

**PART II NOT FOR PUBLICATION BY VIRTUE OF PARAGRAPH 3
SCHEDULE 12A OF THE LOCAL GOVERNMENT ACT 1972 AS
AMENDED**

NDA Proposed Framework for MRWS Site Selection – Stage 4

CHAIRMAN:	Councillor Allan Holliday
PORTFOLIO HOLDER	Councillor Elaine Woodburn
LEAD OFFICER:	David Davies
REPORT AUTHOR:	David Davies

Recommendations

- That Members feedback comments in order to inform NuLEAF and NDA of our position prior to formal consultation.
- Comments to be made by 31 July 08.

Introduction

The following report is the NDA's proposed framework for site selection for stage 4 of the MRWS process. The document is for discussion from the NDA via NuLEAF. The report is for comment but not yet subject to formal consultation and therefore is restricted to Part II.

The comments received during the NWG discussion will form the basis of feedback to the next relevant NuLEAF officer meeting or Steering Group. This in turn will feed into NuLEAF's national pre consultation discussions with the NDA.

Background

This note has been produced by the Nuclear Decommissioning Authority (NDA) in response to a request from Government that the NDA will develop proposals for the approach to be used in Stage 4 of the MRWS site selection process. The proposals will be further consulted on and developed in the light of stakeholders' views. The approach to be used in Stage 5 of the site selection process will be developed in due course.

As explained in the MRWS White Paper the objective of Stage 4 is to identify one or more sites for undertaking surface-based investigations to test their suitability as the potential location for a geological disposal facility. Scotland is excluded from the process under the current policy of the Scottish Devolved Administration.

The proposals in this note represent an initial response to Government's request. They will be developed further in the light of further review, and consultation, including with

potential host communities, as noted in the White Paper. This version takes account of responses to the MRWS Consultation Document and of comments received from reviews of one or more earlier drafts by the Government's MRWS Implementation Planning Group (IPG), the Government's advisory Committee on Radioactive Waste Management (CoRWM), the Local Government Association's Nuclear Legacy Advisory Forum (NuLeAF), the regulators, the London School of Economics (LSE), and SKB (the Swedish Nuclear Fuel and Waste Management Company).

Following the period of further review and consultation in which the NDA will listen to the views of stakeholders, the proposals for the methodology to be used will be finalised and agreed by Government prior to publication. The methodology will then be put to the NDA for implementation by its delivery organisation. The NDA's delivery organisation will be required to report on the outcomes of implementation of the process to Government, who will then decide on the course of action to be followed.

Purpose

The main purpose of the document is to suggest a framework for Stage 4 of the MRWS site selection process, "Desk-based Studies in Participating Areas", following completion of Stages 2 and 3. It is important to recognise that the Government will own the overall site selection process. The NDA's delivery organisation will apply the process. As stated in the White Paper, the Stage 4 assessment will be reviewed by the independent regulators and subject to independent scrutiny by CoRWM and the outcome will be assessed by the regulators.

Key process points:

- The Community Siting Partnership would make recommendations to its local decision-making bodies about whether to proceed to the next stage of the site selection process;
- The decision-making bodies would decide whether they wish to proceed to the next stage of the site selection process;
- The Government would then decide on one or more candidate sites to take forward to Stage 5.
- The procedure will have to be applied consistently to all participating communities.
- There should be sufficient flexibility that the process could be revised at national level, with the agreement of siting partnerships, if necessary or desirable to do so as the process is implemented.
- The process will be designed so that sensitivity tests can be applied to its implementation in order to take account of local community views by exploring the influence of a particular issue or interest.
- In order to inspire confidence the process will have to be such that people can understand what is to be evaluated and how; and transparent, so that people can understand why the evaluations made are as presented and can readily question them.
- Therefore the process will be designed so that it is as simple as possible while remaining rigorous.
- No timescales have been assigned to the activities as it is important that sufficient time is given to enable effective PSE and robust decision-making.

TECHNICAL NOTE

**A Proposed Framework for
Stage 4 of the
MRWS Site Selection Process**

**June 2008
Number: 8150715**

TECHNICAL NOTE

**A Proposed Framework for
Stage 4 of the
MRWS Site Selection Process**

**June 2008
Number: 8150715**

CONDITIONS OF PUBLICATION

This report is made available under the NDA Transparency Policy. In line with this policy, the NDA is seeking to make information on its activities readily available, and to enable interested parties to have access to and influence on its future programmes. The report may be freely used for non-commercial purposes. However, all commercial uses, including copying and re-publication, require permission from the NDA. All copyright, database rights and other intellectual property rights reside with the NDA. Applications for permission to use the report commercially should be made to the NDA Information Manager.

Although great care has been taken to ensure the accuracy and completeness of the information contained in this publication, the NDA can not assume any responsibility for consequences that may arise from its use by other parties.

© Nuclear Decommissioning Authority 2008. All rights reserved.

BIBLIOGRAPHY

If you would like to see other reports available from NDA, a complete listing can be viewed at our website www.nda.gov.uk, or please write to the Library at the address below.

FEEDBACK

Readers are invited to provide feedback to the NDA on the contents, clarity and presentation of this report and on the means of improving the range of NDA reports published. Feedback should be addressed to:

John Dalton,
Head of Communications,
Nuclear Decommissioning Authority (Radioactive Waste Management Directorate),
Curie Avenue,
Harwell Campus,
Didcot,
Oxon,
OX11 0RH, UK.

Foreword

This note has been produced by the Nuclear Decommissioning Authority (NDA) in response to a request from Government that the NDA will develop proposals for the approach to be used in Stage 4 of the MRWS site selection process. The proposals will be further consulted on and developed in the light of stakeholders' views. The approach to be used in Stage 5 of the site selection process will be developed in due course.

Version 1 of this note was produced to obtain a review of initial ideas from the Government's Managing Radioactive Waste Safely (MRWS) Implementation Planning Group (IPG), the Government's advisory Committee on Radioactive Waste Management (CoRWM), the Local Government Association's Nuclear Legacy Advisory Forum (NuLeAF) and the regulators.

Version 2 took account of feedback from the IPG and NuLeAF and was produced to obtain initial advice from Professor Larry Phillips (London School of Economics, LSE) and SKB (the Swedish Nuclear Fuel and Radioactive Waste Management Company).

Version 3 took account of: the review comments of CoRWM and the regulators; the responses to the MRWS consultation; and the initial advice of Professor Phillips and SKB. It was produced for review by the IPG, the LSE and SKB.

Version 4 took account of review comments from SKB and of IPG members, and the advice of the LSE. It was produced for review by all the bodies that reviewed earlier versions.

This version of the note, Version 5, takes account of review comments on Version 4 and is published on the NDA's website in parallel with the Government's White Paper. The LSE and SKB have been asked to record their views on this version.

A record is being maintained by the NDA of the responses made to each input received in developing this note.

A Proposed Framework for Stage 4 of the MRWS Site Selection Process

Introduction

The Government has asked the Nuclear Decommissioning Authority (NDA) to use its knowledge and experience of siting processes undertaken in the UK and internationally to develop proposals for the approach to be used in Stage 4 of the Managing Radioactive Waste Safely (MRWS) site selection process. As explained in the May 2008 White Paper [1] the objective of Stage 4 is to identify one or more sites for undertaking surface-based investigations to test their suitability as the potential location for a geological disposal facility. Scotland is excluded from the process under the current policy of the Scottish Devolved Administration.

The proposals in this note represent an initial response to Government's request. They will be developed further in the light of further review, and consultation, including with potential host communities, as noted in the White Paper [1]. This version takes account of responses to the MRWS Consultation Document and of comments received from reviews of one or more earlier drafts by the Government's MRWS Implementation Planning Group (IPG), the Government's advisory Committee on Radioactive Waste Management (CoRWM), the Local Government Association's Nuclear Legacy Advisory Forum (NuLeAF), the regulators, the London School of Economics (LSE), and SKB (the Swedish Nuclear Fuel and Waste Management Company).

Following the period of further review and consultation in which the NDA will listen to the views of stakeholders, the proposals for the methodology to be used will be finalised and agreed by Government prior to publication. The methodology will then be put to the NDA for implementation by its delivery organisation. The NDA's delivery organisation will be required to report on the outcomes of implementation of the process to Government, who will then decide on the course of action to be followed.

In the White Paper the Government states that it sees no case for having separate disposal facilities for different types of higher activity wastes if one facility can be developed to provide suitable, safe containment for the Baseline inventory. We recognise that it may subsequently be shown that there is a need for more than one geological disposal facility. In this note we refer to a singular facility meaning one or more facilities, as are shown eventually to be required.

The Basis for Developing the Process within the MRWS Programme

The proposed sequence of activities for the development and application of Stage 4 of the site selection process is shown in Figure 1. The objective of Stage 4 is to support the identification by Government of one or more candidate sites for surface investigation in Stage 5 of the process. The approach to be used in Stage 5 of the site selection process will be developed in due course.

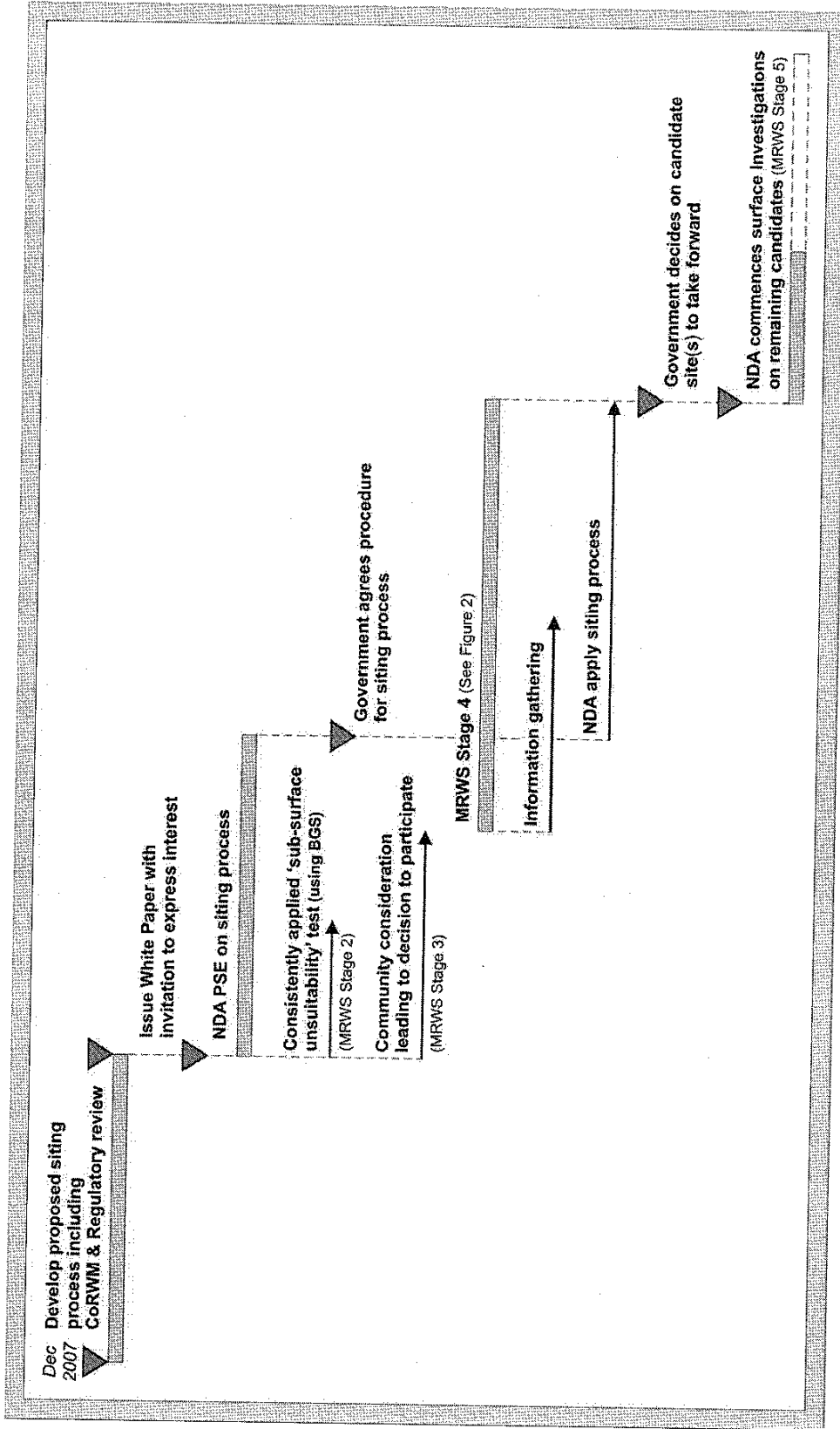


Figure 1. Development and application of the siting process

As shown in the Figure, this note represents a preparatory step in developing Stage 4 of the site selection process. It will be published in parallel with the issue by Government of the White Paper and an invitation to local communities to express an interest (Stage 1 of the MRWS site selection process). Public and stakeholder engagement (PSE) on the procedure for Stage 4 of the site selection process will be undertaken by the NDA in parallel with Stage 2, in which it is proposed by Government that the British Geological Survey (BGS) will be responsible for the consistent application of sub-surface screening criteria to the areas involved in initial expressions of interest. This is to eliminate from the process any area that is obviously geologically unsuitable. Also proceeding in parallel the local communities will consider a decision to participate in the site selection process (Stage 3).

The main purpose of this note is to suggest a framework for Stage 4 of the MRWS site selection process, "Desk-based Studies in Participating Areas", following completion of Stages 2 and 3. It is important to recognise that the Government will own the overall site selection process. The NDA's delivery organisation will apply the process. As stated in the White Paper [1], the Stage 4 assessment will be reviewed by the independent regulators and subject to independent scrutiny by CoRWM and the outcome will be assessed by the regulators. On the basis of these assessments and reviews:

- the Community Siting Partnership would make recommendations to its local decision-making bodies about whether to proceed to the next stage of the site selection process;
- the decision-making bodies would decide whether they wish to proceed to the next stage of the site selection process;
- the Government would then decide on one or more candidate sites to take forward to Stage 5.

The procedure will have to be applied consistently to all participating communities, so cannot accommodate differences in its specification, for example in the evaluation criteria to be applied, in response to individual community interests. However, there should be sufficient flexibility that the process could be revised at national level, with the agreement of siting partnerships, should it be found necessary or desirable to do so as the process is implemented. The process should also be designed such that sensitivity tests can be applied to its implementation in order to take account of local community views by exploring the influence of a particular issue or interest.

In order to inspire the necessary level of confidence the process will have to be such that people can understand what is to be evaluated and how; and transparent, so that people can understand why the evaluations made are as presented and can readily question them. Therefore the process will be designed so that it is as simple as possible while remaining rigorous.

No timescales have been assigned to the activities in Figure 1 because it is important that sufficient time is given to enable effective PSE and robust decision-making. Also, activities involving local communities such as expressing interest or deciding on continued participation may occur at different times for different communities. Following a decision to participate in

Stage 4 of the site selection process and the setting up of a community siting partnership, local partners will be involved in a preliminary review of their areas to identify potential candidate sites. The proposed process can only start once these have been identified. Siting partnerships must be allowed time to establish themselves and gather information. It will be important that they feel confident about the processes that will be used and a way of contributing to this would be to allow them time to comment on the developing proposed site selection framework, particularly at the stage just prior to its agreement by Government.

The proposals are not predicated on a fixed number of candidate sites being carried forward into Stage 5 of the site selection process, in line with the statement in the White Paper, "The Government would then decide on one or more sites to take forward to Stage 5." Regardless of the number of sites identified for surface-based investigations, clear and objective principles will be established to demonstrate potential suitability.

Question 9 of the MRWS consultation invited views on whether Government had identified the relevant assessment criteria and asked for comments on how the criteria should be applied at different stages. Responses included comments on the weighting of the criteria, the need for more detail on the proposed process and the need for criteria to reflect the views of potential host communities.

Analysis of the responses showed general support for the broad criteria proposed in the MRWS consultation document as a basis for assessment of sites. Responses did not identify any new broad criteria, but provided proposals of further factors that should be included within those already outlined.

In light of responses, the proposed criterion 'level of community support' has been removed by Government in the White Paper [1]. This is because it is already a central feature of the overall siting process and a key determinant in a community right of withdrawal. Government considers that the voluntarism process is based on community support and as such it would apply to all communities and sites.

The Government White Paper establishes that the six remaining broad criteria should be taken into account in carrying out the assessments, namely:

- geological setting
- potential impact on people
- potential impact on the natural environment and landscape
- effect on local socio-economic conditions
- transport and infrastructure provision
- cost, timing and ease of implementation.

Proposed Procedure

The remainder of this note proposes how these broad criteria will be used in Stage 4 of the MRWS site selection process. It is proposed that this will involve the definition of evaluation criteria, underpinning the broad criteria, the

development of a scoring methodology to be applied to these evaluation criteria, and the development of a process for establishing weightings for the evaluation criteria. In developing these proposals the NDA has taken account of the following:

- MRWS consultation – the procedure outlined in this note responds directly to the proposals presented in the White Paper that take account of the June 2007 Consultation document [2].
- Responses to the MRWS consultation – a record will be made available to show how each response pertaining to site selection has been addressed.
- CoRWM proposals on implementation concerning site selection [3]
- The literature in academic and professional circles on site selection – one of the leading centres of expertise having considerable experience of many similar projects, the LSE, has been commissioned to ensure this is taken into account [4]
- Successful site selection processes in other countries – SKB (Sweden) has been commissioned to provide advice on the basis of its experience of siting a geological disposal facility for spent fuel [5].

The broad criteria to be applied in Stage 4 of the MRWS site selection process were subject to consultation through the June 2007 Consultation document. Evaluation criteria and the methodology for their use will be further developed through PSE following publication of these proposals alongside the White Paper and will be subject to potential change as a result. As will be described below, the methodology for scoring and applying weightings will be designed to include the influence of national and local stakeholders. In practice a balance has had to be struck in this note between being unduly prescriptive in specifying elements of the procedure, so appearing to foreclose the role of PSE, and providing only superficial proposals, that would make it difficult for public and stakeholders to engage meaningfully.

The NDA proposes that an approach based on multi-criteria decision analysis (MCDA) should be used to assess sites against the evaluation criteria. MCDA is a methodology that is generally accepted by decision scientists and there is a large base of knowledge and experience of its application to draw upon. It was used successfully by CoRWM to evaluate waste management options under the MRWS programme and valuable experience was gained in the use and presentation of scoring systems [3,4].

In summary, MCDA shows how to decompose a complex problem into its constituent parts, namely:

- objectives that are to be achieved;
- criteria for measuring achievement of the objectives;
- preference scores representing the appraisal of the options on the criteria; and
- weights to reflect the relative importance of the criteria.

Each of those parts can be the subject of a separate process, identifying the criteria, scoring the options on the criteria and weighting the criteria. MCDA shows how to reassemble the parts, allowing decision makers to see the

holistic picture, providing graphical displays of the extent to which the options achieve the objectives, and how the options do this in different ways from each other. The resulting MCDA model becomes a vehicle allowing decision makers to explore the effects of uncertainty in the data and differences of opinion between stakeholders.

For the application of MCDA in Stage 4 of the MRWS site selection process, the NDA proposes four distinct sets of inputs, as follows:

- Information gathering to provide data and conduct technical modelling that can inform scoring of sites against evaluation criteria.
- Expert workshops to review and agree evaluation criteria, to agree scoring scales and to score the sites against the criteria.
- PSE workshops to ensure that all key evaluation criteria are included in the MCDA model, to obtain stakeholder views about criteria weighting and to provide feedback on the project as it progresses.
- 'Up-date workshops' involving key staff in the NDA delivery organisation at periodic intervals, to continue development of the MCDA model as data become available, and to use the model to explore what additional data needs to be obtained because it could make a difference to the results.

Evaluation Criteria

As stated in the White Paper, analysis of the responses to the MRWS Consultation Document showed broad support for the criteria that it proposed as a basis for evaluation of sites. Responses did not identify any new broad criteria but provided proposals of further factors that should be included within those already outlined. Suggestions were also made that specialist organisations with knowledge and experience of the indicators that are used in response to relevant legislation and directives, for example Natural England in the case of criteria relating to the environment, should be consulted. The proposed review and consultation process for developing the criteria will accommodate these suggestions.

Several responses emphasised that geological conditions have an important bearing on the long-term safety of a geological disposal facility (the safety of the facility after it has been sealed and closed). The NDA has concluded that long-term safety should be treated as an essential requirement that runs through the entire site selection process. At Stage 4 a number of different, but all potentially suitable, geological settings could be involved in the evaluations. In turn these could be matched to rather different disposal facility concepts in order to provide the necessary levels of isolation and containment of radioactivity under the geological conditions. Also, at this stage, there may be considerable uncertainty about the precise geological conditions at depth. Therefore it is not realistic to propose the use of quantitative assessments of long-term safety in evaluating sites at Stage 4. Once sufficient information on geological conditions became available in the subsequent Stage 5 of the process to enable the identification of a preferred facility design and the conduct of quantitative assessments of that design, then measures of long-term safety would be used in the evaluation of sites.

In its response to the MRWS Consultation Document, the Environment Agency (EA) proposed an approach for assessing the long-term safety at sites when various facility designs might be adopted and there is uncertainty about geological conditions. The NDA has adopted and developed this approach to propose that for any candidate site to remain in the site selection process and be carried through to Stage 5, the following conditions must be met:

- a) There must be an ability to develop a conceptual facility design appropriate to the host geology that is likely to meet operational and long-term safety requirements, and security and safeguards requirements ; and
- b) A preliminary assessment must show the likely acceptability of a facility at the site judged against the siting principles that are provided by the regulators [6] and international organisations, in particular the International Atomic Energy Agency [7]. (The preliminary assessment should include, to the extent possible using available information, consideration of natural processes such as climate change or seismicity; the impact on potentially exploitable assets and the potential for human intrusion, these being factors identified in the June 2007 Consultation Document).

Generally the feedback, both from the responses to the MRWS consultation and from reviews of earlier versions of this note, lead us to propose that the broad criteria should be redefined as objectives and that the achievement of these objectives should be judged in terms of evaluation criteria appropriate to the site selection process.

So, from this point on we will discuss the six objectives and the evaluation criteria that sit within them.

The objectives and the evaluation criteria are listed below. Most of these evaluation criteria derive from Annex C in the June 2007 MRWS Consultation Document but include additional ones identified in the consultation responses. They also attempt to recognise where there can be both positive and negative impacts and eliminate any duplication. The evaluation criteria within each general objective will be further reviewed, and revised if necessary, taking account of the PSE to be conducted in parallel with Stages 2 and 3 of the site selection process.

There is general agreement amongst decision scientists on the characteristics of good evaluation criteria. They should be understandable, measurable (in the sense of assessing the extent to which a site realises an objective), non-redundant (i.e. have relevance to the objective), judgementally independent (i.e. capable of being evaluated without knowledge of evaluations on another criterion), provide a balance between completeness and conciseness, operationally feasible to use (i.e. not requiring an unreasonable amount of effort to use), and requisite (i.e. just sufficient to resolve the issue at hand).

The evaluation criteria are proposed to support the identification of candidate sites capable of hosting a geological disposal facility. In this context geological disposal is defined in line with the recommendations made by CoRWM [3] and does not include alternative waste management options such as deep

borehole disposal that would require markedly different assessments¹. This does not preclude the development of a process through which such alternatives could be assessed and considered in due course.

The Six Objectives To Be Considered

Find a Suitable Geological Setting

The geological setting of a disposal facility will be an important contributor to the achievement of long-term safety, as discussed above. Points in the approach suggested by the MRWS consultation response from the Environment Agency (EA) would ensure that the intrinsic qualities of potentially very different geological settings were evaluated in a meaningful way for the decision at hand. The proposed evaluation criteria to underpin the objective of finding a suitable geological setting are largely derived from the EA response, and at the moment are as follows:

- The size of the potentially suitable volume of host rock;
- The level of technical challenges from construction and engineering conditions and the availability of knowledge and technology by which they can be overcome;
- The level of difficulty to ultimately characterise the site; and
- The robustness of the eventual safety case, based on likely geological and hydrogeological characteristics.

These include consideration of factors given in Annex C of the Consultation Document, but in a manner that reflects the uncertainty about geological conditions at this stage. Clearly, once information came forward from surface investigations in Stage 5 of the site selection process, evaluations would be made on a more quantitative basis.

Minimise the Potential Impact on People

The evaluation criteria are at the moment proposed to be:

- Impacts on human health and safety during the site investigations, construction, operation and closure of the facility²;
- Impacts on other human activities (social and industrial);
- Level of nuisance or disturbance created;
- Impact on local cultural heritage and land-use requirements.

¹ In line with Government's response to the relevant CoRWM recommendation, international progress on research into alternative options will be monitored and the required assessments of alternative options will be part of Strategic Environmental Assessment and Environmental Impact Assessment studies conducted within the overall implementation programme.

² This does not include long-term safety following closure of the facility for the reasons set out under Evaluation Criteria.

Minimise the Potential Impact on the Natural Environment and Landscape

The evaluation criteria are at the moment proposed to be:

- Impacts on flora, fauna, biodiversity, air quality, water, soil, carbon emissions, landscape and visual aspects;
- Impacts on national parks, areas of outstanding natural beauty, sites of special scientific interest and European designated sites;
- Impacts on the nationally important built environment.

The first of these evaluation criteria consists of a large number of aspects of the natural environment that may be affected. The most appropriate method for treating these impacts in Stage 4 of the site selection process will be explored in the forthcoming PSE on these proposals.

Maximise the Beneficial Effect on Local Socio-economic Conditions and Minimise any Adverse Effect

The evaluation criteria are at the moment proposed to be:

- Impacts on provision of employment, economic growth and regeneration opportunities;
- Potential impacts of population changes.

Minimise the Requirement for Transport and Infrastructure Provision

The evaluation criteria are at the moment proposed to be:

- Extent of transport requirements;
- Impacts of transport operations and required transport infrastructure;
- Availability of existing infrastructure.

The second of these evaluation criteria potentially overlaps with evaluation criteria within the general objectives of minimising the potential impacts on people and on the natural environment and landscape. However, it is clearly related to the requirements for transport and infrastructure provision. The treatment of these transport-related impacts in Stage 4 of the site selection process will be explored in the forthcoming PSE on these proposals.

Minimise Cost and Timing and Maximise Ease of Implementation

The evaluation criteria are at the moment proposed to be:

- Duration and cost of site characterisation and assessment;
- Cost of construction, operation and closure;
- Use of natural resources;
- Challenges from handling of non-radioactive wastes from construction activities (e.g. rock spoil, drained groundwater)

Scoring Methodology

In line with the scoring system that was used successfully by CoRWM, it is proposed that sites will be given scores between 1 and 9 against each evaluation criterion. The score indicates the extent to which the option performs against the criterion in meeting the over-arching objective. A score of 1 will indicate the minimum level of acceptability of a site against the given evaluation criterion and 9 the highest that is considered technically feasible. By defining a minimum level of acceptability for each of the evaluation criteria, any candidate site that is below this threshold will be eliminated in Stage 4 of the site selection process.

It is recognised that some of the evaluation criteria identified in the preceding section of this note are closely related and that this is an issue that needs to be addressed in the site assessment methodology. Advice from the LSE is that this is not a problem as long as the score on one evaluation criterion can be determined without knowing the score on the related evaluation criterion.

At this point it is helpful to illustrate the activities that we propose will comprise Stage 4 of the MRWS site selection process in Figure 2.

Once a community has decided to participate, information gathering can be carried out as a first step in Stage 4. Initially this will involve collating data concerning only the general area because an important step for the participating community will be the establishment of a siting partnership and the subsequent identification by the partnership of one or more candidate sites. Only then can information be gathered that is specific to candidate sites, leading eventually to the provision of a suite of site-specific data. With knowledge of the information and of the evaluation criteria against which it will be judged, scoring scales will be developed to define how the 1 to 9 scoring system will be applied to each of the evaluation criteria, to be applied consistently to all sites. This will require a short description of what leads to a given score against each evaluation criterion and will be subject to review and advice from CoRWM and subsequent agreement with the NDA and siting partnerships.

It is proposed that expert workshops facilitated by a decision analyst will be held to review the evaluation criteria and scoring scales, and then to score the sites against the evaluation criteria. In view of the different expertise required in respect of the six objectives to be met by the site, it may be necessary to hold separate sets of workshops for each of the six objectives, involving experts in the relevant field. The experts would be chosen to represent the diversity of expert views in the relevant field, but the number of experts would be that requisite for undertaking an effective process. It is recognised that valuable insights are obtained from participation in the scoring process and it would therefore be helpful if a specialist representing siting partnerships were to be involved.

In order to facilitate the process in the workshop provisional scores against the agreed evaluation criteria could be tabled with an explanation by

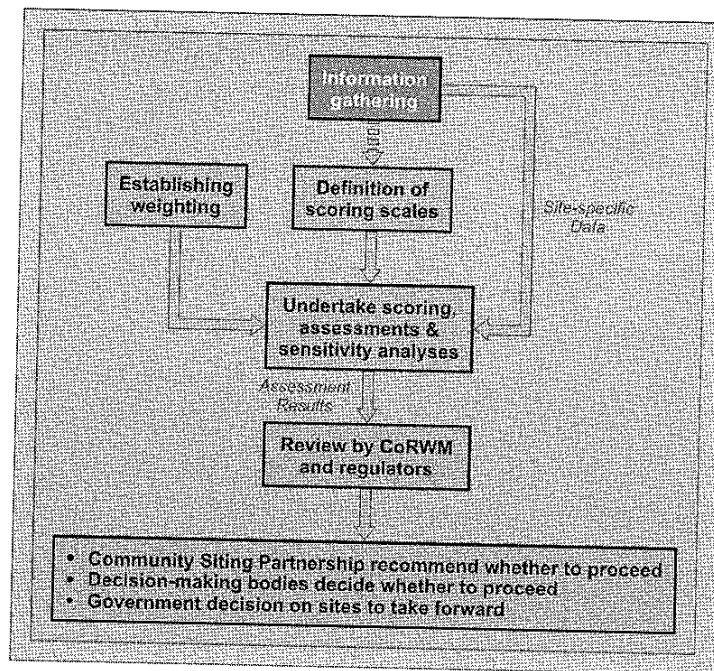


Figure 2. Activities Comprising Stage 4 of MRWS Site Selection Process

reference to the relevant site-specific data. The workshop would then comment on the analysis conducted and come to a view on any requirements for additional information or changes before agreeing a set of scores for the relevant evaluation criteria.

Past experience shows that it would not be advisable for workshops to operate in complete isolation from one another. The NDA's delivery organisation would ensure that all workshops shared a consistent set of assumptions and that if necessary groups working on different objectives were brought together. CoRWM will be invited to attend the scoring workshops as observers for the purpose of scrutinising the process.

The resulting reports on the inputs to the workshops and scores against each evaluation criterion will be issued by the NDA's delivery organisation in draft form for review, as a minimum by CoRWM, regulators and participating communities, supported by technical specialists as appropriate. A facilitated, participative workshop might provide a good means of obtaining feedback and building stakeholder confidence in the outcomes at this point. When the evaluations and scores are finalised on completion of this process, CoRWM should advise Government whether the evaluation criteria have been applied consistently at each of the sites.

Relative weightings of the evaluation criteria will be established by the process outlined in the next section and then used with the assigned scores for each evaluation criterion to obtain an overall score for each candidate site. Again as outlined in the next section, sensitivity analyses will be carried out to explore the influence of different scores and relative weightings on the outcome of the assessment.

Once the assessment results have been finalised, the process laid out in the White Paper will be followed as summarised in Figure 2, leading to a Government decision on sites to take forward.

Process for Weighting the Evaluation Criteria

It is proposed that the weighting system will be based on added value associated with each evaluation criterion, usually referred to as 'swing-weighting' in MCDA. In order to achieve an open and transparent procedure for designing the site selection process, it is desirable that weighting of the evaluation criteria is considered before and alongside the stage of evaluating the sites. The LSE advises that weightings can be established before sites are assessed if the points 1 to 9 on the scoring system have been defined for each evaluation criterion.

The NDA's delivery organisation would use the model to explore the results under different scores and weights, obtaining different weights that reflect the concerns of different stakeholders (as was done by CoRWM) as part of its PSE programme on this process. PSE workshops, involving representatives of siting partnerships will be held to obtain stakeholder views about the weighting of evaluation criteria for use in these sensitivity tests.

Generally the assessment process will be participative in facilitating the involvement of stakeholders, and siting partnerships in particular, in review of key proposals and outputs (e.g. the scoring system) and in conducting sensitivity tests based on variations in evaluation criteria weightings. The full range of sensitivity tests applied and the process of doing the tests must be transparent, open to quality assurance review by MCDA specialists and verifiable by an independent body such as CoRWM.

The overall evaluation process, including the application of weighted evaluation criteria, does not produce a decision as its output; rather it is a decision-aiding process. As stated in the White Paper [1] the Government will make the decision on the one or more candidate sites to be taken forward into Stage 5 for surface investigations on the basis of the outputs from this work and reviews by CoRWM and the regulators.

Next Steps

The proposals in this note have been developed using inputs from the Government's MRWS IPG, CoRWM, NuLeAF, the regulators, the LSE and SKB. The note is now published alongside the Government's publication of its White Paper as an initial response to Government's request to develop these proposals. SKB and the LSE have provided comments on the published version of the note [8, 9].

The proposals will be developed further in the light of further review and consultation, including with potential host communities, as noted in the White Paper.

References

- 1 Department for Environment, Food and Rural Affairs; Department for Business, Enterprise and Regulatory Reform; Welsh Assembly Government; Northern Ireland Department of the Environment, "Managing Radioactive Waste Safely – A Framework For Implementing Geological Disposal: White Paper", May 2008.
- 2 Department for Environment, Food and Rural Affairs; Department for Trade and Industry; Welsh Assembly Government; Northern Ireland Department of the Environment, "Managing Radioactive Waste Safely – A Framework For Implementing Geological Disposal: A Public Consultation by Defra, DTI and the Welsh and Northern Irish Devolved Administrations", June 2007.
- 3 CoRWM, "Managing our Radioactive Waste Safely – CoRWM's Recommendations to Government: Final Report", 2006.
- 4 London School of Economics. "Review of NDA Site Selection Principles and CoRWM Comments: Report to NDA-RWMD", June 2008
- 5 SKB, "Notes of a Meeting with NDA at SKB Offices in Sweden on 19 March 2008", March 2008
- 6 Environment Agency, Scottish Environment Protection Agency, Department of the Environment for Northern Ireland, "Disposal Facilities on Land for Low and Intermediate Level Radioactive Wastes: Guidance on Requirements for Authorisation", 1997 – to be superseded by new guidance later in 2008.
- 7 International Atomic Energy Agency, "Siting of Geological Disposal Facilities: A Safety Guide", Safety Series No. 111-G-4 1, 1994.
- 8 SKB, "SKB Review of Version 5 of the Proposed Framework for Stage 4 of the MRWS Site Selection Process", Letter from Claes Thegerstrom (President) to Bruce McKirdy (NDA-RWMD), 16 May 2008.
- 9 LSE, "Comments on Version 5 of the Proposed Framework for Stage 4 of the MRWS Site Selection Process", Letter from Larry Phillips to Bruce McKirdy (NDA RWMD), 4 June 2008.

Radioactive Waste Management Directorate
Nuclear Decommissioning Authority
Curie Avenue
Harwell, Didcot
Oxfordshire
OX11 0RH

☎ +44 (0)1235 825500

☎ +44 (0)1235 831239

🌐 www.nda.gov.uk

© Nuclear Decommissioning Authority 2007