range of different sorts of people
- Information should be widely available and easily accessible
- Critical views should be actively sought
- Consultation should be conducted by an independent third party
- Consultation should be overseen by an independent body
- Eventual decisions must clearly reflect the views expressed in the consultation

## 13.6 The Steering Group

### 13.6.1 Who should be on the Steering Group?

The strongest views on membership of the Steering Group were that disinterested experts (independents) were required, and given that there are very few if any truly independent experts, all interests should be represented. Disinterested lay people were also seen as capable of the impartial judgement which was seen as essential.

These more specific suggestions were also made:

- Large ENGOs such as Greenpeace and Friends of the Earth
- Independent technical experts/consultants (e.g. people who work for NGOs)
- Elected representatives from national government (MPs)
- The MoD
- Local government representatives.
- Disinterested representatives of Europe
- The UN or other global representatives
- Representatives of the UK's regions
- Technical experts
- Representatives of employees in the nuclear industry (e.g. Trade Unions)
- Ethicists
- People with knowledge of consultation
- Well educated, disinterested members of the public
- Lay people
- Local community groups
- Local environmental groups
- Local people generally (in relation to sites)

### 13.6.2 Who should not be on the Steering Group?

Those suggested for exclusion from the Steering Group can also be seen to represent particular interests, and groups who are mistrusted:

- Politicians

- Contractors/ those with an interest in the commercial opportunities
- The MoD
- Smaller pressure groups (as their focus is often too narrow)
- The media
- Those with vested interests

There are obviously some contradictions here between those identified as being participants, and those identified for exclusion, reflecting the point that the consultation was designed to identify the range of views of members and the public, rather than using processes designed to produce ‘consensual’ (amongst the participants) decisions.

The conclusion appears to be that the existing Steering Group approximates an appropriate membership. Inclusion of a lay person, a national ENGO, and someone representing European and global considerations would more fully reflect the preferences elicited here.

The Front End Steering Group also pointed out that in the next phase of consultation, some members of the Steering Group may need to have funding for their time to enable them to participate.

## **RECOMMENDATION 48**

The Steering Group in future stages of consultation should be reconvened to include a lay person, a national ENGO, and representation of relevant international experience. Once sites are identified, people from sites under consideration should also be represented on the Steering Group(s). It may be necessary to fund individuals to enable them to serve on the Steering Group.

## **13.7 What should the remit be?**

The remit of the Steering Group was clearly seen as providing an independent view, and ensuring that the MoD took due account of the findings of the consultation. The purpose of the Steering Group was seen to be to:

- Provide an independent perspective on the issues
- Ensure the accountability of the consultation process, avoid an MoD “white wash” and be able to demonstrate that different opinions are taken into account
- Be independent from MoD
- Provide quality control

The independence of the Steering Group was seen to mean that it should be commissioned by an independent body, not the MoD. The current Steering Group is effectively independent of the MoD, being convened by an independent third party who also provide the secretariat, which appears to suffice. However, exactly how the Steering Group might provide accountability and ensure findings are taken into account is not clear.



The point that established mechanisms for liaising with the public and established advisory bodies should be incorporated into the consultation process was raised on several occasions.

## **RECOMMENDATION 49**

A Steering Group for future consultation should continue to be convened and serviced by an independent third party. How the Steering Group might provide a greater degree of accountability for the consultation process, especially in terms of ensuring findings are taken into account, should be given further consideration.

### **13.7.1 A Steering Group/Advisory Group for Project ISOLUS?**

There was a strong presumption, when talking about the Steering Group, that this would have some degree of oversight over the whole of Project ISOLUS rather than just being concerned with the consultation. This tallies with the clear preference for some form of independent oversight of radioactive waste management activities, both in relation to the submarines and more generally. Such a group was commonly seen to require the membership of regulators, the MoD, contractors, independent expertise, ENGOs, Trade Unions and people who were impartial.

A Steering or Advisory Group for the whole of Project ISOLUS would generate confidence and trust in the correct and appropriate conduct of the Project. It could additionally potentially provide a valuable source of information and commentary for the Project.

However, the requirement for an independent oversight body would not be fully met by the creation of a Steering Group, but requires a stronger institutional mechanism. The widespread preference for radioactive waste to be managed by a body independent of existing government departments and the nuclear industry should be communicated to the relevant bodies. However, this preference does need to take into account the less widespread opinion that radioactive waste should be dealt with by the body responsible for its production.

## **RECOMMENDATION 50**

Consideration is given to establishing an independent advisory group to provide input to Project ISOLUS. Consideration should also be given to convening a technical advisory group, which should include counter expertise (see also Recommendation 47).

## **RECOMMENDATION 51**

The public preference for independent oversight of radioactive waste management should be communicated to the relevant bodies (see also Recommendation 1).

## **13.8 Legitimacy of consultation**

### **13.8.1 Taking notice of the consultation and justifying decisions**

Throughout all the consultation activities there was a clear and almost universal response to the question of what would make the consultation worthwhile. This response was that the legitimacy, and thus worth, of the consultation rested primarily on the extent to which the outcomes were taken into account. If they were ignored (and there was a strong feeling that they were likely to be ignored if they conflicted with the preferences of ‘the powers that be’), then participation in the consultation was worthless. Moreover, the consultation was likely to be counterproductive if results were ignored, as participants would be confirmed in their view that public opinion was disregarded by those in power.

The evidence that public opinion had been taken into account was required to be demonstrated. That is, there was a clear requirement for the points raised in this consultation to elicit a response, and that plans for moving forward required justification in terms of the consultation outcomes, explaining where these had been taken into account and where they had not, and making clear the reasoning behind these decisions.

### **RECOMMENDATION 52**

The MoD’s response to these recommendations should clearly indicate where consultation outcomes have been taken into account, and where not. The reasoning behind plans and decisions should be fully transparent. The response should be in the public domain and easily accessible (for example, on the website, in printed form available on request, and distributed to participants in the Front End Consultation).

### **13.8.2 Publication of Outputs**

That all the outputs of the consultation were being posted on the website was interpreted very positively, in line with comments on openness and transparency. The publication of outputs also went some way to meet the suspicion that the consultation would be used to provide false legitimacy, as the consultation outcomes would be clearly visible and could not therefore be so easily misrepresented.

### **RECOMMENDATION 53**

Further stages of consultation should undertake to publish all outputs, unless there are strong and clearly justified reasons otherwise.

### **13.8.3 Independent third party conducting consultation**

There was considerable support for an independent third party conducting the consultation; that the consultation was conducted by a University was repeatedly welcomed, and no criticisms were recorded. One element of this was that respondents

stated that the University team had not put any ‘spin’ on the issues, but had laid them out as neutrally as possible. It appeared, also, that the University team were trusted by most participants to report the consultation outputs accurately. There was also a clear feeling that a University was more likely to maintain an independent stance than a professional consultancy, as they would be less likely to be compromised by the financial relationship and to benefit from the tradition of independent thought that is still seen as part of the university culture.

Contractors stated that they did not have the skills to conduct consultation. In addition, contractors would clearly be compromised by their interest in the outcome. However, should contractors be involved in conducting consultation themselves (which appears unlikely within this Project) they would benefit, collectively, and it would be more equitable and results more comparable, if an expert body was convened to provide guidance to them.

## **RECOMMENDATION 54**

An independent third party or parties should conduct subsequent stages of consultation.

### **13.8.4 Suspicion of the consultation**

Although the consultation was welcomed, this was conditional on the consultation being legitimate. There was also considerable mistrust of the motivation of the MoD in undertaking this consultation. It was suspected that the MoD had commissioned the consultation in order to:

- Gain false legitimacy for subsequent or existing decisions through being able to say that consultation had taken place whilst ignoring the outcomes of the consultation
- ‘Get the tick in the box’, that is, to be able to say consultation had taken place and therefore move the Project forward.
- ‘Spy’ on public views, in order to manipulate them more effectively, for example through PR initiatives, and/or to identify sites which were ‘softer’.
- Divert attention away from bigger issues, such as defuelling.

Suspensions were most likely to be alleviated by a clear demonstration that the outcomes of the consultation are being taken into account.

## **13.9 Funding**

### **13.9.1 Funding of the consultation**

There was some criticism from some participants, particularly those who had only found out about the consultation after inaccurate press coverage in Scotland, that the consultation was inadequately funded, particularly in relation to publicising the fact it was taking place.

Some others believed that more extensive consultation should have taken place, notably in Plymouth, although this was generally attributed to either miscomprehension of the issues on the part of the Front End Consultation team, or to deliberate exclusion, rather than to a shortage of funding.

The countervailing view was held by those who, as above, believed that the consultation itself was a waste of time (and by implication, money).

Overall, funding of the consultation as such was not an issue which attracted much attention, other than in terms of the general welcome given to the fact the consultation was taking place (and therefore being funded).

### **13.9.2 Funding participation in consultation**

Funding for travel and subsistence for otherwise unfunded participants in the consultation was welcomed, and seen as a necessity to enable inclusion.

As above, a number of consultants were unwilling to take part in the consultation unless their time was funded. Stakeholder dialogue can, for this group, represent a means for organisations to gain free consultancy advice.

Independent consultants and voluntary staff are the main groups whose time is not funded for participation in consultation. Members of the lay public have argued that they require the services of such independent experts, particularly as so much of the knowledge base is contested.

## **RECOMMENDATION 55**

A fund should be made available to which prospective participants can apply for funding, and clear guidelines developed regarding the provision of such funding.

### **13.10 Publicity**

There was some concern that the consultation had been inadequately publicised. This was particularly a concern amongst those who had learnt from newspaper headlines that their area contained a potential site.

Although there had been ministerial announcements regarding Project ISOLUS and the Front End Consultation, and the MoD had issued press releases announcing the consultation, these were not reported widely in the media. The only significant media coverage was in relation to potential sites. This suggests that the media will provide some coverage when potential sites are identified in the next round of consultation. However, given the coverage elicited in this round, that coverage is likely to contain inaccuracies.

More substantial publicity is a pre-requisite of the next round of consultation, and will have to be considered carefully alongside the consultation design.

## **RECOMMENDATION 56**

Widespread publicity should be given to subsequent consultation activities to maximise awareness and to inform people who may wish to participate of their opportunity to do so.

### **13.11 Knowledge, information and openness**

A fundamental requirement of the public and many stakeholders is that information should be widely available. The need for secrecy in relation to national security was acknowledged as legitimate; the need for commercial confidentiality was also acknowledged, but with less of a sense that this was fully acceptable. As detailed proposals are developed, this tension is likely to become more acute: correspondingly detailed information will be sought by at least some consultees. For the Safety Case to remain confidential is likely to be particularly problematic, as many consultees have raised the issue that they (or experts on their behalf) require to be aware of the full basis of decision making, and the justification of safety (or tolerable risk) is likely to be particularly sensitive given the emphasis on safety articulated in this consultation. The adoption of REPPIR should alleviate some of these concerns.

There are two ways of dealing with this problem. Firstly, serious consideration needs to be given to what can, and cannot, be made public by the MoD, contractors, and other parties. The presumption, in line with Government policy on openness and transparency, should be that information is made public, and that justification is required to maintain secrecy. Secondly, should information considered relevant by the public and other stakeholders not be placed in the public domain, the reasoning behind the decision needs to be made clear: in line with the point that consultees do recognise the need for secrecy in some instances, if the reasons given for secrecy are acceptable, then it follows that the secrecy is acceptable.

## **RECOMMENDATION 57**

As much information as possible should be publicly available, including all safety related information. Where information is not made publicly available, reasons should be given as to why this is the case.

Given, as indicated above, that much of the knowledge base is contested, there is inevitably a requirement for further research and review to attempt to resolve uncertainties. However, whilst this is and should be an ongoing concern for the MoD as a whole, as well as for other relevant organisations, it seems inappropriate for Project ISOLUS to take on this responsibility. Rather, the Project should attempt to provide information on these issues, including information on further research and study. The Project should also pass on to relevant bodies notification of areas in which there appear to be particular concern. In the Front End Consultation, such concerns are particularly apparent in relation to

- The incidence of leukaemia and other cancers in the Plymouth area, as well as around other nuclear sites
- The doses received by workers and submariners, and the relationship of these with subsequent health effects

- The assessment of risks associated with the dismantling of the submarines and storage of the wastes

## **RECOMMENDATION 58**

Project ISOLUS should provide information, or indicate where such information can be found, on areas where the knowledge bases are disputed or uncertain, such as the health effects of low-level radiation, and notify relevant bodies of particular areas of concern raised by consultees

### **13.12 Transparency: the consultation and decision process**

The decision process, and the role and sequence of consultation within that, was not clear to many participants. In part, this was because there was an expectation that the MoD would put forward proposals, and a lack of recognition of the role of contractors, and therefore that the whole process was entirely within the remit of the MoD. In part, it is also a result of the point that the ways in which further consultation will be conducted, and its relationship with the decision process, is to be determined as an outcome of the Front End Consultation and was therefore not fully defined during this consultation. In part, too, this opaqueness resulted from a lack of familiarity on all sides with the complexity of the tendering, consultation and decision processes.

Good practice is widely recognised to require that decision making processes are transparent, and further information and consultation should endeavour to achieve this, notwithstanding the complexity of those processes.

## **RECOMMENDATION 59**

The consultation and decision processes should be laid out more lucidly, and be more accessible, with (in as far as is currently possible) a clear timetable of action. It should be clear from the outset of any activities what the objectives of the consultation are, its relationship with and timing within the decision-making process and linked processes, and how the consultation findings will be used.

## **14 Consultation in the next round: the Project Plan**

One responsibility of the Steering Group was to make recommendations in relation to subsequent phases of consultation in Project ISOLUS. This section contains those recommendations.

The next round of consultation is anticipated to take place after Outline Proposals have been received from industry. Once these proposals have been received, potential sites – as included in the proposals – can be announced. At this stage it will be necessary to conduct site specific, as well as national level, consultation.

The consultation on the Outline Proposals will contribute to the selection of a short list of proposals and the particular issues relevant to those short-listed proposals, the proponents of whom will be invited to develop their proposals in negotiation with the MoD.

The consultation process in relation to the Outline Proposals will be announced before the ISOPs is undertaken, in order that concerned communities are aware of the process of consultation and decision making. This announcement will include direct communication with all UK Local Authorities, and publication of details on the Consultation Website.

A responsibility of the Steering Group convened for the Front End Consultation is to advise on the development of a 'Project Plan' for further consultation. To this end, the Steering Group has identified the following objective for the next phase of consultation:

*To enable informed, public debate on the options put forward in response to the Invitation to Submit Outline Proposals, and to enable consultees to make their views known.*

Beyond this, the Steering Group has identified a number of principles, derived from the responses to the Front End Consultation, to guide the detailed design of the activities in the next phase of consultation (see below).

## 14.1 Who should be consulted?

The next round of consultation will require both local foci, specific to the sites proposed, and a level of national consultation. At the local level, consultees should include:

- The lay public
- Local government
- Local community groups
- Local ENGOS
- Local trade and industry
- Local employees in the nuclear industry

At the national level, consultees should include:

- The lay public
- Representatives of the lay public, and others, from proposed sites
- People who have participated in the Front End Consultation
- Technical and scientific experts
- Counter experts
- National ENGOS
- Local, regional and national government (officers and elected representatives)
- Department of Health, DEFRA, etc
- Trade Unions

- Irish and Norwegian governments
- EU
- UN

## **RECOMMENDATION 60**

A broad range of the public and other stakeholders should be actively included in the next phase of consultation (see also Recommendation 45).

### **14.2 How should they be consulted?**

As explained above, rather than determine a precise set of activities for the next stage of consultation, the Steering Group has derived a number of principles which should underlay those activities:

- Information should be widely available and easily accessible
- Consultation should be inclusive
- Consultation should include the use of deliberative methods (e.g discussion groups, citizens' panels)
- Critical views should be actively sought

Related principles comprise:

- That in future stages of consultation, care must be taken to provide clear explanations of the consultation activities and their rationale, and to use consistent terminology
- Consultation should be widely publicised, particularly in potentially affected communities
- Consultation should be conducted by an independent third party
- Consultation should be overseen by an independent body

The Steering Group pointed out that principles of best practice for consultation and participation had been produced by a number of organisations, including the Cabinet Office, the Audit Office, DEFRA, and the Environment Agency. These have provided the basis for the Front End Consultation, and should be utilised in the next phase of consultation. The draft EU Directive on Consultation and Participation should also be taken into account.

## **RECOMMENDATION 61**

Principles emerging from the Front End Consultation, as identified by the Front End Steering Group, should be used for the next stage of consultation. Reference should also be made to principles of best practice as identified by a range of other sources.

### **14.3 Who should conduct consultation?**

The next stage of consultation should clearly be conducted by an independent third party (or parties), and funded by the MoD.



Given that the next stage will necessarily involve a simultaneous multi-site and national consultation, a consortium may be necessary. Most if not all centres conducting consultation activities are of a limited scale, and for a simultaneous multi-site consultation either a consortium, or sufficient lead-in time to recruit the relevant staff, would be required. In either case, sufficient time to adequately design, conduct and report the consultation will be required.

In addition local knowledge will be needed to enable the inclusion of relevant groups.

## **RECOMMENDATION 62**

People with local knowledge will need to be included in the consultation team (see also Recommendation 54).

### **14.4 Site specific issues**

There is a significant compromise in delaying the next stage of consultation until the Outline Proposals are received. The compromise is between

- Informing communities at the earliest possible point that their site is being considered, however preliminary or tentative that consideration might be (which would involve contractors declaring an interest in a site), or
- Announcing the sites put forward in the Outline Proposals, when these are received

The advantages of the first strategy are that

- It meets demands from local communities that they be informed when their location is under consideration
- It may provide an early indication of which communities might be predisposed to accept the wastes or are more likely to reject them, thus preventing time and resources being wasted in developing Outline Proposals which are unlikely to be publicly acceptable

The disadvantages are that

- Communities at sites which are then dropped may have been unnecessarily concerned, have devoted unnecessary time and resources to considering the possibility, and may have been damaged ('fractured') if oppositional groups form
- That little or no information on the Outline Proposal can be forthcoming until the Outline Proposals have been submitted, thus severely limiting the extent to which consultation on that Proposal can take place
- The confrontation between the contractors' and tendering processes' requirements for commercial confidentiality, and the public's demand for information, is likely to be counter productive in terms of generating meaningful debate
- Contractors will be pressed to be able to demonstrate any meaningful form of public acceptance of their proposals in the absence of any structured consultation on those proposals

- The tendering process could be compromised through consultation activities rousing concerns in sites and making them untenable
- Contractors may be unwilling to 'declare their hand', especially if previously unmooted sites are being considered rather than the obvious candidates

The advantages of the second strategy is that

- It enables a coherent and informed consultation strategy to be implemented simultaneously in potential sites and nationally
- It does not compromise the tendering process

The disadvantages are that

- There is likely to be local rumour and discussion of the proposal prior to official announcement, and this will make subsequent consultation more difficult because 'battle-lines' will have become established, and a considerable variety of information of variable quality will have already been circulated
- That there have been private discussions between Local Authorities and others, and contractors, will exacerbate mistrust; the accusation that Local Authorities and contractors 'stitch things up' has been repeated many times in this consultation, and this progression of events appears to condone that view
- Sites that may have been tenable had they been party to discussions from the first instance may reject proposals on grounds of the prior secrecy of the process and hence untrustworthiness of the proponents

A compromise between these conflicts is obviously necessary. The Steering Group reluctantly recommend that, as stated above, potential sites are announced after outline proposals have been received and site specific consultation takes place at that time.

## **RECOMMENDATION 63**

The next stage of consultation should take place not later than the time at which the Outline Proposals are received. In the meantime, Chief Executives of Local Authorities, and other appropriate bodies, should be informed by the MoD of the decision-making and consultation process (including the process prior to Outline Proposals being received) and its projected timetable. This information should also be posted on the consultation web site and provided to those who participated in the Front End Consultation (see also Recommendation 59).

### ***14.4.1.1 Contractors issues***

There is a very real possibility that some potential contractors may not develop outline proposals due to the complexity of the public consultation and public acceptability requirements of Project ISOLUS. It may therefore be worthwhile, as suggested in another context above, to provide some form of advice to contractors to support them in developing an understanding of the implications of these issues, during the period in which they are developing Outline Proposals, and beyond.

## **RECOMMENDATION 64**

Consideration is given to providing expert advice on consultation and public acceptability, and the means by which this can be done, to potential contractors.

### **14.4.2 NIMBYs, shared responsibility, and the next stage**

The polarisation between Devonport and the Highlands in this consultation is striking. The clearest and most consistent articulation of the position that the wastes should be stored away from centres of population came, unsurprisingly enough, from the Devonport area. Conversely, respondents from the Highlands argued that wastes should be stored in centres of population. The highest number of web responses and letters came from these two areas.

If the aim of developing public acceptability through, in part, encouraging people to think in terms of the common good rather than individualised interests is pursued, it would seem appropriate to bring groups with opposing views together in the attempt to move beyond this sort of polarisation and develop solutions with a greater shared basis of acceptability.

## **RECOMMENDATION 65**

Once potential sites are identified, consultation techniques should include the provision for people from different sites to meet together to pursue more acceptable solutions.

## 15 Appendices

### 15.1 Appendix I: Reports produced in this consultation

Three levels of report have been produced for the consultation. The present document is the primary level report and it draws on the data and observations from the other two levels. There are four secondary level reports that draw together and summarise the data and observations from each of the four main areas of the consultation: Discussion Groups, Stakeholder Workshops, Web Consultation and the Citizens' Panel. The Discussion Groups Summary Report draws on eight detailed tertiary level reports that describe the processes and issues raised at each of the Discussion Groups. Similarly, the Stakeholder Workshops Summary Report draws on four detailed tertiary level reports that describe the processes and issues raised at each of the Stakeholder Workshops.

The reports of the consultation processes are as follows:

<b>The Final Report</b> (this document)			
<i>Drawing on Four</i>			
<u>Secondary Level Reports:</u>			
<b>Discussion Groups Summary Report</b>	<b>Stakeholder Workshop Summary Report</b>	<b>Web Consultation Report</b>	<b>Citizens' Panel Report</b>
<i>Drawing on the Eight</i>			
<u>Tertiary Level Reports:</u>			
<b>Bangor</b>	<b>Edinburgh</b>		
<b>Barrow</b>	<b>London</b>		
<b>Birmingham</b>	<b>Manchester</b>		
<b>London</b>	<b>Plymouth</b>		
<b>Oban</b>			
<b>Plymouth</b>			
<b>Rosyth</b>			
<b>Sellafield</b>			

These reports are available from the ISOLUS Public Consultation Website in PDF and RTF formats: <http://www.lancs.ac.uk/users/csec/isolus/isolus.htm>.

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## 15.2 Appendix II: Acronyms

AONB	Area of Outstanding Natural Beauty
AWAF	Active Waste Accumulation Facility
BAE	British Aerospace Engineering
BRDL	Babcock Rosyth Dockyard Limited
DEFRA	Department of Environment, Food and Rural Affairs
DML	Devonport Management Limited
DU	Depleted Uranium
EA	Environment Agency
ENGO	Environmental Non-Governmental Organisation
ILW	Intermediate Level Waste
ISOLUS	Interim Storage of Laid-Up Submarines
ISOP	Invitation to Submit Outline Proposals
MoD	Ministry of Defence
NATO	North Atlantic Treaty Organisation
NGO	Non-Governmental Organisation
NIMBY	Not in my back yard
PFI	Public Finance Initiative
PPP	Private Public Partnership
PSC	Public Sector Comparitor
RWMAC	Radioactive Waste Management Advisory Committee
SSSI	Site of Special Scientific Interest
WSA	Warship Support Agency