STAKEHOLDER INVOLVEMENT IN THE DEVELOPMENT OF A STRATEGY FOR MONITORING AND RETRIEVABILITY

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ABSTRACT

United Kingdom Nirex Limited (Nirex) is responsible for providing the United Kingdom with environmentally sound options for the long-term management of intermediate-level and some low-level radioactive waste generated by the Nation’s commercial, medical, research and defence activities. Monitoring and retrievability are key issues in the development of long-term waste management concepts. It is important that the views of a broad range of stakeholders are considered in the formulation of work programmes to address those key issues.

This paper describes how external stakeholders have influenced recent work carried out by Nirex on phased disposal of radioactive waste. It also describes recent steps Nirex has taken as part of an overall process to provide greater opportunity for people to influence future work on monitoring and retrievability of radioactive waste.

BACKGROUND

Nirex is examining options for the long-term management of the United Kingdom’s radioactive waste. One option, that Nirex has concentrated on in the past, is deep geological disposal. That experience is now being applied in the development of a generic disposal concept for ILW and certain LLW. The concept is based on a phased, reversible approach to disposal of the waste.

In such an approach, waste would be conditioned and packaged at waste producers’ sites and transferred for interim storage in engineered surface stores. As a first step towards deep disposal, the waste would be transferred underground to a repository for a period of underground storage. The underground storage environment would be carefully controlled to ensure continued package integrity.

Throughout the underground storage period the waste would be retrievable using the systems and equipment that had been use to emplace the waste. Provision would be made during that period for monitoring of the waste, the host rock and the environment within and outside the repository.

Monitoring and retrievability of waste are key issues in the development of a coherent concept for the long-term management of radioactive waste. This paper summarises how Nirex has sought the views of stakeholders to influence the development of a strategy for progressing work on monitoring and retrievability. External drivers that have influenced the work to date include a review of nuclear waste management by a House of Lords select committee [1] and the conclusions of a consensus conference on the management of radioactive waste [2]. In addition, the means by which stakeholders are involved in shaping the forward programme of work on monitoring and retrievability is described.
HOUSE OF LORDS REVIEW OF RADIOACTIVE WASTE MANAGEMENT

The House of Lords Select Committee report on the management of nuclear waste was published in March 1999 [1]. The Select Committee’s inquiry lasted 16 months and was prompted by the rejection of the Nirex planning application for a rock characterisation facility near Sellafield. Information from the rock characterisation facility was to be used to determine whether the site would be suitable for deep disposal of intermediate and certain low level radioactive wastes. The declared government policy at that time was for deep disposal of those wastes and rejection of the planning application led to a need to review that policy.

The Select Committee received oral and written evidence from a broad range of stakeholders in the UK. It also sought the views and experience of organisations in the United States, Canada, Sweden and France. The Committee accepted the view of experts in the UK and overseas that understanding of the issues made deep geological disposal a practical and desirable solution. However, it concluded that provision for monitoring and, if necessary, retrieval could and should be made for a considerable period of time and that sealing of sections of the repository should only take place when a sufficient level of confidence had resulted from continuing research and experience. The committee called this ‘phased disposal’ and recommended its adoption.

CONSENSUS CONFERENCE ON RADIOACTIVE WASTE MANAGEMENT

A consensus conference is a forum at which a citizens’ panel, selected from members of the public, questions experts on a particular topic. The panel then assesses the responses, discusses the issues raised, and reports its conclusions at a press conference. The citizens’ panel decides on the key aspects of the debate including choice of questions, selection of expert witnesses and formulation of its own conclusions. At the end of the conference, the panel produces a report outlining its conclusion and recommendations. That report is circulated to key decision makers in government and industry and to other interested parties.

The idea of holding a national consensus conference on radioactive waste management in the UK originally came from the UK Centre for Economic and Environmental Development (UK CEED). UK CEED are an independent charitable foundation committed to the promotion of environmental excellence within enterprise, government and individual activities. The project was funded mostly by the Parliamentary Office of Science and Technology (POST) and the Natural Environment Research Council (NERC). The remainder of the funding was provided by Nirex.

The citizens’ panel was a group of 15 people drawn from all regions across the country reflecting a range of different backgrounds. Great care was taken to ensure fair and independent recruitment of the panel, which was carried out by an independent market research company. The citizens’ panel was asked to focus on the effective and publicly acceptable long-term management of nuclear waste in the UK, both civil and military, concentrating particularly on intermediate and high level waste.

After a number of preparatory meetings the Consensus Conference on Radioactive Waste Management took place on the 21st – 24th May 1999. The panel asked nine questions and received oral and written presentations from a broad range of expert witnesses. One of the
panel’s key conclusions [2] was that waste must be removed from the surface and stored underground, but must be monitored and retrievable.

DEVELOPMENT OF A STRATEGY FOR MONITORING AND RETRIEVABILITY WORK

Work that has been carried out to date on monitoring and retrievability has been influenced by the conclusions of the House of Lords review and the consensus conference described above. Nirex recognises that the development of its future programme will benefit if a broader range of stakeholders can have access to and influence on that programme during its development phase. To achieve this it is intended that elements of the proposed programme of work is subject to preview.

We use the term “preview” to describe the process by which opinion is sought on the scope of a work programme, before the work is carried out. Its purpose is to allow a wide range of internal and external stakeholders to make inputs to the programme at the planning stage and to increase the transparency of decision making. Options for carrying out a preview include:

- Internal assessment
- Placing documents on the web
- Sending out documents to named individuals for comment
- Holding an open meeting
- Inviting a panel of named individuals to a meeting
- Asking a third party to distribute documents to anonymous referees

Table I summarises the respective advantages and disadvantages of the above options.
Table I Options for Preview of Forward Programmes

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>Internal assessment</td>
<td>• Uses in-house expertise</td>
<td>• Limited to internal opinion only.</td>
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<td></td>
<td>• Useful screening mechanism</td>
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<tr>
<td>Placing documents on the web</td>
<td>• An open process</td>
<td>• Cannot ensure that appropriate groups respond</td>
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<td></td>
<td>• Large potential international reach</td>
<td>• Respondents may be unrepresentative</td>
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<td></td>
<td>• Respondents do not need to be paid</td>
<td>• May be seen as an invitation to tender</td>
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<tr>
<td></td>
<td>• Could be used to identify sources of expertise</td>
<td>• Web site would need development to allow this approach</td>
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<td></td>
<td></td>
<td>• Web site must be monitored and responses given</td>
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<tr>
<td></td>
<td></td>
<td>• May not receive many responses</td>
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<tr>
<td>Sending out documents to named individuals for comment</td>
<td>• Can choose appropriate participants</td>
<td>• Cost / independence issues</td>
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<td></td>
<td></td>
<td>• May get no reply, adding delay to programme</td>
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<td></td>
<td></td>
<td>• May get a range of views, with no clear way forward</td>
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<td>Holding an open meeting</td>
<td>• Open process</td>
<td>• Can take a long time to organise</td>
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<td></td>
<td>• Encourages broad participation</td>
<td>• Costs can be high – difficult to predict size of venue needed</td>
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<td></td>
<td>• Useful for identifying broad areas where work is needed</td>
<td>• No control over who attends</td>
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<td></td>
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<td>• Difficult to manage - could be dominated by the most vocal groups or individuals</td>
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<tr>
<td>Inviting a panel of named individuals to a meeting – to help write a specification</td>
<td>• Increases ownership of specification</td>
<td>• Cost / independence issues</td>
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<td></td>
<td>• Encourages consensus building</td>
<td>• Participation often governed by availability</td>
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<td></td>
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<td>• Needs a good facilitator</td>
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<td>• Could be accused of bias</td>
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<tr>
<td>Inviting a panel of named individuals to a meeting – to review a specification</td>
<td>• Allows interaction</td>
<td>• Cost / independence issues</td>
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<td></td>
<td>• Encourages decision making on the day</td>
<td>• Participation often governed by availability</td>
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<td></td>
<td>• Encourages consensus building</td>
<td>• An established panel is viewed as a clique</td>
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<tr>
<td>Ask third party to distribute documents to anonymous referee</td>
<td>• Increases independence of the referee (who is not directly paid by Nirex)</td>
<td>• Referees may abuse their position to pursue their own agenda</td>
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Following consideration of the options available it was decided that the process for previewing the proposed monitoring and retrievability work programme should include a combination of four of the above options. A brief document describing the proposed strategy for progressing work on monitoring and retrievability was prepared and subjected to preview as follows.

(a) Internal assessment - because monitoring and retrievability can have implications on a range of issues and will benefit from the breadth of understanding of these across various disciplines within Nirex.
(b) Placing documents on the web - because of the potentially wide coverage and to show people visiting the web site, with a general interest in the topic, that they can become actively involved in the process.

(c) Sending out documents to named individuals for comment – because a number of individuals had already expressed an interest in the issues.

(d) Inviting a panel of named individuals to a meeting – because it allows a broad range of interests to be represented whilst keeping the meeting manageable. The disadvantages could be minimised by involving independent facilitators and good justification for the selected attendees.

Items (a) and (b) above are straightforward and need no further explanation. For item (c) the proposed strategy document was sent out to persons who had previously expressed some interest in the issues of monitoring and retrievability. They included members of the UK nuclear industry, environmental groups, regulators and UK CEED. Item (d) is described further in the next section of this paper.

MONITORING AND RETRIEVABILITY WORKSHOP

After deciding to invite a panel of named individuals to a meeting it was necessary to establish the format for the meeting and who to invite. The aim was to gain the most benefit from this option and avoid or minimise the disadvantages.

For the format of the meeting it was decided to hold a workshop, at a neutral venue, in which participants could work in breakout groups. The aim being to identify the issues that those groups felt should be addressed in future work on monitoring and retrievability.

The selection of participants to be invited was based on seeking representation from a range of stakeholders. Participants included members of the original citizens’ panel from the consensus conference described earlier. The participants were drawn from the following stakeholder groups:

- General public
- Local Authorities
- Non-Governmental Organisations (NGO’s)
- Scientists/Engineers
- Social Scientists
- Regulators
- International Waste Management Organisation
- Government Radioactive Waste Management Advisors
Individuals and organisations representing the nuclear industry were not invited to this event as Nirex is planning to a separate workshop for the industry, which was held in February 2001.

Nirex chose the groupings for the breakout sessions with the aim of bringing together groups of broadly common interests. The aim in grouping the members in this way was to gain an appreciation of the views of the individual stakeholder groups rather than to seek consensus on the key issues. This strategy was discussed and agreed with the facilitators for the workshop.

**WORKSHOP RESULTS AND INFLUENCE ON FORWARD PROGRAMME**

The workshop was held on 2nd December 2000 and the results are summarised below.

The workshop was chaired by an independent facilitator and it was agreed that comments would be non-attributable to encourage participants to speak freely. The individual breakout (or syndicate) sessions were facilitated by staff from Lancaster University Centre for the Study of Environmental Change (CSEC)

In the morning session a presentation on retrievability was given by Nirex followed by a meeting of the breakout groups to discuss this topic. The afternoon session covered monitoring in a similar way. The aim of the presentations was to provide background to the topic, to identify some general issues for consideration in order to stimulate discussion in the breakout groups.

The breakout groups then considered the issues and reported back to the workshop summarising the main issues to emerge from their discussions. Each group were allocated an independent facilitator, and the proceedings were chaired by an independent co-ordinator. Nirex staff did not participate in any of the breakout group discussions, but were available to the groups, if required, to respond to questions and queries and to provide information. The intent was for Nirex to listen to the views of the groups and subsequently consider how the issues raised should best be addressed.

A representative from each group gave a short presentation of the groups findings to the plenary session where further points were discussed. Some of the issues raised by the groups were not necessarily specific to the topics of discussion but were seen as important to overall considerations of radioactive waste management. A few of the issues raised are summarised below, but these have not been ranked in any order of importance:

**Retrievability**

- If retrievability of waste is a key objective then the preferred waste management option may not be deep disposal. Nirex should start with a blank sheet of paper and consider all potential options.
- Nirex should consider the full range of materials that could require long-term management as radioactive waste. Plans and designs should be developed for the full range of materials.
- Safety is paramount and must not be compromised.
• The timescales for retrievability must be open-ended. Work should take account of a potentially indefinite requirement for retrievability.

• There is plenty of time but Nirex should get on with it and get it right.

Monitoring

• Monitoring should not be restricted to technical issues. Broader issues such as monitoring of power generation strategies, stability of society, institutional competence and public opinion should be carried out and continued over long timescales.

• There is a need to establish who should be responsible for monitoring and who should review and check the results. The need for independence and the need to monitor the monitors needs to be addressed.

• Results of monitoring should be made publicly available in a standard form so that interpretation of results can be carried out by others.

In addition to specific issues there was some confusion over the Nirex position particularly in relation to its major shareholder and waste producer British Nuclear Fuels Limited (BNFL).

UK CEED staff acted as independent observers at the workshop, provided the technical secretariat and produced the final report of the workshop. The report includes summary reports of discussions in each breakout group, which were prepared by each of the facilitators from Lancaster University CSEC and reviewed by the participants. The complete report [3] including summaries of the presentations, plenary sessions and conclusions was prepared by UKCEED, reviewed by the independent facilitator. Nirex did not contribute to the preparation or editing of the report which can be accessed on the Nirex website on www.nirex.co.uk.

DISCUSSION AND CONCLUSIONS

Nirex’s aim in initiating this workshop on monitoring and retrievability was to benefit from the input of a wider group of stakeholders by providing a forum for discussion and interaction on topics, which form an important part of the future programme. Nirex believes that to achieve its mission it must be an open and transparent organisation. This will include commitments to:

• listening as well as talking to people who have an interest

• enabling people to have access to and influence on our future programme

These principles are being applied to all of our work areas and this paper has summarised their application to the future work programme on monitoring and retrievability. External influences on our work to date on monitoring and retrievability include the House of Lords Select Committee report on the management of nuclear waste and the UK National Consensus Conference on Radioactive Waste Management and the outputs from this recent workshop.

A number of options were considered for preview of the proposed future work programme on monitoring and retrievability. A combination of four different mechanisms was adopted for
the preview. In terms of external feedback, the workshop was the most successful. A broad range of participants were brought together to identify issues associated with monitoring and retrievability. Feedback from that workshop will be taken into account in the future programme of work on monitoring and retrievability. Sending out documents to named individuals elicited responses from about 20% of recipients. To date, only two responses have been received from placing the proposed strategy document on the web with an invitation to comment.

REFERENCES


3 ‘Workshop on the Monitoring and Retrievability of Radioactive Waste’ UKCEED in association with Centre for the Study of Environmental Change (CSEC) at Lancaster University.