The Environment Council

BNFL NATIONAL STAKEHOLDER DIALOGUE

Business Futures Working Group

December 2004

FINAL REPORT

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Executive Summary

The Business Future Working Group (BFWG) of the BNFL National Stakeholder Dialogue was mandated by the Main Group meeting in November 2002. It addressed a number of aims relating to:

- the development of the Nuclear Decommissioning Authority (NDA)
- the development of BNFL (the Company) strategy
- potential other business for the Company
- guidance on recommended ways forward

The BFWG (or Group) addressed these aims taking account of the work of previous working groups, the context of ongoing policy development; the sustainable impacts of business futures; and giving priority focus to legacy waste cleanup and public and workforce protection.

During the period of the Group's work the nuclear industry and related sectors have operated in a rapidly changing business environment. The BFWG has attempted to reflect these developments in all areas of its work and has provided a synopsis of the changes, and their perceived effects. The Group has also identified those areas of work where, mainly for reasons of lack of time, progress was unable to be made. These areas are identified as potential topics for future stakeholder consideration.

The work of the Group was organised into a number of workstreams, which evolved as the Group gained experience:

- The BFWG developed the 'Principles for Liabilities Management', which was shared with DTI during the development of the NDA and which the Group still considers should underpin future considerations by an NDA National Stakeholder Group. A particular aspect of these Principles developed further by the BFWG was a review of contractorisation issues. The Group also provided advice on the development of NDA's stakeholder engagement structure and arrangements.

- The Group provided input to the Company on the overall structure and role of a future 'new BNFL', and provided feedback on the implications of the DTI / BNFL joint strategic review. Further input to the Company was provided in the areas of future stakeholder engagement and the first BNFL Corporate Social Responsibility report. The Group initiated an updated West Cumbria Socio-Economic report based on the original work done for the Spent Fuel Management Options Working Group.

- A significant piece of work on behalf of the Group was a joint fact finding study on Diversification (which is published separately). In addition, BFWG developed a generic framework to assist stakeholders in the examination of the Company's Life Cycle Baseline (LCBL) plans produced in response to NDA requirements.

- BFWG also provided inputs to BNFL, NDA and Government Departments on the development of principles for Prioritisation, a Hazard Indicator, and site end points.

- During its work the Group took notice of all previous working group recommendations and developed these into a single consolidated document to which BNFL provided a response, and against which future progress could be monitored.

The Group commends its report to BNFL, together with other policy and decision makers in nuclear related activities, and advocates its use by the NDA as an input to the development of its roles and responsibilities.

Foreword

Aim of the BNFL National Dialogue
The BNFL National Dialogue involves a wide range of organisations and individuals interested in or concerned about nuclear issues. Its aim *is to inform BNFL's decision-making process about the improvement of their environmental performance in the context of their overall development.*

The dialogue is open to national organisations and regional groups as well as well as expert and specialist concerns. If you would like more information, visit www.the-environment-council.org.uk or contact The Environment Council on 020 7632 0143.

Guidance on Interpreting this Report
The principle purpose of working group reports is to inform the deliberations of the Main Group of stakeholders in the dialogue and any related decisions or activities they might undertake.

Participation (by organisation or individuals) in either the overall dialogue or the working groups must not be taken as an indication of support or disagreement with BNFL's activities.

Any quotes from the reports used in talks, articles, consultation papers and/or other documents published on paper or electronically must be put within the context given within the relevant section of the working group's report. The Environment Council strongly advise those considering quoting from the reports to forward their proposed text for review to Rhuari Bennett (e-mail: rhuarib@envcouncil.org.uk)

The role of the convenor
The convenor of the dialogue is The Environment Council, an independent UK charity. The Environment Council is responsible for designing and facilitating each stage in the dialogue, and provides relevant support, like issuing invitations and booking venues.

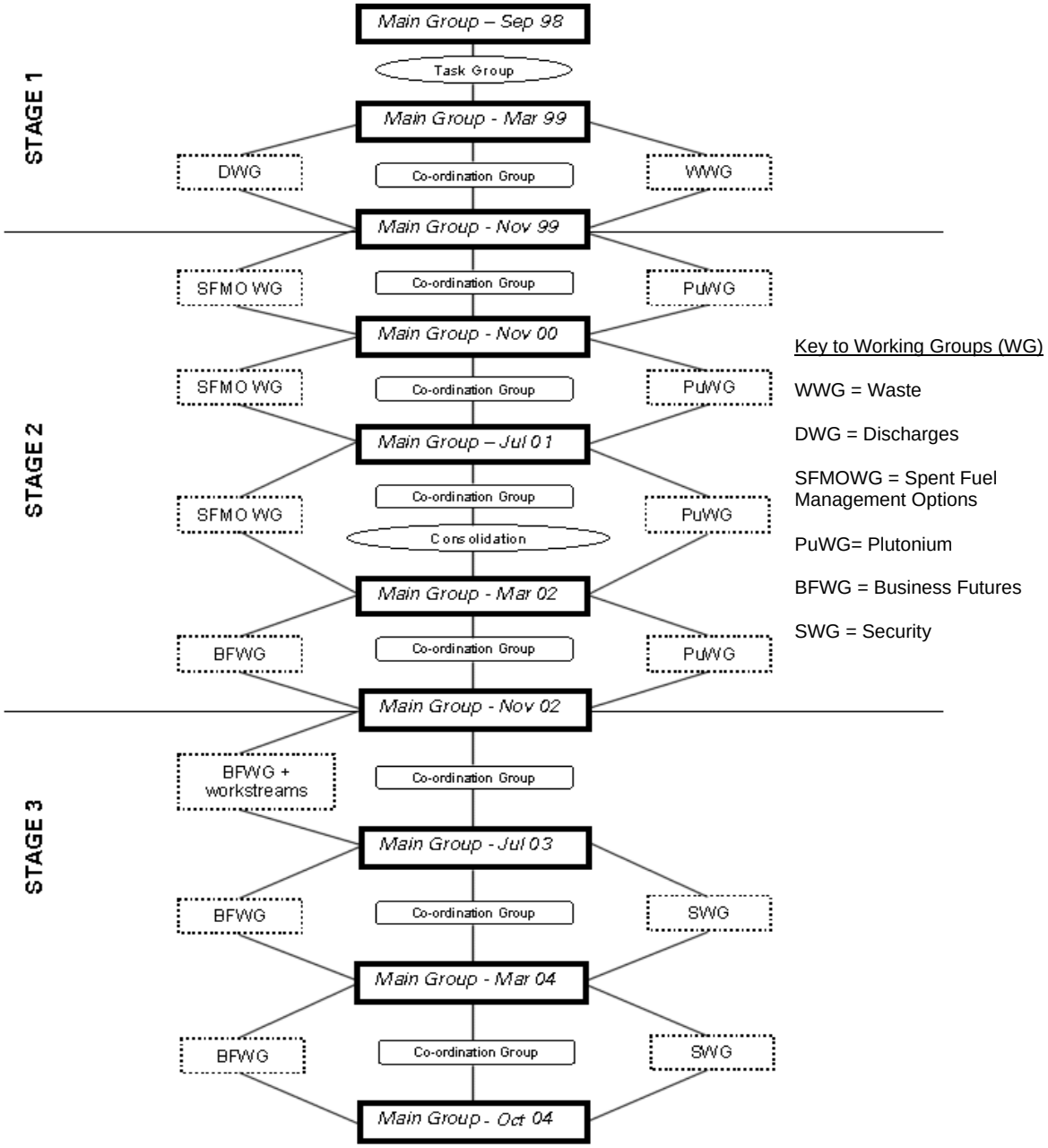
The Environment Council is not responsible for any issue discussed in the dialogue, and holds no formal position on any of the substantive issues that are or might be considered. It is for the participants to decide what issues are raised, how they might be addressed and how any observations, conclusions and recommendations might be recorded and communicated.

The website of The Environment Council, www.the-environment-council.org.uk displays a full history and evolution of the Dialogue, as well as all of the reports that have been produced from the process.

The Environment Council, November 2004.

History of the BNFL National Stakeholder Dialogue

The diagram below outlines the inception and evolution of the BNFL National Stakeholder Dialogue process. A more detailed history and explanation of each of the groups, together with the reports produced and lists of group members is available at www.the-environment-council.org.uk



Notes:

- The Coordination Group is responsible for providing guidance on linkages and continuity between groups, as well as identifying problems and "potential wobbles".
- "Socio-Economic" and "Transport" issues were discussed throughout the process.

Contact Rhuari Bennett for more information on 0207 632 0134, rhuarib@envcouncil.org.uk

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Table of Contents

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1. Overview of the Work of the Business Futures Working Group – Setting the Context for the Report

The BNFL National Stakeholder Dialogue was established in 1998 '*to inform BNFL's decision-making process about the improvement of their environmental performance in the context of their overall development'.* Since then, the nuclear industry and related sectors have operated in a rapidly changing business environment. On all levels – policy, strategy, structure and political – change has swept the industry. This Section of the report has been provided to set the Dialogue within the context of these changes to the business environment that could not have been predicted six years ago.

Engagement with stakeholders has become an accepted and increasingly common means of identifying and addressing their concerns. This development, of which the BNFL National Stakeholder Dialogue is probably the largest and most ambitious example in Europe, has brought its own problems of stretching stakeholder resources, consultation fatigue and increasing expectations that are sometimes difficult to articulate, address or meet. In addition, the changing business environment has served to generate its own challenges to the Dialogue and its stakeholders.

Since these changes have been undoubtedly germane to BNFL's future, they affected the scope of the issues considered by the Business Futures Working Group (BFWG). In the time available, the BFWG has not been able to address all of these issues in detail, but some of the more significant are identified below. It is worth noting that the BFWG received specific guidance from the Company on the need to respond to and move with the reality of these changes. This has led to the BFWG making a number of recommendations which are directed to organisations other than the Company and which address issues wider than strictly environmental performance.

The Nuclear Decommissioning Authority (NDA), first proposed in the 'Managing the Nuclear Legacy' White Paper in July 2002, is now established and its creation has fundamentally altered the landscape for the Dialogue sponsoring company. BNFL will now change from being an owner/operator company to an NDA contractor. The NDA will assume upwards of £50 billion-worth of civil nuclear liabilities on behalf of the UK public that previously sat with BNFL, Magnox Electric and the UKAEA.

Transfer to the NDA of ownership of commercially operating plants, such as the Magnox nuclear power station fleet, the Sellafield plants that reprocess spent Magnox fuel, the Sellafield Thermal Oxide Reprocessing Plant (Thorp) and the Sellafield Mox Plant (SMP) is a controversial issue. Many stakeholders fear that BNFL's perceived commitment to continued reprocessing and nuclear-generated electricity, with all the attendant issues that the Dialogue has grappled with over the last six years, will simply transfer to the NDA.

A significant event in late 2002 was British Energy's (BE) announcement that it was at risk of going into receivership. As part of a Government backed restructuring of the Company, the Government proposed that, in the event the existing segregated fund proved to be insufficient, it would underwrite BE's decommissioning and uncontracted liabilities. Also, as part of the negotiated package, BNFL agreed to take title to BE's spent fuel, loaded into its reactors after the date formal restructuring would come into effect, on delivery to Sellafield. Restructuring of BE is awaiting EU State Aids approval and if this is successful

then the NDA will ultimately become responsible for discharging BE's spent fuel arisings through storage or reprocessing.

These developments have led to concern by some stakeholders that should the Government revive the nuclear option as part of the future energy mix of the UK, the NDA, and not the operators, will be required to make provisions for the receipt of spent fuel thus created. This would, in the view of some stakeholders, compromise the perceived role of the NDA as trailed in the White Paper as a nuclear waste legacy clean-up authority. In particular, the importance given to the "value-for-money" requirement placed by the Government on the NDA, has led to fears that the NDA will be increasingly driven by its commercial needs to meet funding shortfalls. This situation, created by the Government's policy framework, has led to potentially serious misconceptions as to the purpose of the NDA. Some stakeholders now see NDA more as an enabler for new nuclear build rather than a waste clean-up authority.

In 2003 the Government established the Committee on Radioactive Waste Management (CoRWM) and charged it with identifying long-term radioactive waste management options and making recommendations to Ministers by June 2006. CoRWM is attempting, in a very short space of time, to undertake a programme to compare waste management options in a manner that will instil confidence in the public and other stakeholders and give legitimacy to an issue that is perceived as having been poorly dealt with for decades.

In the light of these, and other emerging issues, over the last three years the focus of attention of the BFWG has inevitably been drawn towards the NDA and the huge impact it will have on BNFL not only in operational terms but also in terms of any on-going stakeholder engagement. The BFWG's deliberations took place in an environment of constantly shifting expectations and targets and, inevitably, much of its work involved examining the ways in which BNFL would interface with the NDA. Throughout, the BFWG were conscious of the fact that they needed to avoid becoming more of a sounding board for the NDA development process than a dialogue group producing recommendations to BNFL.

Particular areas of concern to the BFWG have been the delivery of clean-up through competition and the commitment of the NDA to the principles of incentivisation and contractorisation. Overall the BFWG remains unconvinced that the arrangements as currently proposed will be able to deliver safe and effective clean-up without demonstration from Government as to how it will operate in practice.

In recent years BNFL has undergone radical restructuring to meet the challenges of its future role as a fit-for-purpose contractor on the sites it currently owns throughout the country. Yet it will still have to compete hard for the right to continue to manage its former sites as, within a few years, it could potentially be replaced by domestic or foreign contractors, many of whom claim that they could manage the clean up of UK waste more effectively.

A major issue the BFWG looked at was BNFL's potential for diversifying its core business as well as restructuring the Company. This review explored possible non-nuclear applications of BNFL's intellectual property rights, but noted that the Company's ability to diversify in West Cumbria is hampered by geography, scale and lack of appropriate infrastructure.

Beyond decommissioning and clean-up, while the Company believes that there will be a revival in nuclear technology for electricity generation, in the UK this will be dependent on policy decisions made as a result of a further review of nuclear power within the next few years. The BFWG notes that internationally the future of nuclear power remains controversial, with concerns about the spread of nuclear technology and material heightened by recent terrorist atrocities.

Overall, BNFL's business future is decidedly uncertain as it undergoes a profound transformation, but ultimately its future and its ability to change lies in the hands of its shareholder the Secretary of State for Trade and Industry.

2. BFWG Aims and Work Programme

2.1 The aims of the BFWG as agreed by the Main Group are:

1. *Providing analysis and advice to the Company on the impact of the development of the LMA, and informing the Department for trade and industry's (DTI's) LMA development process[1].*
2. *Reviewing/monitoring the development of the Company's strategy in respect of providing services to governments and nuclear utilities.*
3. *Identify other business futures the Company might adopt, including the examination of non-nuclear business futures.*
4. *Develop guidance to the Company on recommended ways forward, including milestones and targets where appropriate.*

2.2 In undertaking its work, the BFWG has had regard to the following background issues:

1. *The outputs of the previous working groups.*
2. *The context of on-going policy development (such as waste management, decommissioning etc.).*
3. *The sustainability impacts of business futures e.g. radiological and other environmental impacts, employment, ethical and other considerations at all levels (locally, regionally, nationally and globally).*
4. *A priority focus on legacy waste cleanup and public and workforce protection.*

2.3 Work Programme

The 7th Main Group Meeting in November 2002 mandated the BFWG to undertake a work programme to progress these aims. The work of the Group has been organised into a number of workstreams to deliver these aims, having regard to the time and resources which were available to the Group. The workstreams have evolved during the lifetime of the Group. This report summarises these final workstreams, providing information on the activities, products to date, and work in each area.

2.4 Reports

Since the Group has been mandated, it has produced a number of interim reports which have been submitted to, and endorsed by, the Main Group. These reports are available on The Environment Council website[2].

[1] Since the start of the BFWG, the Liabilities Management Unit (LMU) has become the NDA Team, and the Liabilities Management Authority (LMA) has become the Nuclear Decommissioning Authority (NDA)
[2] www.the-environment-council.org.uk

2.5 Recommendations

As part of its work programme the BFWG undertook a consolidation of the recommendations of previous Working Groups. At the 9th Main Group Meeting in March 2004 the Co-ordination Group was tasked to take responsibility for this work and to identify an allocation of the recommendations to the appropriate bodies after the closure of this Dialogue. Agreed recommendations from this report will be passed to the Co-ordination Group for inclusion in their final consolidation.

3. Report on BFWG Work Programme

3.1. Development of NDA (Aim 1)

Providing analysis and advice to the Company on the impact of the development of the LMA, and informing the DTI's LMA development process

3.1.1. Principles for Liabilities Management

The BFWG produced a paper which outlined the principles it felt should be used to underpin the management of nuclear liabilities. The development of principles aimed to provide a specification for the LMA, which, if met, would best enable it to achieve its mission as set out in the White Paper. The BFWG's Principles Paper was presented to and endorsed by the 7th Main Group Meeting in November 2002 and passed to DTI/LMU. All ongoing developments have been reviewed by the BFWG against these principles. The Principles Paper is included as Appendix 1.

The BFWG believes that it would be appropriate for the NDA to establish and adopt, as a matter of urgency and in co-operation with its stakeholders, a set of principles to guide its management of nuclear liabilities. These principles should draw on those developed by the BFWG and supplied to DTI (see Appendix 1). NDA's principles should be published, and made available for review by their stakeholders within 12 months.

Recommendation 1. The NDA should establish, adopt and publish, before 1 April 2005 and in co-operation with its stakeholders, a set of principles to guide its management of nuclear liabilities.

Recommendation 2. The NDA should ensure that their principles on the management of nuclear liabilities are reviewed by their stakeholders within 12 months of publication.

In July 2004 the DTI provided a response on their progress against the Principles Paper. This is included as Appendix 2. The BFWG welcomed this response, but there was insufficient time to provide a commentary. Recognising that this is a DTI, rather than NDA, response, it is still not clear how competition and contracting will in fact deliver improvements, or how success will be measured and made transparent.

DTI indicated their intention to provide brief summaries of the key issues raised by stakeholders with pointers about how these issues are being addressed and where more information on these issues could be obtained. The BFWG was disappointed that it has not been possible for DTI to undertake this work, as the relevant DTI teams have been focussed on other tasks in the run-up to the NDA launch. However, if the NDA develops the proposed summaries, the issues to be included should be:

- Contractorisation
- Employee Issues
- Commercial Operations
- Socio-economic and environmental impacts
- Programming
- Prioritisation
- Stakeholder Engagement

The BFWG strongly supports the development of these summaries and recommends that they should be reviewed by the future NDA National Stakeholder Group.

Recommendation 3. The NDA should develop the Key Issue Summaries as suggested by the DTI, before April 2005.

3.1.2. Contractorisation

The initial stages of the Group's work focussed on the need for an input to the DTI consultation on the LMA White Paper 'Managing the Nuclear Legacy'. This part of the work has been completed. To meet the consultation deadline, the BFWG submitted a work-in-progress document 'Draft Principles for Liabilities Management[3]' to the DTI. This action was endorsed at the 7th Main Group Meeting in November 2002. A section of the draft Principles addressed contractorisation.

In response to this submission meetings were held with LMU, the outcomes of which were reported at the 8th Main Group Meeting in July 2003 (see Appendix 2 of the BFWG Second Interim Report). The key issues addressed were:

- Contracting policy
- Site and licensee resources
- Continuity of employment and skills base
- Research and technology

This led to a series of recommendations being made to LMU, as seen below.

1. The LMU should adopt the Principles related to contractorisation as the basis of developing a new model. This may involve;

- collaborative working to make best use of available skills and resources

- a more open and iterative approach

[3] Appendix 1 to this report

- a system which keeps payments to contractors under surveillance to ensure that payments are fair and defensible

2. In order to enhance public confidence in the basis for NDA contracting strategy, the LMU should demonstrate how their review of experience of government contracting, in particular addressing developments at Dounreay and Aldermaston Weapons Establishment (AWE) and worldwide experience in particular that from the USA is informing their contractorisation strategy.

3. LMU proposals on sub-contracting have been extremely broad, with little detail on the many layers of contractors envisaged. More clarity of LMU plans is needed, and the next step should be for BFWG to request an update on this topic by the LMU.

4. The LMU should clarify the funding and incentivisation arrangements for R&T activities, and the ownership and transfer of IPR. The LMU should consider undertaking specialised work to develop a clear policy in this area.

5. The LMU should clarify how contracts will address the need for appropriate forms of locally based stakeholder engagement on formulation and delivery of clean-up plans.

6. The LMU should develop clearly defined policies to inform contractor selection taking account of the environmental, safety and ethical record of contractors.

7. The LMU should develop arrangements to ensure that the role of the NDA in securing the skills needed for the nuclear cleanup is fully achieved. In particular, LMU and NDA should take full account of current work to ensure that contractors at all levels are incentivised to undertake appropriate skills development.

8. In taking forward the development of this contractorisation model, the LMU should co-operate with other organisations, and given its broad representation of key stakeholders, the BFWG could have a significant role.

The LMU responded by presentations to the BFWG and at meetings with a BFWG Sub-group, which was reported at the 9th Main Group Meeting in March 2004.

The report noted that the LMU had provided the Sub-Group with copies of the proposed draft 'Heads of Terms' contractual documents, which started to identify the potential format and content of future NDA contracts with site Management and Operations (M+O) contractors, and with their parent company(ies). The BFWG received the documents in January 2004 which allowed only a limited time in which to comment, and the Sub-Group therefore provided a response against the previously agreed BFWG Principles.

The LMU published a response to all the comments that they had received as part of their consultation, and the BFWG's input was included. Based on these wider comments, LMU revised the Heads of Terms and recirculated it for further comment. The BFWG again provided an input based on the agreed Principles, and this is attached as Appendix 3, together with an indication of the response from LMU. The Draft Heads of Terms is now available on the DTI website.

The BFWG recognises that it has had to act in a reactive mode to DTI proposals regarding contractorisation. It appears to the BFWG that contractorisation strategy is evolving piecemeal, and the BFWG remains unconvinced that the proposed contractorisation models can ensure the realisation of the competition objectives set out in the White Paper.

The BFWG recognises that the use of contractorisation as a main driver for efficiency had already been established in the White Paper, presumably in light of experience from AWE and the USA. However, many stakeholders still have deep misgivings about the implications of contractorisation on such issues as safety, employment, the maintenance of a national skills base and local socio-economic impacts. The BFWG's concerns have been raised in the various documents which it has submitted to the DTI.

The interaction between the BFWG and the LMU in this area has been intermittent and constrained by LMU's programme, the Group has been very disappointed with apparent direct impact of its work, and feel that any correspondence with its views was largely serendipitous. However, the Group was pleased to note that some of the matters raised by the Group were taken forward by the individual BFWG members through their constituency channels. For example, the Trades Unions have built upon the work of the BFWG and used it to strengthen their inputs in the areas of key personnel, skills retention, redundancy notification, variations of contract of employment, transition plan (workforce confidence), and parent companies agreement.

There are continuing areas of stakeholder interest which will require further testing of the BFWG's contractorisation principles against the developing contracts and associated procedures by the NDA. The BFWG has been unable to bring this process to a conclusion in the time it had available, and would envisage that further work would be carried out under the auspices of an NDA national stakeholder group (NSG). While the Draft Heads of Terms are intended to apply to the competed contracts, the accompanying suite of contractual procedures and documentation will be applicable to the initial contracts with the incumbents and their sub-contracting arrangements. As the BFWG Principles should apply to all tiers of contracts.

The BFWG recognises a need for cross-sectoral stakeholder oversight of the development of NDA's contractorisation process between the closure of the BNFL National Stakeholder Dialogue and the formation of the NSG.

Recommendation 4. The DTI and NDA should arrange for cross-sectoral stakeholder scrutiny of the NDA's contractorisation. The outcome should be reported to the first meeting of the NSG.

Recommendation 5. The NSG should review the NDA's contracting principles, procedures and subsequent contracts against the BFWG Principles before the first contracts are competed.

Recommendation 6. The NDA should establish arrangements for the NSG to regularly review whether the implementation of the NDA's model of contractorisation is effectively delivering the NDA's cleanup functions and responsibilities as set out in the Energy Act 2004.

3.1.3. NDA Stakeholder engagement

In response to DTI's consultation on a draft stakeholder framework, the BFWG formed a task group to work up a response based on its Principles and reflecting experience derived from the BNFL National Stakeholder Dialogue. After endorsement by the BFWG this response was submitted to the DTI on 3 December 2003. A copy of the submission is attached as Appendix 4. Many of the comments were reflected in the draft consultation document that was published by the DTI at the end of 2003, and the BFWG provided further comments in May 2004, which are attached as Appendix 5.

The BFWG supports and welcomes DTI's stakeholder engagement initiative and has sought to work with the Department to develop it into an acceptable form. The BFWG believes that this should lead to a process which commits NDA and its contractors to provide the openness and transparency necessary to enable stakeholder engagement to thrive. The BFWG recognises that the DTI regional stakeholder fora have done much to raise expectations amongst stakeholders which, if not fulfilled, will cause stakeholder disillusionment.

Recommendation 7. The NDA should, by March 2005, set out how it will resource and deliver the White Paper commitments on openness and transparency and stakeholder engagement.

Recommendation 8. In the lead up to the launch of the NDA in April 2005 the DTI should proactively manage the establishment of an NDA Stakeholder Engagement Process.

3.1.4. Sharing Experience and Advice

The BFWG has made great efforts to meet the objective of sharing experience and advice with DTI/LMU, with mixed results. While it is true to say that some individuals within the DTI are familiar with the work of the BNFL National Stakeholder Dialogue, the BFWG remains of the view that the majority of the Department seemed reluctant to live by the principles of openness and transparency and stakeholder engagement under which, it is claimed, the NDA will operate. While cooperation on issues such as direct participation in the Dialogue and consultation on stakeholder engagement were constructive and mutually beneficial, issues such as contractorisation did not achieve the same level of engagement. The BFWG remain concerned that this lack of consistency has set an unhelpful precedent for the NDA.

Recommendation 9. The NDA should ensure that its corporate culture respects and meets stakeholder expectations of high quality engagement with consistency, openness and transparency as stated in the White Paper.

The BFWG briefly reviewed the LMU Strategic Issues Register, and provided comments. The Group concluded that the Register was in such a developmental stage that it was not transparent to stakeholders or of practical use. It was unstructured, of a predominantly technical nature, and not been prepared with stakeholder input, or with stakeholder engagement in mind. One of the more obvious omissions was any reference to socio-economic issues.

Recommendation 10. The NDA should ensure that the Strategic Issues Register is developed in a way which takes account of stakeholder views and concerns.

The Dialogue has been influential in raising the profile of key issues such as the Hazard Indicator, Prioritisation of cleanup activities and the need to make remediation plans more accessible to stakeholders. These activities have drawn on the experience of a broad group of stakeholders and represent a resource which the NDA could usefully utilise in future.

Recommendation 11. The NDA should be aware of the level of stakeholder engagement capability available to it from other established stakeholder engagement programmes including the BNFL National Stakeholder Dialogue and its Working Groups.

3.2. BNFL Corporate Strategy (Aim 2)

Reviewing/monitoring the development of the Company's strategy in respect of providing services to governments and nuclear utilities

3.2.1. Resource, Innovation, Values Analysis and Submission to BNFL/DTI Review

In July 2003, the Secretary of State, Patricia Hewitt, announced that there would be no flotation of BNFL as a whole after the NDA has been formed in April 2005 and that a joint DTI/BNFL review of BNFL's future strategy would now take place. The appointment of Mike Parker as the new Chief Executive was also announced. (See Appendix 6 – DTI Ministerial Announcement).

In conducting the review the BFWG was asked by both BNFL and DTI to give its views on the overall structure and role of 'New BNFL'. This was done by producing a document with a series of challenges based on the Principles for Liabilities Management previously produced by the Group and the Key Strategic Issues (KSI) analysis which had been provided to the 8th Main Group Meeting in July 2003.

These challenges were provided to BNFL and DTI, and are attached as Appendix 7.

David Bonser (BNFL) and Paul MacIntyre (DTI), attended the November 2003 BFWG meeting to obtain the Group's views at first hand. Subsequently the BFWG offered

guidance to DTI on the content and tone of the Secretary of State's planned statement in December 2003 to announce the new BNFL structure.

The conclusion of the joint strategic review was announced in December 2003 (see Appendix 8 – DTI press release) the main points of which were:

- a new parent company will be established in April 2005 to hold those parts of BNFL that will not become the NDA's responsibility
- following the creation of the NDA, the principal focus of the successor company will be the clean-up at UK sites
- concurrently with the new parent company being established, a new group of subsidiary companies will be set up with initial responsibility for managing clean-up operations at sites under arrangements to be agreed by the NDA
- the vast majority of the existing BNFL UK workforce will remain employed by companies that operate current BNFL sites – other employees will transfer into companies within the clean-up group
- a new Nuclear Science and Technology Company (NSTS) will be formed as a subsidiary, and will provide research and technology services on a commercial basis
- other businesses will be managed to deliver value and in a way that limits and controls risk to the UK taxpayer
- steps will be taken to allow the Westinghouse business to operate with greater financial independence from its parent and open up possibilities for private sector participation.

The BFWG has maintained a watching brief on the implementation of the new strategy and the new Company structure arising from it. There have been a number of announcements relating to the evolution of the new Company throughout 2004 and in May 2004 the BFWG revisited the KSI analysis carried out in 2003 to test its relevance to "new BNFL" and its structure post April 2005.

This review showed that whilst the overall structure of the Company had significantly changed and governance would be altered in April 2005 with the creation of new legal entities, the component Businesses, with the exception of Environmental Services, remain largely the same. As a result the BFWG felt that the majority of the KSIs developed for the Company in 2003 would successfully map across in some form to the new Company and the NDA. Appendix 9 shows diagrammatically BFWG thinking on where the KSIs would transfer to in the post 2005 structure.

Recommendation 12. Companies within the new BNFL group should note the KSIs relevant to their business and ensure that these are addressed within their ongoing business plans.

3.2.2. BNFL Stakeholder engagement

The BFWG was pleased to note that, post restructuring, BNFL intends to remain committed to continued stakeholder engagement. Based on BFWG engagement experience, the paper attached at Appendix 10 sets out a possible approach to building

capacity and developing policy on stakeholder engagement for the "new BNFL" entities and Site Licensee Companies.

Recommendation 13. BNFL Business Groups should develop engagement strategies, consistent with BFWG proposals, and which meet the requirements and expectations of their respective stakeholders, including integration with the NDA's stakeholder engagement process where appropriate.

3.2.3. BNFL CSR report

BNFL published its first Corporate Social Responsibility (CSR) Report in August 2003. This report addressed issues identified by the Dialogue process, and the inclusion of contentious issues contributed to it winning the ACCA award for first time social reporting.

BNFL took the output from the 9th Main Group Meeting in March 2004 and subsequent BFWG feedback to inform the content of its 2004 report, which will include updates on plutonium, waste, discharges, reprocessing and security.

The BFWG notes that the 2004 report will be available around October, so there will be no further input from the BFWG.

Recommendation 14. Main Group members should provide feedback to BNFL on the content of the 2004 CSR report.

3.2.4. Socio-economic issues

The Socio-Economic Steering Group was reconvened in 2002 to oversee a review of the West Cumbria Socio-Economic joint fact finding study and the resulting report issued by ERM in 2001. The purpose of the review was to bring previous work up to date in the light of BNFL's 2002 Business Plan and with regard to the impact of the DTI's proposals for nuclear decommissioning as set out in the 2002 White Paper.

The work provides an up to date "baseline" of common understanding of the socio-economic impacts of future BNFL and NDA business expectations on West Cumbria. The Report was presented to the 8th Main Group meeting in July 2003 and subsequently published.

The study was based on three scenarios developed by the Spent Fuel Management Options Working Group (SFMOWG):

SF1 *"Stop Now and Prepare for Closure."*
An early end to reprocessing, with variants relating to the level of plutonium (Pu) immobilisation.

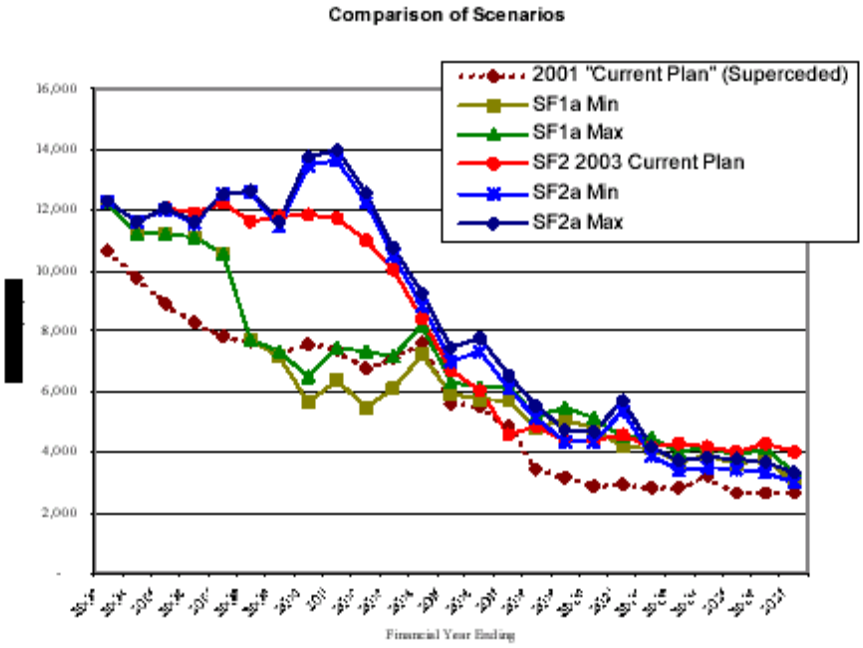
SF2 *"Current Business Plan."*
Sellafield operations as planned for in the 2002 approved business plan.

SF2a *"Current Plan with Accelerated Retrievals and Decommissioning."*

Current Business Plan but with waste retrieval and decommissioning activity brought forward as much as is possible, regardless of cost.

Highlights from the main conclusions are set out below:

- The outlook for on-site employment at Sellafield is one of long-term decline.
- Under the "Current Plan" and "Current Plan with Accelerated Retrievals and Decommissioning", employment remains steady until about 2012, and then declines rapidly to a third of previous levels (about 4,000) by 2018.
- Under the "Stop Now and Prepare for Closure" scenario the employment decline starts much sooner but is smoother.
- This decline will have marked knock-on effects in the local economy, as every five jobs on site support another job in West Cumbria. This high local multiplier effect is not surprising given the relative isolation of West Cumbria, the high incomes of the workforce and the efforts made by BNFL to use local suppliers. The graph below compares employment for each of the scenarios used in the study. The study examined assumptions on the creation of replacement jobs and found that these would not compensate for the job losses shown below; this has been further examined by the Diversification Study (see 3.3 below).



The study has informed the work of the Contractorisation Sub-Group in its consideration of the LMU's proposals for contractorisation and consequent impacts on BNFL's suppliers and the wider economy of West Cumbria. It has also provided background information for the joint fact finding study by the Diversification Working Group, in particular the work on "less direct diversification" and "area diversification" by BNFL in West Cumbria, and the potential for further activity.

Following representations by the West Cumbria Nuclear Task Group, informed by the Socio-Economic Study, Government has confirmed its commitment to locate the headquarters of the NDA in West Cumbria.

In consideration of the particular effects of changes to the nuclear industry in West Cumbria (as described in the Socio-Economic Study and Diversification Report – see below) a West Cumbria Strategic Forum is being set up. It will ensure common understanding across all the key national, regional and local stakeholders. It will establish innovative ways of working together and develop a long-term strategy to create a sustainable economy for West Cumbria. The Forum, to be chaired by the DTI, will involve some 30 representatives including principal government departments, regional development organisations, local MPs and local government, business and trade unions. It will consider all aspects of the needs of the West Cumbrian community, in particular those arising from the impact and opportunities of nuclear decommissioning.

Recommendation 15. The West Cumbria Strategic Forum should take due account of previous Dialogue work on Socio-Economic issues at their first meeting.

The North West Development Agency (NWDA) has confirmed its commitment to support the socio-economic development of West Cumbria through West Lakes Renaissance (WLR), the urban regeneration company for West Cumbria and Furness, and is funding the appointment of a Nuclear Opportunities Manager at WLR with a remit to maximise the benefits to the area from the location of the NDA and the nuclear decommissioning programme at Sellafield.

The Cumbrian local authorities have used the information in the Socio-Economic Study, and further information gleaned from a visit to nuclear sites and their neighbouring communities in the US, jointly developed with regional partners and the DTI a Memorandum of Agreement (MoA). It sets out a shared vision and key principles on which the signatories (Government Office for the North West, NWDA, NDA and the West Cumbrian local authorities) will work together to secure the long-term economic stability of West Cumbria and support the role of the NDA. The MoA will be considered at the inaugural meeting of the Strategic Forum prior to signature. It commits the signatories to:

- work together
- deliver positive transformation of the local economy
- expand skills, facilities and the knowledge base to deliver on the new challenges presented by clean-up
- support workforce development, planning and the local supply chain
- ensure successful local stakeholder engagement

The authorities have also been able to secure significant amendments to the Energy Act 2004 in relation to roles of the NDA and the DTI with regard to socio-economic and community support (Section 9 Subsection 4, 5 & 6 of Energy Act 2004)***.***

Following the publication of the ERM Report in 2002, DTI together with NWDA and Government Office for the North West undertook to carry out a further in-depth study on the economic future in West Cumbria based on the revised Life Cycle Base Line for Sellafield. This study, which was to be undertaken in 2004, was intended to update the previous socio-economic studies in the light of the NDA's decommissioning strategy and lifecycle baselines for the licensed sites in West Cumbria, to provide further information on

skills requirements, opportunities for local supply chain (particularly SME development) and socio-economic issues in the medium- and long-term period.

Recommendation 16. The NDA, with local and regional partners, should update and extend ERM's Socio-Economic Study as soon as the NDA's strategy for the nuclear sites in West Cumbria is developed, to allow the results to be shared with the West Cumbria Strategic Forum at the earliest opportunity.

Recommendation 17. The NDA should undertake regular reviews and updates of the Socio-Economic studies as an ongoing commitment of The West Cumbria Strategic Forum.

3.3. Diversification (Aim 3)

Identify other business futures the Company might adopt, including the examination of non-nuclear business futures.

3.3.1. Joint Fact Finding Study

A Scoping Study for Joint Fact Finding (JFF) was completed by Environmental Resources Management (ERM) and reviewed at the BFWG meeting in November 2003. Three areas of potential diversification were identified by the scoping study, the terms of reference for which were attached to the BFWG report to the 9th Main Group Meeting in March 2004.

- **direct diversification**: in which a company encourages the exploitation of technology, IPR and other assets to develop non core businesses;
- **area diversification** in which a company supports local regeneration and economic development initiatives; and
- **less direct diversification** in which a company supports employees in establishing new businesses and suppliers in developing new products and services for existing and new customers and markets.

The Joint Fact Finding study was undertaken by a task group of BFWG, with support from ERM; its activities in each of the areas for potential diversification are summarised below:

a) <u>Direct Diversification</u>

The task group has had meetings with the following organisations:

1. the Defence Diversification Agency to identify and discuss routes for application and management of Intellectual Property (IP).
2. Renewables Northwest (the NW Renewable Energy Cluster group) and the Carbon Trust to discuss potential for use of BNFL's IP, with the following feedback:
   - Applications are already established in energy storage (flywheels) and fuel cells. These applications are expensive, highly-specialised technologies suitable for

specific niche applications only. Urenco, the licensee for the energy storage technology, recently took a decision to suspend any further investment due to insufficient take-up to make the project viable.

- BNFL's lists of "preferred suppliers" include many businesses with high standards of quality and integrity, likely to have skills and capabilities applicable in renewable energy sector. With the support of BNFL, the lists of preferred suppliers in relevant sectors have been made available to Renewables Northwest for distribution to contractors engaged in renewable energy projects.

3. BNFL's group Head of Intellectual Property to review the electronic library of over 400 families of patents developed by the Company. These patents may be categorised as follows:
   - Lapsed patents considered being of no future use by the Company. Many of these patents were developed during the 1990s when BNFL's technologists were given free rein to develop technologies in a variety of applications of no general use to the Company.
   - Patents relating to nuclear fuel and reactor technology. These are owned by BNFL's Westinghouse subsidiary and are not available for wider application.
   - The majority of other patents are nuclear-specific adaptations of technologies developed in other industries, and as such are unlikely to have further applications in non-nuclear areas.
   - BNFL has patents in instrumentation, chemical processing and bio-technology that may be applicable in the chemical processing industry and for bio-remediation of contaminated land. BNFL and Working Group members have met with the relevant NW Cluster organisations to review these specific patents and their potential for wider application. A small number have been identified as having potential for future exploitation and these will be taken forward by the cluster organisations with BNFL.[4]
   - Other technologies within BNFL's portfolio,) whilst being of technical interest, are not competitive with more established technologies. For example the potential for extraction of Xenon from Krypton 85, whilst technically possible, is not considered to be competitive with other methods for Xenon production such as fractional distillation of air.

In summary, BNFL has been involved in numerous ventures few of which have created diversification opportunities which have succeeded commercially. The main reasons for limited success include the main focus of the company being on core activities, further reinforced by

(a) the requirement to operate in a highly regulated environment
(b) the limited applicability of nuclear technologies in other industries
(c) the fact that much of the IPR has been adapted from other industries for nuclear applications.

The company does, however, continue to sustain a science and research base from which further opportunities may flow in the future.

[4] These are: destruction of ammonia and ammonium nitrate; separation, encapsulation and disposal of mercury; vitrification; remote sensing of corrosion of reinforcing bars in concrete; bio-remediation; laser removal of contaminants from surfaces. The Company is seeking a development partner for its ion-exchange process.

b) Less Direct Diversification

Following the initial scoping study, the task group investigated the potential for further development of local supplier initiatives and employee business support schemes.

The company has had some success in developing spin-out businesses, although for most of them BNFL remains their major customer. Helping such suppliers diversify their product and customer bases will become more important in future. BNFL is likely to become more constrained in providing support, with responsibility transferring to local and regional economic development agencies. The development of a more "tiered" supply chain with fewer suppliers having a direct relationship with BNFL could present challenges in the sustainable development of further new start-up businesses.

Attempts to support employees in establishing their own businesses have had limited and mixed success, with only one generating significant employment. Through West Lakes Renaissance (the urban regeneration company for West Cumbria and Furness) work is developing on a new scheme as part of a package of measures to mitigate the projected decline in employment over the next decade.

A further issue related to less direct diversification is that of skills training both for the nuclear industry and other major employers within West Cumbria. BNFL's apprentice training programme has in the past exceeded the Company's requirements and the excess "Community Apprentices" were recruited by local industry – this no longer takes place.

The Nuclear Skills Project is being undertaken by NWDA with Cumbria LSC, Cogent, the industry, regulators, academia and training organisations, to develop the infrastructure to meet future national needs for skills for the nuclear industry.

c) Area Diversification

Support for economic and community development has and continues to be provided in a variety of ways including:

- The West Cumbrian Development Fund (WCDF)
  - BNFL committed to provide £1.5 million per annum in the period 2000 to 2005.
- Westlakes Science and Technology Park
  - major beneficiary of the WCDF, which now hosts 29 companies employing 700 people with plans for further expansion largely for nuclear industry tenants.
- BNFL Enterprise Limited
  - wholly owned £2.5 million rolling investment fund subsidiary venture fund, now independent of BNFL.
- Harris Knowledge Fund
  - small venture fund (£0.5 million) operated in partnership with the UCLan.
- Cumbria Inward Investment Agency
  - receives £150k per annum from BNFL.
- Cumbria Trust
  - charitable foundation providing support to voluntary and community groups.

Other area diversification activity includes support to the Prince's Trust and local enterprise agencies, and education and training programmes which encourage interest in engineering in schools and colleges.

In conclusion, the company has made a major contribution to local economic development. The Life Cycle Base Line for Sellafield and the other licensed sites in West Cumbria allows a long-term view to be taken of the issues facing the area. A key issue for the future is the extent to which BNFL and successor organisations should be responsible for this support and the extent to which responsibility should transfer to public sector agencies such as the NWDA and WLR. This issue has been addressed by clauses in the Energy Act and the creation of the West Cumbria Strategic Forum to address the impact of nuclear decommissioning at Sellafield and develop a strategy for the long-term social and economic regeneration of the area.

The final report on the Joint Fact Finding Study will be separately tabled for approval at the 10th Meeting in October 2004. The principal recommendations are summarised in Table 5.1 in the report, as follows:

Direct diversification

- clarification of ownership of IPR
- commitment to exploitation of IPR
- establishing links for technology transfer to other sectors
- exploring feasibility of attracting major partner in commercial exploitation

Less Direct Diversification

Suppliers

- continuous communication on procurements procedures
- SME transitional supplier discussions
- diversification opportunities for SMEs

Employees

- review of current support
- develop new packages of support
- training and skills development and transferability

Area Diversification

- ensuring appropriate resources are allocated to area diversification
- ensuring support to area diversification is a contractual obligation
- preparing a prospectus on ways in which companies are able to contribute most effectively to area diversification
- effective communication and co-ordination

Suggested responsibilities for the discharge of these recommendations are included within the report. The organisations involved include DTI, NDA, BNFL, NWDA, WLR, West Cumbria Development Agency, Cumbria LSC, the supply chain, and the West Cumbria Strategic Forum when it is established.

Action is already in hand, through a local partnership in West Cumbria including the above organisations, to carry forward many of these recommendations. A further early action will be the presentation of the report to the Secretary of State (for serious attention at early

meeting of the Strategic Forum) with copies to local MPs, NDA Chairman and other key players, national & local.

It is essential that communication and co-ordination are continued through the successor stakeholder arrangements and overseen by the Strategic Forum, and that the recommendations form part of the agenda for regular meetings between the organisations listed until new stakeholder engagement arrangements become established.

Recommendation 18. The Main Group should endorse the 'Diversification Opportunities at BNFL and in the Local Economy' report for publication.

Recommendation 19. The Co-ordination Group should circulate copies of the published Diversification report to the Secretary of State; relevant MPs; NDA Chairman and CEO; and key organisations identified in the report.

Recommendation 20. The West Cumbria Strategic Forum should give careful consideration to the Diversification report as part of its coordination role to give leadership, minimise the chance of fragmentation and secure funding, and initiate implementation of recommendations as appropriate within the first year.

Recommendation 21. The NWDA in its annual plan should ensure that its Northwest cluster organisations in conjunction with BNFL explore opportunities to exploit BNFL's technologies into non-nuclear commercial activity. They should report progress within a year to the West Cumbria Strategic Forum.

Other sites should consider using similar processes to explore potential for diversification.

Recommendation 22. The NDA, as part of its socio-economic commitments, should encourage its M&O contractors to develop and use similar processes (for example joint fact finding and work with stakeholders) to explore potential opportunities for diversification.

3.4. Site Management and Operation (Aim 4, Background Issue 4)

The original aim was to inform the company (and NDA as it developed) on the prioritisation of cleanup work. BNFL was tasked by the DTI to produce Life Cycle Baseline Plans (LCBL) and Near Term Work Plans (NTWP). As the format of these plans had been laid down by the DTI, the BFWG was only able to examine the outputs of these processes rather than attempting to influence methodologies and inputs. The BFWG therefore

worked on methods of making the results of the planning activity accessible for stakeholder examination, and to inputs on indicators which could be used to measure progress.

3.4.1. Generic Test Framework to enable Stakeholder Examination of Life Cycle Baseline Plans

The LCBL plans are produced by site licensees to scope out the work programme which needs to be carried out to clean up the nuclear sites which are to be under the control of the NDA.

These plans cover all the separate projects to be undertaken on a site, together with the timescales, resources and costs proposed, going out over many years and, in some cases, decades. Of necessity, the plans are highly technical, detailed, and not very accessible to the lay reader. They present a single view of future activities, and do not give information on other options which have been discarded or foreclosed, or of the contingencies available to address uncertainties and changes in the future as remediation proceeds. There are also commercial and security issues which restrict the ability to give LCBLs wide circulation.

At the next level of programming detail, the activities for the next 2-3 years are given in the Near Term Work Plan. This provides an authorised work plan and budget for each activity on the site.

The BFWG was very conscious that stakeholders rightly wish to be involved in decision-making regarding cleanup plans, including associated waste management and environmental impacts. The Group therefore developed the Draft Test Framework as a tool to provide information in a more accessible and transparent way. The Test Framework also provides information on the background to the plan, by posing a series of generic questions which would generate appropriate information for stakeholder assessment. This will allow examination of previous decisions, future impacts and contingencies. The Draft Test Framework could be used to enable stakeholders to identify issues of interest in LCBLs and NTWPs, and should be particularly relevant in enabling local stakeholders to engage more effectively with site licensees.

In July 2004, the BFWG sought Main Group's views, and the resulting framework is attached as Appendix 11. It should be emphasised that the BFWG views the framework as an evolving document and that individual sections could merit further expansion depending on the issue under review: for example, more specific information regarding the stakeholder engagement processes to be adopted for a particular project.

To assist Main Group's consideration, three examples have been developed and are included in Appendices 12 - 14:

- *Intermediate Level Waste (ILW) stored in Wet Silos on the Sellafield site*. This example covers the retrieval and conditioning of ILW stored under water in concrete silos. The document has been prepared by BNFL in the light of comments by the BFWG (Appendix 12)
- *Disposition of Separated Plutonium*. This document has been produced by BFWG representatives who were previously involved in the Plutonium Working Group, working with a BNFL technical expert. The current NTWP for Sellafield

does not include the activities described in this example, but the BFWG believes that the example framework illustrates the case for the inclusion of this activity in the next revision of the plan. The BFWG asked the Security Working Group for its comments on the document to take advantage of the expertise in plutonium disposition which resides in the members of the Group. These comments were included in the example given (Appendix 13)

- *Contaminated Land*. This example considers the issue around contaminated land on the Sellafield site. It has been prepared by BNFL experts and there was time for only one iteration of BFWG comments (Appendix 14). This example has been produced to help stakeholders identify issues around site end points (see section 3.4.4 below).

The Group believes that the worked examples demonstrate that the framework gives the basis both for providing stakeholders with initial information about the LCBL plans as a starting point for engagement (e.g. silos, contaminated land) and for feeding back stakeholder recommendations on further iterations of the LCBL plans (e.g. Pu).

Recommendation 23. BNFL should immediately submit the Generic Test Framework to the NDA for development within its stakeholder engagement process and subsequent implementation.

Recommendation 24. BNFL should submit the work packages identified in the Disposition of Plutonium Framework to the NDA for inclusion in the next Life Cycle Baseline and Near Term Work Plans.

The Disposition of Separated Plutonium (see Appendix 13) case study describes a programme of research and evaluation being undertaken by the Company. This programme is designed to allow informed choices between options and envisages stakeholder involvement.

Recommendation 25. The NDA should ensure that the programme of research and evaluation on plutonium disposition is reported to the NSG within the first year of the NDA's creation, and invite the Group to consider how it wishes to be involved.

The BFWG believes that the plutonium case study would also assist CoRWM in its consideration of the inventory of radioactive materials that have to be managed in the long-term.

Recommendation 26. CoRWM should give consideration to the Disposition of Separated Plutonium case study in its work on the inventory of radioactive materials to be managed in the long-term.

3.4.2. Prioritisation and Socio-economic Issues

The NDA Team has established the Prioritisation Working Group (PWG), which is charged with developing methodologies to assist the justification and prioritisation of cleanup activities both within and between sites. Some members of the BFWG have been co-opted onto this group. The BFWG has recognised that the issues raised by justification and prioritisation are fundamentally linked to socio-economic considerations, as discussed at section 3.2.4 above.

The BFWG believes that this linkage between priorities and socio-economics should be reflected in the membership of the PWG, and a letter to this effect was sent to the NDA Chairman, Sir Anthony Cleaver, which is given in Appendix 15.

3.4.3. Hazard Indicator

Working Groups of the Dialogue (WWG, SFMOWG) had pointed out the need for some 'progress measure' in the reduction of risk and hazard from waste stored on nuclear sites. Though the terms 'risk' and 'hazard' are used interchangeably in normal parlance, in this context, work on a progress measure has found it useful to adopt the Health and Safety Executive (HSE) definitions of these terms, together with "hazard potential" which are given below.

- ***Hazard*** is the potential for harm arising from an intrinsic property or disposition of something to cause detriment
- ***Risk*** is the chance that someone or something that is valued will be adversely affected in a stipulated way by the hazard
- ***Hazard Potential*** is a measure of the harm that could be caused by the material in the form it is in.

Reduction of hazard potential on nuclear sites is a key deliverable for BNFL and NDA, and the industry derived such a measure, which was termed the 'Waste Conversion Index'. This was presented by BNFL to the BFWG in 2003, and the comments made, particularly in the area of transparency, were instrumental in starting a further programme of work under the auspices of the NDA Team, with the active participation of members of the BFWG. The BFWG has been regularly updated on the evolving concept, which is currently termed the 'Hazard Indicator'. However, when referred to the definitions above, the indicator actually measures Hazard *Potential*, and this anomaly needs to be resolved. A 'laypersons' guide' is in the process of development by the NDA Team-led group. A draft was available to the 9th Main Group Meeting in March 2004, and an updated version is in preparation.

The BFWG believes that this process has set an important precedent for the early engagement of stakeholders in the more extensive challenge of deriving methodologies and measures for the justification and prioritisation of cleanup activities.

> ***Recommendation 27.*** The NDA should continue to develop a programme to derive methodologies, tools and measures for the justification and prioritisation of cleanup activities through prompt, effective and broad based stakeholder involvement.

Recommendation 28. The NDA should adopt the Hazard Indicator as one of a suite of tools by which to help measure and justify its prioritisation clean-up operations.

3.4.4. Site End Points

As mentioned in section 3.4.1, the issue of contaminated land as discussed for Sellafield in Appendix 14 is strongly affected by decisions relating to the definition of site end points.

The BFWG is aware that the issue of contaminated land has been discussed in other stakeholder engagement processes, notably the Safegrounds project sponsored by CIRIA. It is important that work in this area is integrated into national policy.

The BFWG has examined the current regulatory and policy framework relating to clearance criteria for residual contamination on nuclear sites. This is a highly complex and changing field as detailed in Appendix 16. The BFWG believes that the current regulatory framework is far from 'joined up' and confused to the point of being untenable in practice. The responsible UK agencies and Government departments – principally DEFRA, the HSE and the Environment Agency – should review regulatory criteria within this area to ensure consistency between the requirements of UK regulators and also consistency with international standards as they become established. This review should consider both the classification of material containing residual contamination and the regulatory regimes which might be applied to sites in which residual contamination has been left *in situ,* perhaps with restrictions on future site use.

Recommendation 29. The responsible UK agencies and Government departments should jointly develop policy on contaminated land, taking account of previous and ongoing stakeholder engagement, by the end of 2005.

The BFWG is aware that CoRWM has raised the matter of large volumes of low level waste (LLW) from decommissioning with relevant sponsoring Departments. CoRWM has been advised that as LLW currently has a disposal route, the Committee should concentrate on the longer lived higher activity waste streams and materials. CoRWM is producing an interim inventory report in which LLW decommissioning waste is addressed, and maintains a watching brief on the issue.

Recommendation 30. DEFRA, the devolved administrations and the NDA should give urgent consideration to disposal options for very large volumes of material with low levels of residual contamination and if necessary include this in CoRWM's terms of reference.

Recommendation 31. On its formation, the NDA should give urgent consideration as to how stakeholders may best be engaged in decisions about site endpoints on a case by case basis.

A major development in this area has been the HSE consultation on the criteria for delicensing nuclear sites. In reviewing these proposed criteria, the BFWG believes that they raise serious concerns about the practicability of delicensing and/or the amounts of radioactive waste which would be produced should these criteria be applied. These concerns have been submitted to the HSE and are given in Appendix 17.

3.5. Progress against Recommendations (Background Issue 1)

All recommendations from previous working groups were consolidated by the BFWG the output and the methodology used was approved at the 9th Main Group Meeting in March 2004. This meeting also mandated the Coordination Group to finalise this consolidation, including identifying the recipient organisations for each outstanding Working Group action and recommendation. The BFWG would wish to see the recommendations from this report incorporated into the consolidation exercise being undertaken by the Co-ordination Group.

Recommendation 32. The Co-ordination Group should incorporate the recommendations from this report into its final consolidation of recommendations and pass these to the appropriate organisations.

3.6. Monitoring External Issues (Background Issue 2)

At each meeting the BFWG received updates on relevant issues and used these to inform, where necessary, its ongoing work. These updates were viewed in this light rather than as specific work streams. Of particular relevance were the subjects below.

3.6.1. British Energy

The financial restructuring of British Energy and the consequent impacts on current operational and contractual commitments with BNFL have highlighted the relevance of previous recommendations of Working Groups, particularly those developed by SFMOWG on AGR fuel arisings and the associated Strategic Action Plans[5]. Stakeholder concerns centre on the continued operation or otherwise of THORP and the perceived tension between NDA's requirement to generate revenue and its commitment to clean up legacy waste.

Recommendation 33. The NDA should use the SFMOWG work relating to AGR fuel arisings and the associated Strategic Action Plan scenarios to inform its own policy development and as background to its stakeholder engagement on development of programmes and options.

[5] www.the-environment-council.org.uk, BNFL National Stakeholder Dialogue, Spent Fuel Management Options Working Group Report July 2002, pages 78-90

3.6.2. Low Level Radiation Risk

The BFWG has monitored the development of the Committee Examining Radiation Risks of Internal Emitters (CERRIE)'s work, and the development of ICRP thinking, and noted that this issue remains contentious. At the time of writing the Group has not had sight of CERRIE's final report. Based on past experience and the relative timing of CERRIE's report in relation to ICRP deliberations, the CERRIE work is unlikely to influence ICRP guidance in the short term but may influence how UK regulators interpret ICRP guidance. If this led to changes in NRPB guidance related to radiation dose/risk relationships, then the impact on the work of the BFWG in areas such as LCBLs and prioritisation methodologies would have to be reviewed by the NDA and the Department of Health.

Recommendation 34. Government departments and agencies with regulatory functions (principally DEFRA, DoH, EA, HSE) and the NDA should take account of CERRIE's work and develop a coherent approach to taking account of uncertainty in the regulation both of radioactive substances and other sources of risk.

3.6.3. Magnox Decommissioning Dialogue

The BFWG recognised that the decommissioning programme for Magnox stations could have significant impact on its work. It therefore took keen interest in the work of the Magnox Decommissioning Dialogue and monitored its progress through common membership. The BFWG chose not to look at the issue of timescales of decommissioning of Magnox stations within its work programme given that this was being considered within this other dialogue. At the time of writing the BFWG has not had sight of the final report from this dialogue. If this led to changes in policy, then the impact on the work of the BFWG in areas such as LCBLs and prioritisation would have to be reviewed by the NDA.

Recommendation 35. The NDA should take account of the findings of the Magnox Decommissioning Dialogue.

3.7. Sustainability Impacts of Business Futures (Background Issue 3)

The BFWG did not explicitly address the issue of sustainability but believes this important principle is incorporated into the work of the BFWG in many of the areas it examined. For example: the extent to which the concept is embodied in the Principles Document (Appendix 1) and the importance of other issues such as socio-economic effects in the justification and prioritisation of cleanup. Examination of the Multi Attribute Decision Analysis (MADA) undertaken by the Spent Fuel Management Options Working Group (SFMOWG) gives insight into the range of views and complexities of the sustainability concept.

In particular (through the SFMOWG MADA work) it was recognised that the need to consider BNFL's "Environmental Performance" needed to be interpreted widely through use of the term "sustainability". Sustainability assessment requires identification of all

significant environmental, social and economic impacts of all strategies, activities, programmes and built development.

A lesson from the Dialogue is thus that the NDA and BNFL (in its new roles) must ensure that:

- Setting of national priorities through Strategic Plans
- Development of Life Cycle Baselines (and Near Term Work Plans)
- Plans for construction and waste management schemes,

are subject to best practice sustainability appraisal.

Recommendation 36. The NDA and BNFL should incorporate best practice sustainability appraisal in all strategy and programme development.

3.8. Outstanding Issues

There are a number of outstanding issues which, given time, the BFWG would liked to have given further consideration to, some of which are referred to in Section 1. The Group feel that these issues may be useful to consider in future stakeholder engagement processes.

3.8.1. Revenue Generation

There is an unresolved tension between continued revenue generation by the NDA and the possibility of new commercial contracts with its mission for clean-up. The BFWG has addressed this subject in its Principles (Appendix 1) and is aware of previous work by the SFMOWG. The relevant Principles are:

Continued Operation of Commercial Plants

1. *The LMA must examine, as part of its annual review of performance, the case for continued commercial operation for Thorp, SMP and Magnox (stations and reprocessing plants), in a way, which maximises stakeholder and public confidence in its analysis and findings.*

2. *Continued operation of commercial plants must not adversely affect cleanup, for example by generating additional liabilities which could jeopardise the LMA's targets for discharging existing liabilities or which cannot be met by income from continued operation.*

3. *In the event of early closure of operational commercial plants, the LMA must be sensitive to the socio-economic effects, including the needs of the workforce, and must develop mitigation packages as has been previously identified in the published ERM report[6] which considered West Cumbria.*

Recommendation 37. The NDA should set up methodology and procedure for implementing the BFWG Principles relating to continued operation of commercial plants.

[6] West Cumbria: Socio-economic Study, available at www.the-environment-council.org.uk

3.8.2. New Nuclear Build and Exporting Nuclear Technologies

The future of nuclear power continues to be controversial. Some stakeholders see the potential for economic opportunity from nuclear new build and exporting technologies, but particular concerns have been expressed about the spread of nuclear technology and material, which has been heightened by recent terrorist atrocities. Despite the wishes of some members of the BFWG, the Group did not discuss this issue. The group recognise that there is a government commitment in the Energy White Paper to further consultation on any nuclear new build. Implicit reference to this issue is included in the KSIs (Appendix 9).

Recommendation 38. BNFL should include new nuclear build and export of nuclear technologies as part of the relevant BNFL business stakeholder engagement activity.

3.8.3. Discharges vs. Remediation

There is a tension between remediation and its arising discharges. In looking at particular projects there should not be a presumption that discharges will automatically increase.

The Discharges Working Group report[7] developed the concept of "areas of optimisation" for discharge levels; this should be part of the overall methodology required to justify and prioritise clean-up activities. The development of this methodology must involve stakeholders at the earliest opportunity.

Recommendation 39. The NDA should include optimisation of discharges in its methodologies and measures for the justification and prioritisation of clean-up as addressed by Recommendation 27.

3.8.4. Workforce Impacts

This issue is referenced in the Government Services KSIs (see Appendix 9). This emphasises that BNFL needs to develop a workforce that is well-led, effective, motivated, skilled and knowledgeable. Achieving and maintaining this during a period of very significant change is a major challenge, entailing new activities, skills and business drivers during the transition from owner-operator to NDA contractor, and with a shifting emphasis from commercial operations to clean-up.

There are continuing concerns over how this will be managed in terms of personal impacts on employees, including conditions of service, security of tenure, pension provision and continuity of employment.

Recommendation 40. BNFL should proactively engage with its workforce and local communities on issues related to the transition from owner-operator to NDA contractor.

[7] www.the-environment-council.org.uk, BNFL National Stakeholder Dialogue, Discharges Working Group Report, 28 February 2000

4. BFWG Membership

The membership of the BFWG is provided in Appendix 18. Members of the Main Group are invited to contact any of the BFWG members for further clarification about the Group's work programme and this report.

5. Endorsement of BFWG Draft Final Report

Recommendation 41. The Main Group is asked to endorse the BFWG Draft Final Report so that it can be published and provided to BNFL, DTI and other appropriate bodies.

6. List of Recommendations

Recommendation 1. The NDA should establish, adopt and publish, before 1 April 2005 and in co-operation with its stakeholders, a set of principles to guide its management of nuclear liabilities.

Recommendation 2. The NDA should ensure that their principles on the management of nuclear liabilities are reviewed by their stakeholders within 12 months of publication.

Recommendation 3. The NDA should develop the Key Issue Summaries as suggested by the DTI, before April 2005.

Recommendation 4. The DTI and NDA should arrange for cross-sectoral stakeholder scrutiny of the NDA's contractorisation. The outcome should be reported to the first meeting of the NSG.

Recommendation 5. The NSG should review the NDA's contracting principles, procedures and subsequent contracts against the BFWG Principles before the first contracts are competed.

Recommendation 6. The NDA should establish arrangements for the NSG to regularly review whether the implementation of the NDA's model of contractorisation is effectively delivering the NDA's cleanup functions and responsibilities as set out in the Energy Act 2004.

Recommendation 7. The NDA should, by March 2005, set out how it will resource and deliver the White Paper commitments on openness and transparency and stakeholder engagement.

Recommendation 8. In the lead up to the launch of the NDA in April 2005 the DTI should proactively manage the establishment of an NDA Stakeholder Engagement Process.

Recommendation 9. The NDA should ensure that its corporate culture respects and meets stakeholder expectations of high quality engagement with consistency, openness and transparency as stated in the White Paper.

Recommendation 10. The NDA should ensure that the Strategic Issues Register is developed in a way which takes account of stakeholder views and concerns.

Recommendation 11. The NDA should be aware of the level of stakeholder engagement capability available to it from other established stakeholder engagement programmes including the BNFL National Stakeholder Dialogue and its Working Groups.

Recommendation 12. Companies within the new BNFL group should note the KSIs relevant to their business and ensure that these are addressed within their ongoing business plans.

Recommendation 13. BNFL Business Groups should develop engagement strategies, consistent with BFWG proposals, and which meet the requirements and expectations of their respective stakeholders, including integration with the NDA's stakeholder engagement process where appropriate.

Recommendation 14**.** Main Group members should provide feedback to BNFL on the content of the 2004 CSR report.

Recommendation 15**.** The West Cumbria Strategic Forum should take due account of previous Dialogue work on Socio-Economic issues at their first meeting.

Recommendation 16**.** The NDA, with local and regional partners, should update and extend ERM's Socio-Economic Study as soon as the NDA's strategy for the nuclear sites in West Cumbria is developed, to allow the results to be shared with the West Cumbria Strategic Forum at the earliest opportunity.

Recommendation 17. The NDA should undertake regular reviews and updates of the Socio-Economic studies as an ongoing commitment of The West Cumbria Strategic Forum.

Recommendation 18. The Main Group should endorse the 'Diversification Opportunities at BNFL and in the Local Economy' report for publication.

Recommendation 19. The Co-ordination Group should circulate copies of the published Diversification report to the Secretary of State; relevant MPs; NDA Chairman and CEO; and key organisations identified in the report.

Recommendation 20. The West Cumbria Strategic Forum should give careful consideration to the Diversification report as part of its coordination role to give leadership, minimise the chance of fragmentation and secure funding, and initiate implementation of recommendations as appropriate within the first year.

Recommendation 21. The NWDA in its annual plan should ensure that its Northwest cluster organisations in conjunction with BNFL explore opportunities to exploit BNFL's technologies into non-nuclear commercial activity. They should report progress within a year to the West Cumbria Strategic Forum.

Recommendation 22**.** The NDA, as part of its socio-economic commitments, should encourage its M&O contractors to develop and use similar processes (for example joint fact finding and work with stakeholders) to explore potential opportunities for diversification.

Recommendation 23. BNFL should immediately submit the Generic Test Framework to the NDA for development within its stakeholder engagement process and subsequent implementation.

Recommendation 24**.** BNFL should submit the work packages identified in the Disposition of Plutonium Framework to the NDA for inclusion in the next Life Cycle Baseline and Near Term Work Plans.

***Recommendation 25*.** The NDA should ensure that the programme of research and evaluation on plutonium disposition is reported to the NSG within the first year of the NDA's creation, and invite the Group to consider how it wishes to be involved.

***Recommendation 26*.** CoRWM should give consideration to the Disposition of Separated Plutonium case study in its work on the inventory of radioactive materials to be managed in the long-term.

***Recommendation 27*.** The NDA should continue to develop a programme to derive methodologies, tools and measures for the justification and prioritisation of cleanup activities through prompt, effective and broad based stakeholder involvement.

Recommendation 28. The NDA should adopt the Hazard Indicator as one of a suite of tools by which to help measure and justify its prioritisation clean-up operations.

***Recommendation 29*.** The responsible UK agencies and Government departments should jointly develop policy on contaminated land, taking account of previous and ongoing stakeholder engagement, by the end of 2005.

***Recommendation 30*.** DEFRA, the devolved administrations and the NDA should give urgent consideration to disposal options for very large volumes of material with low levels of residual contamination and if necessary include this in CoRWM's terms of reference.

***Recommendation 31*.** On its formation, the NDA should give urgent consideration as to how stakeholders may best be engaged in decisions about site endpoints on a case by case basis.

***Recommendation 32*.** The Co-ordination Group should incorporate the recommendations from this report into its final consolidation of recommendations and pass these to the appropriate organisations.

***Recommendation 33*.** The NDA should use the SFMOWG work relating to AGR fuel arisings and the associated Strategic Action Plan scenarios to inform its own policy development and as background to its stakeholder engagement on development of programmes and options.

***Recommendation 34*.** Government departments and agencies with regulatory functions (principally DEFRA, DoH, EA, HSE) and the NDA should take account of CERRIE's work and develop a coherent approach to taking account of uncertainty in the regulation both of radioactive substances and other sources of risk.

***Recommendation 35*.** The NDA should take account of the findings of the Magnox Decommissioning Dialogue.

***Recommendation 36*.** The NDA and BNFL should incorporate best practice sustainability appraisal in all strategy and programme development.

***Recommendation 37*.** The NDA should set up methodology and procedure for implementing the BFWG Principles relating to continued operation of commercial plants.

***Recommendation 38*.** BNFL should include new nuclear build and export of nuclear technologies as part of the relevant BNFL business stakeholder engagement activity.

***Recommendation 39*.** The NDA should include optimisation of discharges in its methodologies and measures for the justification and prioritisation of clean-up as addressed by Recommendation 27.

***Recommendation 40*.** BNFL should proactively engage with its workforce and local communities on issues related to the transition from owner-operator to NDA contractor.

***Recommendation 41*.** The Main Group is asked to endorse the BFWG Draft Final Report so that it can be published and provided to BNFL, DTI and other appropriate bodies.

7. List of Appendices

Appendix 1. Principles for Liabilities Management, A Response to the DTI's White Paper 'Managing the Nuclear Legacy', Business Futures Working Group, November 2002

Appendix 2. DTI Response to BFWG Principles document

Appendix 3. BFWG Comments on the LMU Draft Contract 'Heads of Terms'

Appendix 4. Developing a Stakeholder Engagement Framework for the NDA - BFWG submission to the DTI, 3 December 2003

Appendix 5. Overall Comments - NDA Arrangements for Stakeholder Engagement (Draft). 21 May 2004

Appendix 6. Ministerial Announcement July 2003

Appendix 7. Corporate Strategy Review – BFWG Additional Key Tests

Appendix 8. DTI Press Release - Thursday 11 December 2003

Appendix 9. Tracking KSIs to New Company Structures

Appendix 10. Stakeholder Engagement: A Way Forward for "New BNFL" and Site Licensee Companies

Appendix 11. Generic Test Framework for Cleanup Projects

Appendix 12. Test Framework: Retrieval of Legacy Waste from a Wet Silo

Appendix 13. Test Framework - Disposition of Separated Plutonium

Appendix 14. Test framework: Contaminated land management

Appendix 15. Letter from BFWG to Sir Anthony Cleaver, Chairman NDA

Appendix 16. Clearance criteria for residual contamination following site decommissioning

Appendix 17. Comment on HSE consultative document on criteria for de-licensing nuclear sites under the Nuclear Installations Act 1995

Appendix 18. List of BFWG members

Appendix 19. Selection Criteria for Working Groups

Appendix 1

Principles for Liabilities Management, A Response to the DTI's White Paper 'Managing the Nuclear Legacy', Business Futures Working Group, November 2002

Table of Contents

Appendix 1. Principles for Liabilities Management, A Response to the DTIs White Paper 'Managing the Nuclear Legacy', Business Futures Working Group, November 2002

Introduction and Background

The Business Futures Working Group (BFWG or the Group) was formed in October 2001 and is the fifth working group to be set up under the BNFL National Stakeholder Dialogue. Its formation preceded the publication of the "Managing the Nuclear Legacy" White Paper by the DTI that proposed the formation of a Liabilities Management Authority (LMA). At its inaugural meeting, the BFWG defined its aims as:

1. Providing analysis and advice to the Company on the impact of the development of the LMA, and informing the DTI's LMA development process.
2. Reviewing/monitoring the development of the Company's strategy in respect of providing services to governments and nuclear utilities.
3. Identify other business futures the Company might adopt, including the examination of non-nuclear business futures.
4. Develop guidance to the Company on recommended ways forward, including milestones and targets where appropriate.

As part of the DTI's consultation process on the White Paper, the Group was asked to provide input relating to funding and the principles of openness and transparency, which are fundamental to the formation of the LMA. While responding to this request, the Group decided that it was appropriate to carry out a more wide-ranging review of principles, which should underpin the management of nuclear liabilities.

The development of principles aimed to provide a specification for the LMA, which, if met, would best enable it to achieve its mission as set out in the White Paper. Commenting at the level of principles provides a robust and enduring framework against which to judge the establishment and operation of the LMA.

The principles developed by the working group are presented below and represent a consensus view amongst all Group members (see Appendix 1). The breadth of this consensus adds considerably to the weight, which should be given to this input. In particular, the BFWG draws attention to the fundamental principles of openness and transparency, which are given prominence in the White Paper. The Group believes that these principles, as reflected here, must be adopted at the earliest possible opportunity, and should become a central and permanent feature of the Government's approach to Liabilities Management leading up to the establishment of the LMA. This is essential to the task of building up public confidence in the LMA and the management of nuclear liabilities.

The Group recognised that radioactive waste policy is a devolved matter. References to "Government" therefore include the relevant devolved administrations.

The numbering and ordering of the principles does not imply a relative importance or priority.

Process

The BFWG developed a set of principles, which emerged from its discussion of overarching issues arising from consideration of the White Paper. The Group initially considered the White Paper using the categories of Achievement, Safety, Environment and Finance. BFWG subsequently identified the need for two further categories, Generic Issues and Outstanding Issues. All six categories were then reviewed under seven areas: Playing Field, Structure, Standards and Methodology, Inclusive Process of Decision Making, Agreed Strategy and Prioritised Cleanup Plans, Motivated People working to Agreed Standards, and Evidence of Progress. The results of these discussions were developed in the form of detailed issues within a matrix (see Appendix 3, which includes an explanation of the areas considered).

The finance category was examined and a set of funding principles was developed. These were considered to be largely independent of issues raised under the categories of safety, achievement and the environment, but are directly affected by them, as they directly influence the level of funding required.

While undertaking its task, the Group found that the original categories overlapped considerably in many areas, and there is clearly a balance to be struck between several aspects of these categories. BFWG found that the issues in the matrix could be grouped under the headings:

A. Structure and Policy, B. Funding, C. Regulation, D. Programming,
E. Infrastructure, F. Contracting, G. Reporting.

These groupings appear to identify the key stand-alone issues, which require principles to be derived. The matrix from Appendix 3 was used to inform the development of principles in the groupings selected above.

As the process proceeded, a number of the principles were found to interact and had to be taken in their entirety and applied as overarching all the other groupings.

The BFWG recommends that the DTI must take these principles into account when:

- Preparing the Nuclear Reform Bill
- Developing its work programme for establishing the LMA.

Overarching principles

(All of these principles interact and must be taken in their entirety)

1. The Government must ensure that there are clear national interpretations on how broad principles such as risk, hazard, inter-generational equity and sustainable development are to be applied to decommissioning and waste management. These must be developed in a way which maximises stakeholder and public confidence

2. Government must recognise the importance of relationships with the local communities and make timely arrangements for remedying any significant associated socio-economic changes. This must include:

   - the development and delivery of appropriate action plans through relevant Government departments and other public agencies
   - the availability of funding to deliver the agreed action plans commensurate with the level of change.
   - an acknowledgement in the remit of the LMA that socio-economic and environmental support must be one of the selection criteria for the appointment of contractors.

3. In undertaking its work the LMA must take into account the findings of the BNFL National Stakeholder Dialogue. (See Appendix 2 for list of reports)

4. The LMA must be open and transparent in all its activities, taking into account short and long-term concerns, which may span many generations.

5. Stakeholders must be engaged as far as possible throughout the decision-making processes. The LMA must develop, with stakeholders, acceptable principles for deciding when and how inclusive or exclusive decision-making should be applied.

6. A liabilities[8] management programme must be developed, funded and implemented which:
   - is based on a sound knowledge of the inventory and characteristics of the radioactive legacy to be managed
   - is consistent with emerging UK policy on radioactive waste management
   - is derived using transparent assumptions, principles and appropriate measures of progress, with clearly stated criteria for prioritising work;
   - enables LMA to demonstrate best value for money in discharging its liabilities through a balance of safety, environment, achievement of the programme, cost effectiveness and local and national socio-economic factors.
   - secures the continuity and delivery of the overall programme, including supply chain and skills development.

7. All assumptions, and how they are arrived at, including those relating to risk, methodologies, politics, social issues and regulatory regimes, must be made explicit and public.

[8] Liabilities, as defined in the White Paper

8. The LMA must arrange for a regular review of decommissioning and waste management assumptions and strategies on the basis of wide stakeholder involvement and independent advice.

A. Structure and Policy

Structure

Noting the intention to form the LMA as a Non Departmental Public Body with direct overview by a DTI Minister and the Scottish equivalent:

1. the Government must ensure major decisions to be taken only in the light of full consultation with stakeholders. This must include the legislative framework and the structure of the LMA. DTI must ensure early and continued stakeholder involvement

2. prompt legislation is required to enable a transition to new arrangements as soon as possible to facilitate strategic overview, openness and transparency and provide security of funding

3. the method of appointing the LMA governing body, its composition, name, structure and accountabilities must aim to command public confidence.

4. although radioactive waste management policy is a devolved matter, the LMA must seek to maintain continuity of policy across the UK.

5. implementation of waste policy must be consistent across all waste producers.

Policy

1. Relationship between regulatory authorities (including local planning authorities) and LMA must be open, transparent and constructive

2. The UK Government decommissioning policy must be clearly stated, and address such matters as;

   - what is meant by decommissioning being carried out as soon as reasonably practicable?
   - what are the end points, which it is intended to achieve?
   - confirmation that timely, safe, effective decommissioning is fully consistent with UK obligations under OSPAR
   - new institutional arrangements associated with LMA
   - development of a policy on Nuclear Industry VLLW

3. Government must integrate waste management, discharges and decommissioning policies covering both the short and long term.

LMA Remit

1. The LMA must develop a strategic approach to meet the Government waste management, discharges and decommissioning policies.

2. In any scenario involving new nuclear build, the LMA must not have ownership or financial responsibility for any resulting waste streams or other nuclear liabilities arising.

3. When ownership and management of Drigg passes to LMA it must be integrated with overall UK radioactive waste management strategy.

4. The LMA must provide a programme to improve and develop the best possible estimates of costs and uncertainties of liabilities, noting that more stringent safety and environmental standards could cause cost rises in the future.

5. The LMA must have the in-house capability to operate as an intelligent customer.

Continued operation of commercial plants

1. The LMA must examine, as part of its annual review of performance, the case for continued commercial operation for Thorp, SMP and Magnox (stations and reprocessing plants), in a way, which maximises stakeholder and public confidence in its analysis and findings.

2. Continued operation of commercial plants must not adversely affect cleanup, for example by generating additional liabilities which could jeopardise the LMA's targets for discharging existing liabilities or which cannot be met by income from continued operation.

3. In the event of early closure of operational commercial plants, the LMA must be sensitive to the socio-economic effects, including the needs of the workforce, and must develop mitigation packages as has been previously identified in the published ERM report[9] which considered West Cumbria.

B. Funding

1. Funding and funding mechanisms relating to the LMA must be open, auditable and transparent to allow the source, allocation and expenditure of funds to be easily traceable.

2. Provisions for funding must be driven by a requirement for early and effective discharge of liabilities, rather than by considerations such as financial discount rate.

3. Statements or estimates of the total cost of discharging liabilities must be accompanied by a clear explicit definition of the programme objective (end point) to be achieved, together with any underpinning risks and assumptions.

[9] West Cumbria: Socio-economic Study, available at www.the-environment-council.org.uk

4. Funding must be flexible to match the uncertainties surrounding liabilities and their definition.

5. There must be a requirement in statute for a periodic formal review which would:
   i. review progress to date and confirm end points and timescales which are required
   ii. re-evaluate all other relevant assumptions taking into account policy development e.g. MRWS, and reassess the liabilities against those end points and timescales
   iii. re-evaluate corresponding funding requirements, including existing provision, investment returns and discount rates, and the required future provision

6. The BNFL liabilities and their associated financial provisions, which are to become the responsibility of the LMA, must be assessed, defined and made public before transfer takes place. This process must be designed to take account of lessons from the past to assist in increasing public confidence.

7. The funding of the LMA must be used exclusively for its role[10] in managing and discharging the UK nuclear legacy, as defined in the White Paper. Progressing liabilities management will require new facilities that will themselves require eventual decommissioning. Apart from these, any new licensed nuclear plant must fund the management of its own liabilities and must demonstrate it can do so.

8. An investment policy must be developed, published and regularly reviewed. The policy would address the balance between investment return and financial risk and ethical investment principles. The management of investment decisions must minimise risks of conflicts of interest and diversion. The arrangements must also ensure probity, prudence and demonstrate independence and transparency. It must be recognised that this approach may entail additional costs.

9. Funds must be drawn down against specifically identified and costed programmes of work that will include provision for contingencies on a defined basis.

10. Statutory provisions must be made to ensure that funds are available for the lifetime of the projects and once committed must remain available for the liabilities management programme.

11. Liability estimates and funding arrangements must be published in a readily understandable form, including an appropriate level of disaggregation and separation from financial information about the operation of commercial assets.

12. A capital sum to fully fund the discharge of currently assessed liabilities must be built up taking into account the principle of intergenerational equity. There must be an obligation on the LMA to publicly state when it will have built up its fund.

[10] As encompassed in the White Paper (chapter 3)

Conclusion

In order to meet these principles, a segregated fund (not a segregated account) is required.

Recommendation

The BFWG is of the opinion that a segregated fund must be established.

C. Regulation

The BFWG notes that initially the overall regulatory framework and the basis of the statutory relationships between licensees and regulators are not proposed to change. The Government must ensure:

1. strong, robust, transparent, consistent and independent regulation.
2. the development of effective inter-relationships between Government, LMA, site licensees, regulators and local planning authorities.
3. that the relationship between the regulators and the LMA does not adversely affect the licensee-regulator relationship
4. that the implementation of Decommissioning and Waste Management policy as defined (see Overarching Principle 3 and Policy section above) includes:
   - the standards and end points which it is intended to achieve, including any interim storage arrangements, environmental and safety principles, passive storage, and waste classification
   - agreed cleanup plans
   - the definition of a “soundly based” decommissioning strategy
   - the criteria against which the adequacy of the strategy should be measured.
5. that the LMA arrangements for ensuring continuity of decommissioning and waste management programmes, in the event of changes of licensee, are acceptable to the regulators.

D. Programming

Decommissioning and Waste Management programmes must be developed using methods, which transparently demonstrate that, a balance of safety, environment, achievement, cost effectiveness, and local and national socio-economic needs has been undertaken. A long-term optimum programme must be achieved which must be based on:

1. the definition and characterisation of the waste inventory supported by appropriate research and development, which allows the timely prioritisation of radioactive waste legacy management.

2. comprehensive site remediation plans which in turn conform with emerging UK radioactive waste management policy

3. a methodology for the prioritisation of waste streams, inventories and sites, including suitable measures such as a passivity/hazard index.

E. Infrastructure

The LMA must:

1. ensure the development and retention of a national and local skills and knowledge base sufficient to implement the long term programme referred to above, notwithstanding the current resource constraints facing the nuclear sector

2. make the best use of current and developing experience of decommissioning and waste management both UK and world-wide

3. ensure that it has presence at all its nuclear decommissioning and waste management sites commensurate with the scale of operations being undertaken

4. establish and maintain a Research and Development programme which delivers an open, shared and transparent knowledge base, and enables improvements in the delivery of the long term programme

5. develop an effective working relationship with stakeholders including local communities, and local and regional authorities to achieve a long-term balance between beneficial and detrimental impacts of the site programmes. This relationship must acknowledge the role of local authorities in planning and regeneration.

F. Contracting

The BFWG notes that the White Paper emphasises 'the development of competitive markets for clean up contracts will be a key strategic element of the LMA'. However, the White Paper is largely silent as to how competitive contractorisation will ensure that the projected improvements are realised in practice.

Existing models of contractorisation would appear to raise barriers to a number of stated aims of the White Paper: development of access to Intellectual Property Rights (IPR), openness and transparency. A new model or paradigm of contractorisation, which might involve collaborative working, is required to make the best use of the available skills and resources while addressing the tensions outlined below.

The Government must, therefore, require the LMA to demonstrate, in a way which maximises stakeholder and public confidence, specific contracting arrangements which will address, *inter alia,* the potential tensions between contractorisation and the need for:

1. clear and identifiable lines of responsibility and accountability, especially where sub-contractors are used

2. the LMA and licensees to retain the appropriate attributes of an intelligent customer

3. the maintenance and development of improved safety and environmental standards
4. openness and transparency
5. commercial confidentiality
6. long term planning over times considerably in excess of individual contract periods
7. an ongoing Research and Development programme to deliver an open, shared and transparent knowledge base, enabling improvements in the delivery of the long-term programme.
8. the availability of key intellectual property rights (IPR) across the contractor base and over time
9. incentives that encourage innovation and allow contractors to benefit from IPR available as a result of their work.
10. security
11. tax payer concerns about preventing misuse of funds and excessive profit making by contractors
12. maximisation of the opportunities for UK contractors and local workforces
13. continuity of employment and skills base
14. supply chain management
15. an incentivised workforce

Conclusion
The BFWG does not believe that current models of contractorisation successfully address these tensions. The timescale set by the White Paper consultation did not allow the Group to address potential solutions, but will be examining this area as part of its future work programme.

Recommendation
A new model or paradigm of contractorisation, which might involve collaborative working, is required to make the best use of the available skills and resources while addressing the tensions outlined above.

G. Reporting

1. As a Non Departmental Public Body, the LMA must establish reporting standards that achieve clarity in the accounting of liabilities management and its presentation, without being constrained by the restrictions placed on public limited companies by the Financial Services Regulations. These standards must include the provision of independent verification of published reports.

2. The LMA must involve stakeholders in developing a reporting regime to determine which information is to be made available, to identify the appropriate communication media and the reporting intervals. This should enable the LMA to establish national and local reporting arrangements that maximise stakeholder and public confidence.

3. There must be a reporting regime that clearly sets out reporting accountabilities for all parties engaged in work for and on behalf of the LMA

4. As part of the reporting regime, the LMA must develop a mechanism for resolving disputes about the availability of information.

5. Reporting must provide open, transparent and independently verified evidence of:

   - the basis on which contracts are awarded and incentivised
   - achievement of decommissioning and waste management targets as defined by the contracts
   - implementation and progress in meeting risk and hazard reduction, safety environmental and socio-economic targets
   - progress on the R+D programme and its application to liabilities management
   - a review and audit of decommissioning strategies on the basis of independent advice and consultation.

6. Ministerial reviews must be carried out and the results published to an agreed timetable.

Appendix 2

DTI Response to BFWG Principles document

Appendix 2. DTI Response to BFWG Principles Document

BFWG Principles	DTI Comments
Overarching principles (All of these principles interact and must be taken in their entirety)**:**	
1. The Government must ensure that there are clear national interpretations on how broad principles such as risk, hazard, inter-generational equity and sustainable development are to be applied to decommissioning and waste management. These must be developed in a way which maximises stakeholder and public confidence;	The Government's strategy with regard to managing the legacy is to carry the work out within a joined up framework of Policy – this principle embodies this strategy.
2. Government must recognise the importance of relationships with the local communities and make timely arrangements for remedying any significant associated socio-economic changes. This must include: - the development and delivery of appropriate action plans through relevant Government departments and other public agencies; - the availability of funding to deliver the agreed action plans commensurate with the level of change; - an acknowledgement in the remit of the LMA that socio-economic and environmental support must be one of the selection criteria for the appointment of contractors.	The Government has made frequent public commitments to support local communities dependent on the nuclear industry throughout the Parliamentary process and outside. It has undertaken to work with Local Authorities, Regional Development Agencies and other stakeholders to support the socio-economic life of those communities. It has also stated that the NDA will recognise its corporate social responsibility as a major regional economic factor. The NDA will expect its site operators to at least continue the level of community support that exists now. It will achieve this through its contractual arrangements with site operators. The level of support will be provided for in the Near Term Work Plan produced by the site operator and will be an allowable cost for the operator to receive back from the NDA. When the NDA runs competitions for future management of sites, amongst the criteria for choosing a preferred contractor will be their proposals for levels of local community support. The NDA must have regard to how this compares with what was done before.
3. In undertaking its work the LMA must take into account the findings of the BNFL National Stakeholder Dialogue.	Agreed. Important that there are robust arrangements for the transition from BNFL National Dialogue to whatever the NDA puts in place.
4. The LMA must be open and transparent in all its activities, taking into account short and long-term concerns, which may span many generations.	Agreed. This is part of the work to develop an engagement framework for the NDA.
5. Stakeholders must be engaged as far as possible throughout the decision-making processes. The LMA must develop, with stakeholders, acceptable principles for deciding when and how inclusive or exclusive decision-making should be applied.	Agreed. Again, this is part of the work to develop an engagement framework for the NDA.

BFWG Principles	DTI Comments
6. A liabilities management programme must be developed, funded and implemented which: • is based on a sound knowledge of the inventory and characteristics of the radioactive legacy to be managed; • is consistent with emerging UK policy on radioactive waste management; • is derived using transparent assumptions, principles and appropriate measures of progress, with clearly stated criteria for prioritising work; • enables LMA to demonstrate best value for money in discharging its liabilities through a balance of safety, environment, achievement of the programme, cost effectiveness and local and national socio-economic factors; • secures the continuity and delivery of the overall programme, including supply chain and skills development.	Agreed. LMU has created a register of assets and liabilities verified by the current operators – (this is currently a restricted document and not for dissemination). The Life Cycle Baselines and the Near Term Work Plans define the work to be done over a period of time and the cost of doing the work and are based on a standard set of assumptions. These documents will be used by the NDA to develop it's own annual plan and longer term strategies. The LMU recognises the need for prioritisation and a working group has been convened to take this forward. Membership of this working group includes representation from most stakeholder groups, including the BFWG. As it develops, the output of this working group will be published for stakeholder review and comment.
7. All assumptions, and how they are arrived at, including those relating to risk, methodologies, politics, social issues and regulatory regimes, must be made explicit and public.	Agreed. This would fall under the openness and transparency remit of the NDA
8. The LMA must arrange for a regular review of decommissioning and waste management assumptions and strategies on the basis of wide stakeholder involvement and independent advice.	Agreed. The openness remit of the NDA makes this inevitable.

Structure and Policy	
Structure - Noting the intention to form the LMA as a Non Departmental Public Body with direct overview by a DTI Minister and the Scottish equivalent:	
1. the Government must ensure major decisions to be taken only in the light of full consultation with stakeholders. This must include the legislative framework and the structure of the LMA. DTI must ensure early and continued stakeholder involvement;	Agreed. White Paper commitments still set the level for the NDA. The Bill was published in draft for comment and the engagement framework for the NDA is being developed with stakeholders – hope we are putting our money where our mouth is on this one?
2. prompt legislation is required to enable a transition to new arrangements as soon as possible to facilitate strategic overview, openness and transparency and provide security of funding;	We're going as quickly as the parliamentary process allows.

Structure and Policy	
3. the method of appointing the LMA governing body, its composition, name, structure and accountabilities must aim to command public confidence;	Agreed. Appointments will follow OCPA (Office of the Commissioner for Public Appointments) procedures.
4. although radioactive waste management policy is a devolved matter, the LMA must seek to maintain continuity of policy across the UK;	Not really within the NDA's control, but as a major stakeholder, it will be able to draw any inconsistencies to the attention of the relevant policy making bodies. As a major stakeholder, it will also expect to be listened to.
5. implementation of waste policy must be consistent across all waste producers;	Again, not within the NDA's gift, but see previous comment.

Policy	
1. Relationship between regulatory authorities (including local planning authorities) and LMA must be open, transparent and constructive.	From the NDA's perspective, there is no reason why this should not be the case.
2. The UK Government decommissioning policy must be clearly stated, and address such matters as: - what is meant by decommissioning being carried out as soon as reasonably practicable? - what are the end points, which it is intended to achieve? - confirmation that timely, safe, effective decommissioning is fully consistent with UK obligations under OSPAR - new institutional arrangements associated with LMA - development of a policy on Nuclear Industry VLLW	Noted. These are not for the NDA to decide, but will have significant influence as the main stakeholder. No reason why HMG should not operate in an open and transparent way and develop thinking on these issues with stakeholders – cf DTI consultations on substitution and decommissioning policy and CoRWM's work.
3. Government must integrate waste management, discharges and decommissioning policies covering both the short and long term.	

LMA Remit	
1. The LMA must develop a strategic approach to meet the Government waste management, discharges and decommissioning policies.	The NDA is required to produce a strategic plan for approval by the SoS
2. In any scenario involving new nuclear build, the LMA must not have ownership or financial responsibility for any resulting waste streams or other nuclear liabilities arising.	NDA remit is very clearly clean up of a defined portfolio of existing assets/liabilities, this does not include "new build"
3. When ownership and management of Drigg passes to LMA it must be integrated with overall UK radioactive waste management strategy.	The NDA will be expected to devise a strategy for the management of all its assets and liabilities.
4. The LMA must provide a programme to improve and develop the best possible estimates of costs and uncertainties of liabilities, noting that more	Agreed. This will start to improve as part of the Lifecycle Baseline/Near Term Work Plan work.

stringent safety and environmental standards could cause cost rises in the future.	
5. The LMA must have the in-house capability to operate as an intelligent customer.	Agreed.
Continued operation of commercial plants	
1. The LMA must examine, as part of its annual review of performance, the case for continued commercial operation for Thorp, SMP and Magnox (stations and reprocessing plants), in a way, which maximises stakeholder and public confidence in its analysis and findings.	Agreed.
2. Continued operation of commercial plants must not adversely affect cleanup, for example by generating additional liabilities which could jeopardise the LMA's targets for discharging existing liabilities or which cannot be met by income from continued operation.	Agreed. The remit is Clean up
3. In the event of early closure of operational commercial plants, the LMA must be sensitive to the socio-economic effects, including the needs of the workforce, and must develop mitigation packages as has been previously identified in the published ERM report2 which considered West Cumbria.	The Government has made frequent public commitments to support local communities dependent on the nuclear industry throughout the Parliamentary process and outside. It has undertaken to work with Local Authorities, Regional Development Agencies and other stakeholders to support the socio-economic life of those communities. It has also stated that the NDA will recognise its corporate social responsibility as a major regional economic factor.
Funding	
1. Funding and funding mechanisms relating to the LMA must be open, auditable and transparent to allow the source, allocation and expenditure of funds to be easily traceable.	We note all of these points and only disagree with the conclusion. As we set out in the White Paper, the funding arrangements must underline our commitment to the process and help build public confidence in the NDA; provide flexibility for the NDA to drive forward the project; and encourage competition for clean-up contracts by giving potential contractors the confidence to commit the skills and resources necessary to enter the nuclear clean up market. We believe that a statutory segregated account represents the best way to meet these objectives. It would not be an efficient use of public money for us to set aside at the outset the many years funding which a segregated fund would require.
2. Provisions for funding must be driven by a requirement for early and effective discharge of liabilities, rather than by considerations such as financial discount rate.	
3. Statements or estimates of the total cost of discharging liabilities must be accompanied by a clear explicit definition of the programme objective (end point) to be achieved, together with any underpinning risks and assumptions.	
4. Funding must be flexible to match the uncertainties surrounding liabilities and their definition.	

5. There must be a requirement in statute for a periodic formal review which would: i. review progress to date and confirm end points and timescales which are required ii. re-evaluate all other relevant assumptions taking into account policy development e.g. MRWS, and reassess the liabilities against those end points and timescales iii. re-evaluate corresponding funding requirements, including existing provision, investment returns and discount rates, and the required future provision	
6. The BNFL liabilities and their associated financial provisions, which are to become the responsibility of the LMA, must be assessed, defined and made public before transfer takes place. This process must be designed to take account of lessons from the past to assist in increasing public confidence.	
7. The funding of the LMA must be used exclusively for its role in managing and discharging the UK nuclear legacy, as defined in the White Paper. Progressing liabilities management will require new facilities that will themselves require eventual decommissioning. Apart from these, any new licensed nuclear plant must fund the management of its own liabilities and must demonstrate it can do so.	
8. An investment policy must be developed, published and regularly reviewed. The policy would address the balance between investment return and financial risk and ethical investment principles. The management of investment decisions must minimise risks of conflicts of interest and diversion. The arrangements must also ensure probity, prudence and demonstrate independence and transparency. It must be recognised that this approach may entail additional costs.	
9. Funds must be drawn down against specifically identified and costed programmes of work that will include provision for contingencies on a defined basis.	
10. Statutory provisions must be made to ensure that funds are available for the lifetime of the projects and once committed must remain available for the liabilities management programme.	
11. Liability estimates and funding arrangements must be published in a readily understandable form, including an appropriate level of disaggregation and separation from financial information about the operation of commercial assets.	

12. A capital sum to fully fund the discharge of currently assessed liabilities must be built up taking into account the principle of intergenerational equity. There must be an obligation on the LMA to publicly state when it will have built up its fund.	
Conclusion In order to meet these principles, a segregated fund (not a segregated account) is required. **Recommendation** The BFWG is of the opinion that a segregated fund must be established.	
Regulation - The BFWG notes that initially the overall regulatory framework and the basis of the statutory relationships between licensees and regulators are not proposed to change. The Government must ensure:	
1. strong, robust, transparent, consistent and independent regulation;	The LMU has set up a "National Regulatory Forum (NRF)" which meets every six weeks or so and includes representatives from all of the UK nuclear regulators. The RIF is road-testing the concept of the NDA as it is developed by the DTI with a view to ensuring that issues such as those identified here are dealt with as they arise. The terms of reference for the RIF and the minutes of its meetings are on the DTI nuclear clean up website.
2. the development of effective inter-relationships between Government, LMA, site licensees, regulators and local planning authorities;	
3. that the relationship between the regulators and the LMA does not adversely affect the licensee-regulator relationship;	
4. that the implementation of Decommissioning and Waste Management policy as defined (see Overarching Principle 3 and Policy section above) includes: - the standards and end points which it is intended to achieve, including any interim storage arrangements, environmental and safety principles, passive storage, and waste classification; - agreed cleanup plans; - the definition of a "soundly based" decommissioning strategy; - the criteria against which the adequacy of the strategy should be measured.	
5. that the LMA arrangements for ensuring continuity of decommissioning and waste management programmes, in the event of changes of licensee, are acceptable to the regulators.	

Programming - Decommissioning and Waste Management programmes must be developed using methods, which transparently demonstrate that, a balance of safety, environment, achievement, cost effectiveness, and local and national socio-economic needs has been undertaken. A long-term optimum programme must be achieved which must be based on:	Noted. The LMU has started to put in place some of the requirements identified here (e.g. LCBLs/NTWPs; Hazard indicator; Prioritisation). In essence each of these features and many more will have a part to play in NDA decision- making.
1. the definition and characterisation of the waste inventory supported by appropriate research and development, which allows the timely prioritisation of radioactive waste legacy management;	
2. comprehensive site remediation plans which in turn conform with emerging UK radioactive waste management policy;	
3. a methodology for the prioritisation of waste streams, inventories and sites, including suitable measures such as a passivity/hazard index.	
Infrastructure – The LMA must:	
1. ensure the development and retention of a national and local skills and knowledge base sufficient to implement the long term programme referred to above, notwithstanding the current resource constraints facing the nuclear sector;	The NDA has a duty to do this – the National Nuclear Academy is designed to address this requirement.
2. make the best use of current and developing experience of decommissioning and waste management both UK and world-wide;	Agreed.
3. ensure that it has presence at all its nuclear decommissioning and waste management sites commensurate with the scale of operations being undertaken;	Agreed.
4. establish and maintain a Research and Development programme which delivers an open, shared and transparent knowledge base, and enables improvements in the delivery of the long term programme;	Part of ongoing work
5. develop an effective working relationship with stakeholders including local communities, and local and regional authorities to achieve a long-term balance between beneficial and detrimental impacts of the site programmes. This relationship must acknowledge the role of local authorities in planning and regeneration.	Agreed. Developing effective relationships with all stakeholders is key to the success of the NDA.

Contracting - The BFWG notes that the White Paper emphasises 'the development of competitive markets for clean up contracts will be a key strategic element of the LMA'. However, the White Paper is largely silent as to how competitive contractorisation will ensure that the projected improvements are realised in practice. Existing models of contractorisation would appear to raise barriers to a number of stated aims of the White Paper: development of access to Intellectual Property Rights (IPR), openness and transparency. A new model or paradigm of contractorisation, which might involve collaborative working, is required to make the best use of the available skills and resources while addressing the tensions outlined below. The Government must, therefore, require the LMA to demonstrate, in a way which maximises stakeholder and public confidence, specific contracting arrangements which will address, inter alia, the potential tensions between contractorisation and the need for:	The sub-group on contractorisation has had a series of meetings with the LMU on these principles and we do not intend to repeat the content of those discussions here.
1. clear and identifiable lines of responsibility and accountability, especially where sub-contractors are used;	
2. the LMA and licensees to retain the appropriate attributes of an intelligent customer;	
3. the maintenance and development of improved safety and environmental standards;	
4. openness and transparency;	
5. commercial confidentiality;	
6. long term planning over times considerably in excess of individual contract periods;	
7. an ongoing Research and Development programme to deliver an open, shared and transparent knowledge base, enabling improvements in the delivery of the long-term programme;	
8. the availability of key intellectual property rights (IPR) across the contractor base and over time;	
9. Incentives that encourage innovation and allow contractors to benefit from IPR available as a result of their work;	
10. security;	
11. tax payer concerns about preventing misuse of funds and excessive profit making by contractors;	

12. maximisation of the opportunities for UK contractors and local workforces;	
13. continuity of employment and skills base;	
14. supply chain management;	
15. an incentivised workforce;	
Conclusion - The BFWG does not believe that current models of contractorisation successfully address these tensions. The timescale set by the White Paper consultation did not allow the Group to address potential solutions, but will be examining this area as part of its future work programme. **Recommendation** - A new model or paradigm of contractorisation, which might involve collaborative working, is required to make the best use of the available skills and resources while addressing the tensions outlined above.	
Reporting	
1. As a Non Departmental Public Body, the LMA must establish reporting standards that achieve clarity in the accounting of liabilities management and its presentation, without being constrained by the restrictions placed on public limited companies by the Financial Services Regulations. These standards must include the provision of independent verification of published reports.	All these points are noted and are being included in the ongoing work to develop an engagement framework for the NDA. It is important to agree with stakeholders what is required, what may be withheld (and for what reasons), how information is to be made available and what is expected of stakeholders – do they note the information, comment on it etc….
2. The LMA must involve stakeholders in developing a reporting regime to determine which information is to be made available, to identify the appropriate communication media and the reporting intervals. This should enable the LMA to establish national and local reporting arrangements that maximise stakeholder and public confidence.	
3. There must be a reporting regime that clearly sets out reporting accountabilities for all parties engaged in work for and on behalf of the LMA.	

4. As part of the reporting regime, the LMA must develop a mechanism for resolving disputes about the availability of information.	
5. Reporting must provide open, transparent and independently verified evidence of: - the basis on which contracts are awarded and incentivised; - achievement of decommissioning and waste management targets as defined by the contracts; - implementation and progress in meeting risk and hazard reduction, safety environmental and socio-economic targets; - progress on the R+D programme and its application to liabilities management; - a review and audit of decommissioning strategies on the basis of independent advice and consultation.	
6. Ministerial reviews must be carried out and the results published to an agreed timetable.	

Appendix 3

BFWG Comments on the LMU Draft Contract ‘Heads of Terms’

Appendix 3. BFWG Comments on the LMU Draft Contract 'Heads of Terms'

Comments on LMU draft Heads of Terms (dated 19 April 2004)

General Points

1. We (and no doubt other stakeholders) have needed to devote considerable time to the identification of changes in the new draft against the original draft dated 19 December. It would be much appreciated if future drafts for discussion could have changes identified.
2. We appreciate that the original December 2003 draft was issued for consultation primarily with the contracting community, which perhaps explains why relatively few of our concerns have been addressed. We assume our interpretation is correct and hope to see some action against our concerns in the next draft.
3. The original draft also included a draft of the Contract Model and Parent Companies' Agreement, which are fundamental documents that set the draft Heads of Terms in context. It would be helpful if the next draft could include the Contract Model and Parent Companies Agreement again, particularly to enable any changes in these documents to be identified.

This document details our comments on the revised Heads Of Terms. and we look forward to discussing these when we meet with you on 18 May.

4 Contract Procedures

BFWG still has concerns, as expressed in our comments on the original draft, about the suggestion that bidders may have the option of not revealing their contract procedures until after contract award. We believe that there should be an opportunity for stakeholders to provide input into the NDA's procedures and those of its contractors.

We are, however, reassured that all Contract Procedures will form part of the Near Term Work Plan (NTWP) which will ensure that the proper costs of preparation, maintenance and complying with them will be Allowable Costs.

BFWG has not, at this stage, had an opportunity to review, understand and comment on the NTWP. However, our recent experience in observing the prioritisation exercise that is currently taking place in relation to the 2004/5 NTWP for the Sellafield site leaves us concerned that the activities and sums budgeted for implementation of the Contract Procedures could in future years be threatened in future prioritisation exercises under the Change Process (Section 9).

We would wish to see a clause or clauses in Section 9 that would ensure that the sums set aside for implementation of the contract procedures are sacrosanct and take precedence over other items in the NTWP.

4.2 Authority Policy Statements

We note with approval that Authority Policy Statements will be defined to include "all policy statements, procedures and guidelines issued by the Authority for the attention of the Contractor", and that the contractor's Contract Procedures must be consistent with these.

5 Obligations on the Contractor

g) Support Services

The draft HoT appears to provide the mechanisms for operating to changed safety and environmental standards, either through revisions to the NTWP or changes under the proposed arrangements. There is nothing in the HoT that drives improved performance in these areas, and we need to see where this will be addressed.

h) Stakeholder Support

BFWG has noted with approval that many of our suggestions in relation to the draft NDA Stakeholder Engagement Framework have been taken on board. However, we feel that it is important that the NDA's commitment to stakeholder support activities and their funding is secured as priority activities within the NTWP and that further negotiation of this commitment does not form part of any subsequent re-prioritisation or change process.

5.1 Scope of Services

The "reasonable endeavours obligation" on the Contractor to perform the services set out in the NTWP is an incentive that will, in practice, be difficult to enforce without resort to the Courts, which is likely to be slow and costly. This needs Case Law to build-up, and therefore initially may be ineffective.

5.10 Socio-economic Development

The NDA will be providing detail of its policies for socio-economic development, and stakeholders will look forward to being able to comment on these in due course. The Energy Bill and in particular the amendments recently inserted in the House of Lords will be important in defining the context of these policies.

We are concerned as to who will be responsible for setting-out the socio-economic development aspects of the NTWP; will this be left to the Contractor or defined by the NDA? This is one issue to which our concerns apply (see item 4 above) about the desirability for scrutiny of Contractors' proposed procedures prior to contract award, and the potential for adjustment of non-programme items in the NTWP.

We would remind you of our original concerns related to the need to clarify local regeneration aspects in NDA policies, in relation to:

- Why would contractors really spend this money? Previously spend was to secure the licence to operate – is the new situation long term enough?
- What baseline is there for current community involvement - school governors, GEN II, etc. etc. – how can it be measured and will it be a feature of future contracts?
- Could contractors be incentivised (as they have been in the US) to move work from elsewhere, or to relocate other activities?
- What would be the catalyst for contractors actually sparking regeneration?
- Is there a commitment to extend socio-economic development requirements into Round 2 contracts and beyond?

6 Cost Reimbursement

The draft states the "it is envisaged that Allowable Costs will include most costs of the Contractor". Examples are given but the list is far from exhaustive.

7 Performance Based Incentives

We suggest that the following activities should be defined as priorities within the NTWP and should not form part of the incentive arrangements nor be included in any subsequent re-prioritisation or change process:

- Workforce development, training and maintenance of skills
- Stakeholder support
- Socio-economic development

13 Employees

13.5 Authority Approval of Redundancy

The requirement to take into consideration the contractor's duty to maintain a skilled workforce is noted with approval.

13.9 Terms and Conditions

Since the Contractor's HR procedures are to contain terms and conditions of employment, it is important that these should be subject to scrutiny and review prior to Contract Award. (see item 4 above).

14 Subcontracting

14.1 Competitive Tenders

A study of the EU Procurement Rules indicates that they will apply in the case of Tier 2 contracts by the Contractors. Simplistic and unimaginative application of these Rules could threaten the aspirations in the Section 3.6 of the 2002 White Paper to "develop and maintain a viable long-term supply chain and skills and knowledge base".

It is important, therefore, that the Contractors should make the application of the EU Procurement Rules as realistic and informed as possible, for example:

- Use of sole or single-source awards
- Use of pre-qualification procedures, incorporating appropriate "guidance to tenderers" in the formulation of their responses
- Interpreting the concept of "best value" in the widest sense including the development of the socio-economic base.

14.2 Compliance with Procurement Procedure

NDA policies need to be clarified in relation to the make-buy policy and the maximisation of the opportunities for UK contractors and local workforces.

The draft NDA procedure on the Make or Buy Decision Process (ref. NDA-CT-06), in Clause 5.2.1 "Stakeholder Considerations", suggests that Contractors "may also consider" impacts on

- diversity of the skills base
- business goals of current local and SME suppliers
- political and/or regional impact

Whilst BFWG is encouraged at the suggestion that Contractors should consider these issues, we believe that this should be a requirement (e.g. "the Contractor, in determining the make-buy plan, must take into account ……"). It should also consider:

- medium and long-term development of the skills base
- development (as well as "business goals") of local and SME suppliers
- medium and long-term political and/or regional impact

The option, in Section 4 above, for Contractors to "provide procedures for approval during the Transition Period" is of particular concern in relation to this issue.

We also note the resource implications for the NDA in monitoring the skills issue.

14.3 Approval of Subcontracts

Having considered the latest draft Heads of Terms and the draft NDA procedure "Use of Affiliated Sources by Contractors", we have concerns about the impact of BNFL's restructuring process, for example, the relationship with British Nuclear Group and its Project Services division. Some clarification on this issue is necessary.

16 Intellectual Property

The following are topics for further discussion, to be examined as part of the continuing development of LMU's contract strategy:

- How will the local-versus-national R&T needs be balanced? This balancing was accepted as an NDA role – but it is not obvious how this could be set up sustainably in the UK
- How will contractor commitment to, and delivery of, R&T be measured? The need for, and incentivisation of, new IPR development, is absent.

17 Confidentiality of Information and Disclosure

The HoT model still needs development to meet the commitment to openness and transparency in the White Paper. The document still refers to confidentiality rather than openness and transparency. Section 17 outlines general principles of confidentiality – current security developments (identifying buildings, waste streams etc.) may mean that the achievement of openness and transparency is not straightforward. In the interests of openness and transparency it is important that confidentiality should only apply by exception, and should be clearly justified by either commercial or security requirements. In our view, this definition of confidentiality should also apply to the contractor selection process. BFWG believe that DTI should undertake further work in this area.

Security issues, if taken to extremes, could severely hamper openness and transparency. This issue has been referred to the BNFL National Stakeholder Dialogue Security Working Group for advice and comment.

Potential taxpayer concerns about misuse of funds and excessive profit making by contractors will require information to be provided beyond the current FSA requirements. This needs to be clarified in NDA policies for openness and transparency.

Appendix 4

Developing a Stakeholder Engagement Framework for the NDA - BFWG submission to the DTI, 3 December 2003

Appendix 4. Developing a Stakeholder Engagement Framework for the NDA - BFWG submission to the DTI, 3 December 2003

Introduction

Business Futures Working Group (BFWG) is aware that DTI is assessing the outputs from a series of stakeholder workshops, with a view to preparing a consultation paper setting out draft proposals for a stakeholder engagement framework for the NDA.

As part of its work programme, BFWG has also been addressing what an effective NDA stakeholder engagement framework might look like. This paper summarises current BFWG thinking on this issue.

The paper covers the following:

- desirable attributes of the NDA stakeholder engagement framework
- proposed structure for delivery of desirable attributes
- test of the structure against key NDA tasks

BFWG considers that the structure set out in this paper could enable the NDA to deliver on the White Paper commitments to effective stakeholder engagement. Nonetheless, it suggests that DTI give some consideration to whether alternative structures might also enable the attributes to be met. In addition, BFWG recommends that once a structure is up and running, a process of ongoing review and evaluation is put in place to ensure that it can be revised as necessary to meet the needs of effective engagement.

Finally, BFWG recommends that DTI consider what preparatory steps it needs to take to ensure that the NDA will be well placed to oversee the development of a full framework shortly after its creation. These steps might include capacity building amongst key stakeholder groups, and setting up a shadow engagement structure.

1 Desirable Attributes of the NDA Stakeholder Engagement Framework

These include (not in any order of priority):

- ensuring the timely input of local and national stakeholder views, advice, and recommendations into NDA and licensee decision-making;
- acting as a sounding board for NDA and licensee proposals;
- helping the NDA to fulfil its strategic national role;
- ensuring that communities local to NDA sites feel that they have real influence on site clean-up;
- ensuring that all decisions impacting on a local site have taken into account the views of local stakeholders;
- ensuring that local stakeholders are able to play a role in proposing and weighing national priorities;
- pursuing a consensus-building approach;
- providing mechanisms for dispute resolution, either between stakeholders or sites;
- complementing and supplementing the role of representative democracy;
- generating trust and confidence in the decisions and activities of the NDA and site licensees;
- providing a clear and direct link with the NDA Board;
- providing effective liaison and interaction between national and local levels of engagement, and between sites;
- providing appropriate mechanisms for enabling anyone who wants to engage to do so; and
- ensuring cost-effective engagement and the avoidance of duplication.

2 Proposed Structure for Stakeholder Engagement

The structure for stakeholder engagement should enable the above attributes to be achieved. In order to do this, the structure must provide for engagement at national and local levels, ensure effective interaction and resolution of tensions between these levels, and consist of an appropriate mix of standing and time-limited bodies.

A proposed structure is shown in the Annex. This structure consists of the following:

Standing Bodies

- a local stakeholder forum at each NDA site
- a national UK stakeholder forum
- a national UK coordination group

Time-limited Bodies

- generic local issue groups
- national issues groups

As these bodies should adopt consensus-building approaches[11], BFWG does not envisage that they would have recourse to voting.

Local Stakeholder Forum

BFWG recognises that there may be significant variations in the intensity of engagement from site to site, dependent on the scale, nature and strategic significance of the local clean-up task, and the requirements of local stakeholders. Nonetheless, it recommends that local stakeholder fora have the following characteristics:

- sponsored by the NDA, but convened by an independent party;
- ideally meetings should be independently facilitated (a second best is to have 'independent' chairs) and there should be a small independent (non-NDA) secretariat function;
- does not have decision-making role, but inputs timely advice and recommendations to the NDA, the main site contractor, National Stakeholder Forum and local decision-makers as appropriate;
- fulfils a scrutiny role in relation to site activities, including performance monitoring of contractors;
- is made up of participants drawn from wide range of local stakeholders, including site licensee, site workers, the regulators, all tiers of local government, community groups and NGOs;
- these participants are empowered to deliver advice and recommendations without need for reference back to their organisations;
- can set up working groups to develop draft advice and recommendations;
- can sponsor wider local community and public engagement processes eg open fora, focus groups and citizens panels;
- liaises with National Coordination Group re setting up of working groups or sponsoring of wider local engagement processes, and about the potential need for generic local or national issue groups (see below for the distinguishing characteristics of these two types of group);
- is given a proper level of guaranteed resourcing (financial, technical and training) from NDA or Government;

[11] Consensus is sometimes referred to in a negative way as *just* a compromise. Although some form of compromise may be involved, *processes of consensus-building* can generate new proposals and approaches, often securing outcomes which enable the parties involved to walk away with more than they came in with and often more than they expected.

- participants in the forum or its working groups should receive remuneration if participation is not part of their paid work;
- a forum would nominate 2-4 representatives to attend the National UK Stakeholder Forum, and an appropriate number to attend generic or national issue groups;
- produces an Annual Report for submission to the National UK Stakeholder Forum and the NDA Board.

National UK Stakeholder Forum

- sponsored by the NDA, but convened by an independent party
- meetings of the forum must be independently facilitated and there should be a small independent (non-NDA) secretariat function;
- inputs timely advice and recommendations into NDA decision-making on strategy, priorities and work programmes;
- comments on draft NDA strategy and Near Term Work Proposals prior to the submission of these to the Secretary of State for approval, and following consultation with Local Stakeholder Fora;
- fulfils scrutiny role in relation to NDA activities;
- provides regular progress reports to the Local Stakeholder Fora;
- is made up of participants drawn from each Local Stakeholder Forum, and from national stakeholder groups including the regulators, local government bodies, trade unions and NGOs;
- a member of NDA Board participates in the forum;
- meets around 4 times a year;
- can sponsor time-limited bodies and wider public engagement processes;
- is given a proper level of guaranteed resourcing (financial, technical and training) from NDA or Government;
- participants in the forum should receive remuneration if participation is not part of their paid work.

National UK Coordination Group

- role confined to ensuring that processes are in place to deliver effective engagement;
- sponsored by the NDA, but convened by an independent party;
- meetings of the group must be independently facilitated;
- ensures effective liaison and interaction between the NDA Board, the National UK Stakeholder Forum and the Local Stakeholder Fora;
- ensures effective coordination of process initiatives at local and national levels, including the setting up of generic local issue groups and national issue groups, and wider engagement processes;
- its membership is nominated by the National Stakeholder Forum to reflect range of stakeholder groups and geography;
- meets around 8 times a year;
- ensures proper level of resourcing (financial, technical and training) throughout the stakeholder engagement structure;
- members of the coordination group should receive remuneration if participation is not part of their paid work.

Generic Local Issue Groups

- set up in consultation with national coordination group to develop draft advice or recommendations *on an issue relevant to more than one NDA site*;
- made up of nominees from the relevant Local Stakeholder Fora and, if appropriate, the National Stakeholder Forum;
- liaise with the Coordination Group re progress;

- report to the relevant Local Stakeholder Fora and the National Forum;
- meet as and when required to complete its task and is then disbanded;
- require a proper level of resourcing from NDA or Government;
- participants should receive remuneration if participation is not part of their paid work;
- meetings must be independently facilitated and if necessary there should be a small independent (non-NDA) secretariat function.

National Issue Groups

- set up by National Stakeholder Forum as necessary to work *on a national issue relating to NDA strategy, priorities or programme*;
- made up of nominees from the National Forum;
- liaises with the Coordination Group re progress;
- reports to the National Forum;
- meets as and when required to complete its task and is then disbanded;
- requires proper level of resourcing from NDA or Government;
- participants should receive remuneration if participation is not part of their paid work;
- meetings must be independently facilitated and if necessary there should be a small independent (non-NDA) secretariat function.

3 Test of the Structure against NDA Tasks

It is recommended that the structure be tested by assessing how it would be used in relation to key NDA tasks.

The following examples have been considered:

Setting of Priorities in the Near Term Work Programme (NTWP)

- NDA wants to identify national priorities in a way which will secure wide stakeholder buy-in;
- assume LMU has developed a draft prioritisation methodology which has already been subject to wider stakeholder input;
- NDA submits the draft proposal to the National Stakeholder Forum;
- the National Stakeholder Forum comments on the proposal or sets up a NIG to examine it in more detail and make suggestions;
- NDA then adopts a prioritisation methodology which has been subject to wide stakeholder discussion and achieves the greatest possible level of support (the methodology is likely to take into account a range of factors, including the importance of hazard reduction);
- the NDA identifies proposed priorities using (a) the widely supported methodology and (b) the proposed NTWPs from individual site licensees (which have taken into account the views of the relevant Local Stakeholder Forum);
- the NDA submits the proposed priorities to the National Stakeholder Forum for comment;
- the National Forum formulates comments or sets up (or reconvenes) a NIG to do so.

Annual Review of the Case for Continued Operation of Commercial Plant

- NDA will have to undertake the annual review within the policy framework established by the White Paper;
- NDA asks Coordination Group for advice on how to undertake and report the annual reviews in a way that will secure stakeholder confidence in the findings;
- Coordination Group may, for example, recommend a peer review process involving a national issue group (with participants from appropriate Local Fora and independent experts);

- the output of such a review process could be submitted to the National and relevant Local Fora and be published.

Review of Magnox Reactor Decommissioning Strategy

- NDA wants to undertake a review and ensure stakeholder input;
- NDA takes issue to National Stakeholder Forum;
- Forum decides to set up a National Issues Group (NIG) to undertake/participate in review;
- relevant Local Fora invited to participate in the NIG;
- NIG output considered by relevant Local Fora and/or National Forum prior to submission to NDA Board.

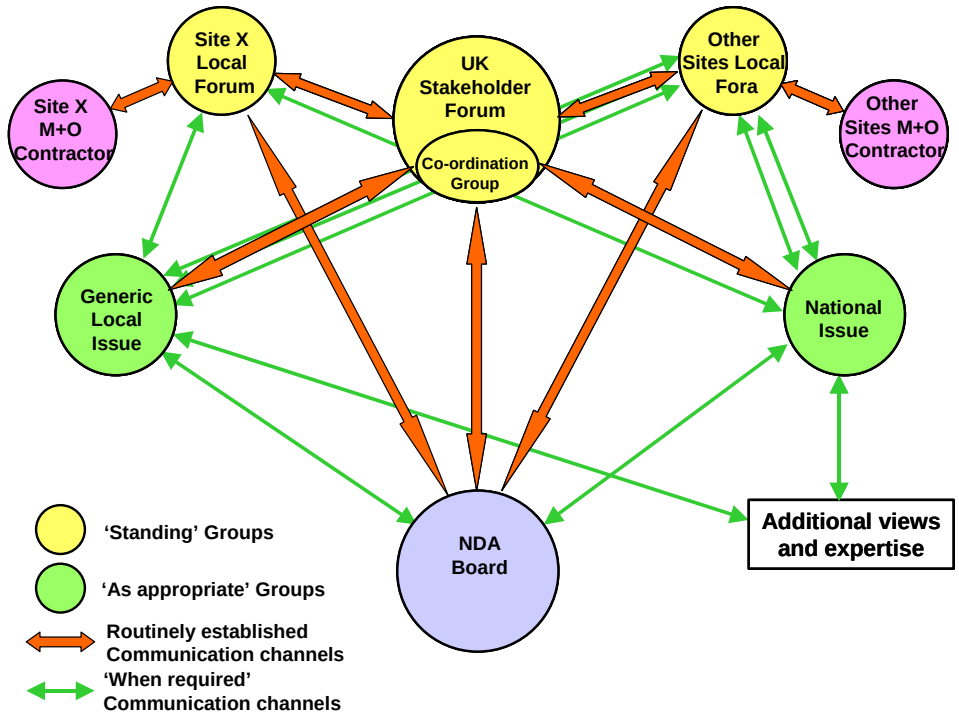
Consolidation/Rationalisation of ILW Storage Facilities

- NDA may wish to concentrate ILW storage facilities on a limited number of sites;
- NDA takes issue to Coordination Group which proposes a process for seeking wide stakeholder buy-in to NDA proposals;
- this process may involve inviting Local Stakeholder Fora from potentially affected sites to nominate members to form a Generic Local Issues Group (GLIG) to participate in a BPEO-style exercise to explore robustness of rationale for consolidated/rationalised storage;
- GLIG could report to relevant Local Fora and National Forum;
- the National Forum would then submit advice and recommendations to the NDA Board, based on feedback from the relevant Local Fora.

These tests suggest that the proposed engagement structure is fit for purpose. It is recommended, however, that the DTI consider further examples when assessing this and other potential structures.

Annex 1. Proposed Nuclear Decommissioning Authority Consultation and Stakeholder Engagement Structure

Nuclear Decommissioning Authority – suggested stakeholder engagement process



Appendix 5

Overall Comments - NDA Arrangements for Stakeholder Engagement (Draft). 21 May 2004

Appendix 5. Overall Comments - NDA Arrangements for Stakeholder Engagement (Draft). 21 May 2004.

We applaud DTI's work in attempting to take the outline framework a step further to put in place a firm expectation on NDA to work with stakeholders in an open and inclusive way. We believe that, if properly formulated, this approach will effectively commit NDA to a path which can command wide stakeholder buy-in. Conversely, the process to date has raised expectations, which, if not fulfilled could cause stakeholder disillusionment. At the same time, it needs to be emphasised that the responsibilities lie with the NDA as the problem holder and the final decision maker. It cannot absolve itself of these responsibilities by delegating them to stakeholder groups.

The document should commit NDA and its contractors to provide the openness and transparency necessary to enable stakeholder engagement to thrive. In due course this should take the form of a 'NDA Charter' laying out its commitment to the stakeholder involvement process and the principles which it would expect to see reflected in its contracting organisations at all levels.

Overall, the draft paper appears far too prescriptive on the participants in the engagement process (what the groups are called, how they will be run etc.) without being firm enough in defining the path for the NDA. In order to meet this intent, the paper needs to be recast to allow greater freedom to stakeholder groups (freedom to choose 'how') while being clearer and firmer in defining the approach required by the NDA (define the 'what'). That said, the ability to view, and comment on, documents in a relatively 'raw' draft state shows a step change in the openness and transparency of the DTI process. All stakeholders will have to adapt to seeing work in progress at an earlier stage than hitherto and be prepared to give constructive criticism, rather than the destructive criticism which is the inevitable reply mode from our 'Decide Announce Defend' past.

Throughout the document a committee structure is explicitly and implicitly assumed for LSG[12]s. A committee is a generally taken to be a decision making body whose members are elected, and this is the picture of the SSGs that emerges from the way the current document is written. An SSG is an advisory body whose members are appointed. It is not surprising, therefore, that throughout the document the effectiveness of the process is compromised by being shoehorned into a potentially inappropriate structure. This is a good example of the disconnect between the framework document, the structure diagram, and this document. It is worth labouring the point that the NDA needs to know the level of controversy about any subject, not a voted-on committee view which masks the opinions of a sizeable minority of dissatisfied stakeholders. It is also notable that recent advisory 'committees', for example RWMAC and CoRWM, are in fact appointed, and reach their recommendations by consensus.

The SSGs will need to deliver opinions and advice within the strategy framework set by the NDA. If the SSGs are to have a choice in their method of working, there will be a need to raise awareness of, and skills in, the range of approaches and methods available. The changes that are necessary will require support to ensure that the transition from existing structures to new arrangements can be successfully implemented. This support needs to

[12] BFWG recommends that the term 'Site Stakeholder Group' is used as the generic term to allow for the fact that it may be appropriate to extend membership to stakeholders from outside the locality – and we have used SSG throughout the remainder of this response.

be provided now. The opportunity will then be available to take advantage of the diversity which develops to compare results and drive best practice.

The role of Local Authorities needs to be understood. As well as being statutory consultees on NDA Strategy and Action Plans, they have community leadership, regulatory and statutory responsibilities (including emergency planning) that will impinge on NDA activities. In addition, they also have a responsibility to engage their residents in the development of local policies and services including those related to the nuclear industry. Further consideration should be given to how they can engage with the SSGs and NSG regarding their existing accountabilities.

An SSG must have equality of voice for all members. Separate and effective channels are needed for local representatives to consult the SLC or, where necessary, the NDA. But this is part of 'business as usual' – not part of the stakeholder engagement process.

If this structure is set up and operates effectively, it could well develop a wider role in consultations on other nuclear subjects, ensuring effective engagement and coordination across a wider field, using limited stakeholder effort more efficiently avoiding 'stakeholder fatigue'.

Annotated Comments - NDA Arrangements for Stakeholder Engagement (Draft)

Introduction

This paper sets out the arrangements for NDA engagement with its stakeholders at both the local and national level. It is based on what participants told us during the DTI regional stakeholder workshops held during 2003, and reflects the draft stakeholder engagement framework as amended following public consultation between December 2003 and March 2004 (Ref. 1).

Should here state briefly why the NDA should want this framework and what it needs to be achieved.

Annex 1 illustrates the proposed arrangements and is adapted from submissions to DTI.

In this draft there is little link between the prescriptive, rigid structure proposed and the more adaptable and organic arrangements indicated by the diagram.

N.B. These arrangements are intended to build on and extend the existing processes used by both BNFL and UKAEA for engaging with their stakeholders.
Reflections from Round 3 fora meetings suggest that this will give little confidence in a new way of working being established. In particular there may be a temptation to continue in the 'old ways' of committee structure. We suggest that there will be a need for a clean break, whilst acknowledging the useful work done by LLC/LCLCs, and identifying a new way of working – particularly if some aspect of facilitated working evolves for the SSGs, and this will require immediate support from DTI.

Outside (*why 'outside'? – openness and transparency must be an overall attribute*) the formal mechanisms described in this paper, the NDA will operate openly and transparently with stakeholders at both local and national level. This will include (as necessary) public meetings, meetings and discussions with community and workforce representatives, regulators, and stakeholder organisations. Nevertheless none of these arrangements will remove accountability for decision-making that will remain with the NDA.

Local (near site) engagement

The NDA will conduct its business in an open and transparent manner, allowing stakeholders the opportunity to understand plans and receive reports on the progress of work. As part of this process regular meetings will be held in public locations near each of the NDA sites.

The local body will be called the "Local Stakeholder Group" (*We have termed this the Site Stakeholder Group, SSG*) which will hold meetings that are open to the public and press. Opportunity will be given to the audience to table questions, but the meetings will not allow public debate. Such opportunities may be provided by means of public meetings organised by the NDA, as necessary, to address specific issues of particular local interest.

This section is unnecessarily prescriptive. Whilst it may be a laudable aim to have similar names for each SSG this is not a necessity. Let each of them evolve this naturally – in

fact the very act of deciding on a name will be a useful exercise for the group and will itself signal a 'new beginning'.

The question of public debate needs much greater clarity. There is a concern that unless a clear structure, decided and initiated by the SSSG, is in place to engage the public, then any public viewing of the SSSG meetings could be a recipe for disaster. Account should be taken of other stakeholder engagement and advisory processes, e.g. CoRWM, ISOLUS, RWMAC, industry initiatives, and any formal evaluation of these. NDA should establish with SSGs what they have to achieve (as laid out in the bullet points below), and should invoke the principle that all documentation and information is available with exceptions agreed by the SSG – to allow it to discharge these responsibilities effectively. . Fora must then be set up to allow best practice to be shared so that the system as a whole improves and develops.

The *SSG* will not have a formal decision making role in respect of site activities, but it will be responsible for reflecting local views by inputting advice, expressing views and commenting on the progress of work on site.

How will these responsibilities be accounted for, and to whom? What auditing /scrutiny is required? We suggest that this is a responsibility of the NDA who must be tasked (either directly or through an independent convenor) to set up SSGs to progress these issues on its behalf.

Building on the experience of the existing Local Liaison Committee/Local Community Liaison Council structure, the NDA Local Stakeholder Group (LSG) will have the following role and remit:

- To provide an active, two-way channel of communication between the site operator, the NDA and local stakeholders.
- To give an opportunity for questioning the operator, the NDA and regulators.
- To represent local views and input timely advice to the NDA.
- To comment on the performance of NDA and its contractor with regard to achievement of plans, value for money etc.
- To commission and receive reports about activities and their impact on for example safety, the environment, health *and the local economy*.
- To review arrangements for such matters as emergency response, noting that in replacing LLCs there may be local responsibilities which would need to be performed by other mechanisms.
- To scrutinise and input into the prioritisation of work programmes.
- To provide views and comments to the NDA on the future of the site
- To provide views on the NDA contract with *the operator, and all aspects of the operator's performance*.
- To set up sub-groups to address specific issues relevant to the clean up programme.
- To set up wider local consultation via public meetings and other mechanisms as required.
- *To make all of the above openly and transparently accessible to interested stakeholders and to produce an annual report.*

Membership

The 'framework' document suggests the opportunity for facilitated meetings in a way that this formalised approach fails to do. The possibility of setting up SSGs via an independent convenor, funded by the NDA, should also be included.

Membership of the LSG will include elected representatives of the local community such as Parish, Borough and County councils. It will also include nominated Council officers, the Emergency services, the Health service, regulators, the site operator, union representatives, the NDA and other stakeholders as appropriate. In particular, opportunity will be given for a representative of local Non Governmental Organisations (NGO) to be a full member of the LSG.

The 'singular' local NGO representative is a totally inadequate reflection of membership needs. There is no generally accepted definition of an NGO or list of appropriate contenders. This makes the wording meaningless and liable to misinterpretation. The SSGs must take on board the definition of a stakeholder as 'someone who is interested enough in the site to want to be involved ' and set up a system which can cope with this.

All members of the LSG will be appointed to serve for a period of up to 5 years, subject to renewal by agreement. The Chair and deputy chair (independent of both the contractor and the NDA) will be elected from the main body of the LSG and be subject to re-appointment every year.

The prescriptive introduction of 'Chair' and 'Deputy Chair' immediately predisposes the SSG to act as a Committee – with all the attendant voting and factionalism. This is will not meet the SSG role as defined above. A view from the SSG to the NDA which has been carried by an 8 to 7 vote will be next to useless. Elected committees are fundamentally decision making bodies – they are fundamentally unsuited to an informing, commenting and advisory role.

As presented the 'chair' will inevitably be an elected local community representative who will naturally attempt to structure meetings in the 'council' structure. We need examine the role of, and indeed the need for, a 'Chair' in the light of the defined role of the SSG.

It will be the responsibility of the LSG to keep committee membership under review to maintain a correct balance of interests, experience and expertise as the site changes during decommissioning. Similarly each LSG will be required to agree (with the NDA) and publish its constitution, detailed terms of reference and code of conduct for meetings.

Delete 'committee' insert 'its'

As representatives of their constituents, LSG members will be expected to fully represent their views and will be accountable for communicating both ways with their constituencies.

The overall communication responsibility should lie with the SSG as a group – not its members. Presumption of constituency excludes individuals, experts, specialists, and interested members of the public.

Funding of LSG activities

In order to carry out its role effectively the LSG will be funded by the NDA through the site contract (and budget) as an identified allowable expense, including the provision of secretarial/administrative support. LSG activities and their associated costs will be included in the Near Term Work Plan and be subject to review as with all other planned activities on site.

This method of funding will fetter the work of the SSG as it will be in the gift of the site contractor to prepare costing submissions for the NTWP. Any work not identified through this mechanism, in advance, will not be funded. A better system of funding is required, for example the SSG could submit its own bids for work and leave the NDA to decide appropriate funding (with opportunities for negotiation). The provision of secretarial / administrative support by the site contractor may also hamper progress. Some form of independent convenor role may be more appropriate.

To reduce barriers to engagement, members of the LSG will be entitled to claim out of pocket expenses to attend meetings. NDA will consider reimbursement of other expenses on a strictly case by case basis.

The 'framework' document suggests that this mechanism could be developed by agreement with stakeholders. We would support this as it will give credibility to the final decision.

Frequency and location of meetings

The LSG will meet at least twice per year but depending on site circumstances and the wishes of the meeting itself, the LSG may decide to meet more frequently, for example during periods of rapid change on the site, or to deal with specific issues. Depending on the needs of the local community, current issues and the status of the site, the LSG Chairman will be expected to convene special meetings at different times and in different locations to allow wider input of local views.

Again the conventional committee structure envisaged puts all the responsibility on the Chair rather than collectively on the group. The need for special meetings once more points to a role for an independent convenor.

Building capacity

In order for the LSG to function effectively, members will be given induction training to understand site activities and the processes used to manage decommissioning. In the event that the LSG decides to set up working groups to consider specific topics on behalf of the LSG or if there is need to refresh member's knowledge, additional support or training will be given as necessary.

This is far too technically oriented, with no mention of capacity building in areas such as collaborative working/dialogue etc. Any such capacity building, which would be by the site operator, would only take place if it were built into the NTWP in advance, which again points to the inappropriateness of this funding route. As mentioned before, increasing knowledge of the range of engagement processes available would enable stakeholders to choose the most appropriate mechanisms for their needs.

Representation at National Meetings

Each LSG will nominate two members to formally represent the LSG at the NDA National Stakeholder level. Although this would normally be the Chairman plus one other member, each LSG will have the ability to nominate whom so ever they like. The arrangements for these meetings are described in the following paragraphs.

Again too prescriptive – the group representatives should be whoever the group wants, and the numbers similarly need to evolve from experience.

National engagement

The national arrangements must reflect NDA's responsibility to be an open and transparent organisation at both national and local level, and must include the ability to resolve tensions or any issues that may arise. The national body will be named the "National Stakeholder Group" (NSG) and act as the main interface between stakeholders and the NDA at Board level. In addition to representatives from LSGs, the NSG will also incorporate other stakeholders that have a legitimate interest in the work of the NDA (including foreign governments). On that basis it is likely to involve large numbers of people, at least initially.

Again applies value-judgement – what is a 'legitimate interest' – the NSG must be set up to handle the stakeholder definition as 'someone who is interested enough to want to be involved'. This almost certainly requires an independent convenor, as indicated below.

NSG terms of reference

The NSG will provide an opportunity for stakeholders to question/challenge representatives of the NDA Board and input their views. It will also allow interaction with site contractor management, local, national and international stakeholders.

Operating under the sponsorship of the NDA, the NSG will be independently convened and facilitated, and will have clear links to the LSGs to ensure 2-way flow of information. Its terms of reference will reflect the national responsibilities of the NDA but also take into account interests of the local representative bodies.

In broad terms, the NSG will:

- Give an opportunity for stakeholders to question the NDA about performance and achievements.
- Provide opportunities for stakeholders to input advice and comment on the NDA strategy and plans before they are submitted to the Secretary of State for approval.
- Allow stakeholders to input their views on prioritisation of work programmes.
- Have clear links to the local arrangements to allow 2-way flow of information.
- Receive and consider reports from LSG sub-groups that have relevance to national considerations.
- Sponsor sub groups to address specific national issues for the NDA.
- Review the performance of NDA stakeholder engagement at both the local and national level.

Membership

The NSG will include at least one representative of the NDA Board as well as nominated representatives of the local stakeholder groups as previously stated. Membership will also be open to application from any national (or international) organisation or individual that can demonstrate an interest in the activities of the NDA and its success.

All NDA Board members and first tier management staff should be members of the NSG and invited to attend its meetings.

What would be the criteria, and who would develop them, upon which members will be asked to demonstrate their interest, and who would decide success? Once more use the stakeholder definition as 'someone who is interested enough to want to be involved' – and set up a system to handle it.

Although membership will be open to all legitimate interests, considerations relating to the expenditure of public funds may require some restrictions to be placed on individual membership in favour of representation from bona fide organisations. In this case individuals may be referred to a relevant LSG as a means of getting their views reflected nationally.

The size limitation based on funding is probably acceptable but the wording needs improvement. How is an organisation to be defined as 'bona fide'? Again best dealt with by the independent convenor.

Funding of NSG activities

All activities and meetings of the NSG will be centrally funded by the NDA, who will also provide a secretariat to support the NSG.

The secretariat should not be provided by NDA, a suitable convening organisation should fulfil this role or employ an independent secretariat.

In common with the arrangements at local level, attendees at NSG meetings will be entitled to claim out of pocket expenses. Again, NDA will consider reimbursement of other expenses on a strictly case by case basis.

See comments for SSG.

Frequency of meetings

The NSG will meet at least once per year in a location that is consistent with the NDA's role as a national organisation and its status as a non-departmental public body.

Co-ordination of stakeholder activities

Recognising the overall complexity of NDA stakeholder engagement, it would be helpful for the national (and local) bodies to have support from a co-ordination group. This group would be sponsored by the NDA Board to oversee the relationship between the NDA and its stakeholders as well as to review the processes being used.

This group should also be independently convened and facilitated.

Meeting at least quarterly, the remit of this group would be:

- To ensure smooth running of the whole process.
- To manage emerging issues and co-ordinate the setting up of working groups at both local and national level.
- To monitor overall performance of the process and its achievements.
- To liase with other nuclear engagement processes to promote the effective use of the limited stakeholder capacity and avoid 'stakeholder fatigue'.

The group should assist the convenor and the NDA in these activities and not take management responsibilities.

Membership of the co-ordination group would include a senior representative from the NDA, agreed representation from NDA sites, regulators and other stakeholder organisations.

The membership should be nominated from the NSG, include one NDA Board member and senior staff member, and be funded as for the NSG. The process between nomination and membership should be dealt with by the independent convenor.

Additional considerations

To maintain an adequate understanding of local issues, it is likely that the NDA will wish to meet regularly with LSG representatives. On that basis the NDA will hold an annual LSG Chairman's meeting to discuss and share issues that have arisen at the local level. Membership of this meeting will comprise the Chairman (or nominated deputy) of each site LSG and a representative of the NDA Board.

This smacks of procedures being bypassed!! In the interests of openness and transparency how is this activity to be recorded, reported and audited. Will it be accountable to the NSG? How will it input to the rest of the framework? It needs to be more tightly bounded to be acceptable. As a minimum the SSGs should nominate their representative – again need to remove 'committespeak'.

More Additional Considerations

Overall this paper falls short of the aspirations of the 'framework' document. It is overly prescriptive and formal in relation to the more open and dialogue orientated 'framework'.

The paper fails to address openness and transparency by suggesting mechanisms for information sharing – a matter which is of considerable interest to all stakeholders.

The paper does not address the issues of evaluation, which needs to be in place from day 1, and any mechanisms for dispute resolution, which again may be needed in the early days.

The need for experts / specialists to be available to input to SSG and NSG meetings will also need consideration in order to obtain mutual confidence in the information being presented. This facility is indicated in the attached modified diagram.

Conclusions

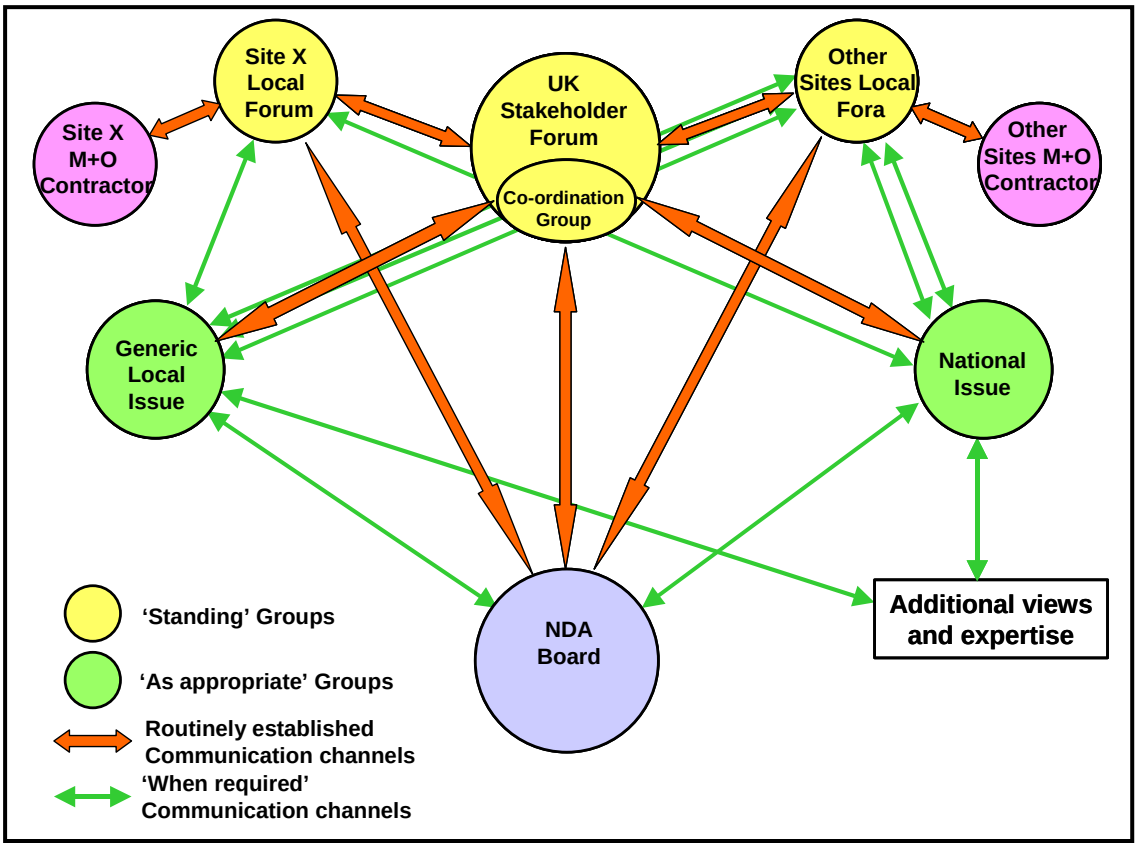
This paper reflects initial thoughts on the arrangements for NDA engagement with its stakeholders. Although the final decision will be down to the NDA, it is recommended that the structures described in this paper should form the basis of the arrangements that the NDA puts in place.

The paper as written does not adequately reflect the 'framework' document and as such provides a hostage to fortune.

References

1. Draft Framework for Stakeholder Engagement and Transparency for the Nuclear Decommissioning Authority (NDA) – December 2003.

Annex 1. NDA Stakeholder Engagement Structure



Appendix 6

Ministerial Announcement July 2003

Appendix 6. Ministerial Announcement July 2003

Note 1 July 2003

I very much welcome BNFL's announcement today of the appointment of Michael Parker as their new Chief Executive. He has a broad range of experience in challenging and senior posts in Dow Chemical. I would also like to pay tribute to Norman Askew, whose contribution to BNFL's progress over the last few years has been immense. He passes on excellent work on which to build a successful future.

I am announcing today that the Government and the BNFL Board have agreed to conduct a joint review of BNFL's future strategy.

There have been significant developments in BNFL's key businesses, the nuclear industry and in the Government's efforts to encourage a competitive clean up market in the UK since 2001. On this basis, the Government has decided that a flotation of the company after the Nuclear Decommissioning Authority has been formed should no longer be an option. The review will evaluate options for alternative strategies. It will be conducted against the framework of the Government's policy objectives set out in the White Paper ('Managing the Nuclear Legacy - a Strategy for Action') and in particular the need to develop a competitive market for nuclear site management which is fair and open.

One of Michael Parker's key early challenges will be to lead the BNFL team working on the review with the Government. The review's output will be recommendations to Ministers on alternative strategies, with the aim of building on the company's progress towards improved performance across its businesses. In the meantime BNFL will continue to give top priority to improving the performance of its clean up and related operations.

I have asked the review team to report to the BNFL Board and to me in the Autumn

Appendix 7

Corporate Strategy Review – BFWG Additional Key Tests

Appendix 7. Corporate Strategy Review – BFWG Additional Key Tests

In his note to BFWG of 16 July 2003, David Bonser proposed three key objectives for any proposed strategy to be met by the BNFL-DTI Strategy Review. These objectives were that any new structure will:

- lead to safe and efficient cleanup of sites and reduced hazard;
- facilitate effective, fair and open competition in the UK cleanup market;
- keep management skills available to implement the strategy.

The BFWG reviewed these objectives against its 'Principles for Liability Management' and its 'Draft Second Interim Report, Appendix 4 – Key Survival Issues: Utilities and Government Services Business Groups'. The review identified a number of areas where we believe additional tests would lead to improved stakeholder confidence in the review process and its outcome. These areas are listed below and are responses to the generic question:

'How will the new structure demonstrate that it can provide significantly enhanced performance in comparison to the current structure?'

Environment

Best possible environmental performance including:

- environmental management practices;
- development of sinks and disposal routes.

Safety/hazard

Safer and more effective cleanup of sites to reduce the hazard and the vulnerability to major events (accidents and terrorist action).

Local communities

- sensitivity and responsiveness to the needs of the local community;
- timely arrangements for mitigating adverse socio-economic changes.

Openness and transparency

A culture of openness and transparency, which is not impaired by organisational complexity.

Stakeholder Engagement

- as much engagement as possible throughout the review process;
- maintenance and development of enhanced stakeholder engagement programmes building trust and public confidence.

National and International Cleanup Capability

The maintenance, development and exploitation of the UK's independent clean up abilities allowing operation in UK and overseas markets to:

- maintaining intelligent customer capacity;
- maintaining critical mass for UK entities to operate successfully in the UK and overseas;
- providing the ability to satisfy existing contracts; and develop the supply chain.

Skills base
The attraction, maintenance and development of a workforce that:

- retains key personnel;
- values existing knowledge and experience;
- is capable of transferring skills, knowledge and training;
- enjoys good service conditions; and
- is given effective leadership, motivation and culture, including 'change management'.

[BFWG identified the need to recognise the tension between the potential requirement to maintain skills to support a national civil nuclear power capacity (or to support international reactor sales) and the linkage of these skills in any new business structure focussed on decommissioning.]

Knowledge base
Maintenance, development and exploitation of the existing knowledge base to:

- enable/encourage long term R&T
- apply R&T effectively; enabling adaptability and innovation
- secure key facilities e.g. Labs.;
- maintain IPR.

In addition, BFWG identified the three areas below which are important to the definition of, and evolution to, any final structure.

Transition arrangements
Implications of the implementation of the transition arrangements to any new structure must be factored into the final decision.

Regulatory Requirements
In the event of proposals to separate out various functions and activities each independent part shall meet all necessary regulatory requirements including in particular intelligent customer capability.

Physical assets
The degree to which the structure ensures adequate resourcing e.g. access to key assets and adequate funding.

31.07.03

Appendix 8

DTI Press Release - Thursday 11 December 2003

Appendix 8. DTI Press Release - Thursday 11 December 2003

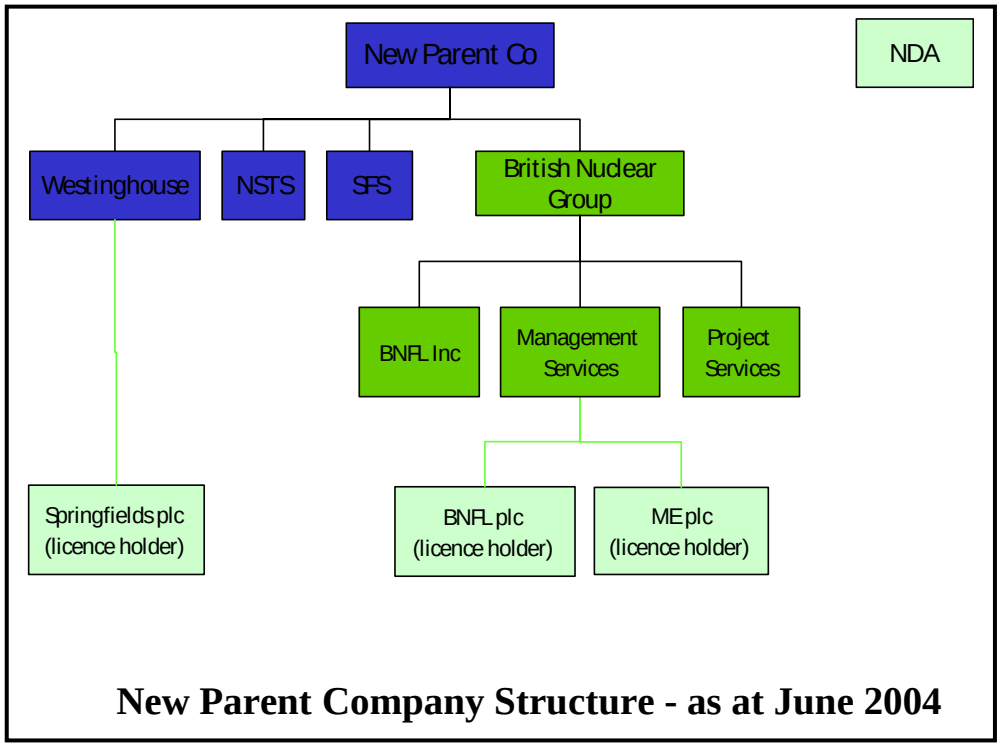
HEWITT SETS OUT NEW PATH FOR BNFL

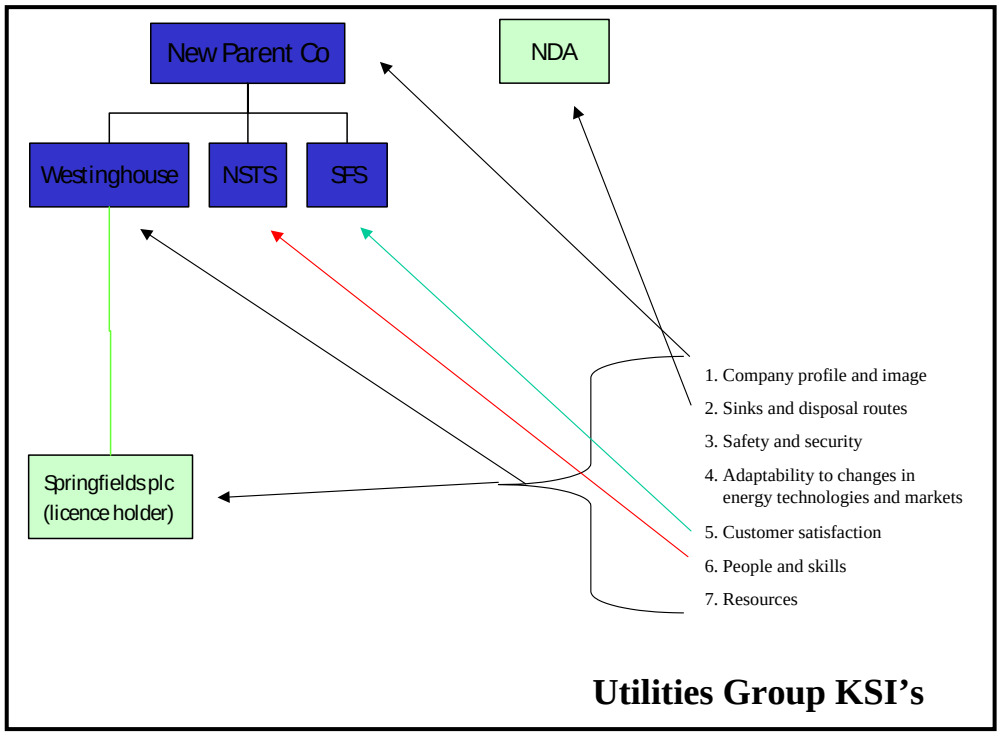
Conclusions of BNFL Strategy Review published
Secretary of State for Trade and Industry, Patricia Hewitt today published the Government's conclusions for the restructuring of BNFL ahead of the Nuclear Decommissioning Authority (NDA) being established in April 2005.
Last July the Secretary of State announced that a flotation of the company was not in the best interests of the taxpayer and initiated a joint review between Government and BNFL to evaluate alternate strategies in the post- NDA market.
The review was conducted in accordance with the Government's overriding priority to ensure the safe, efficient and effective clean up at Sellafield and other civil nuclear sites, and to focus BNFL's future activities more closely on the challenges of UK nuclear clean up.
The main conclusions are:
* a new parent company will be established in April 2005 to hold those parts of BNFL that will not become the NDA's responsibility;
* the principal focus of the new parent company will be the clean-up at UK sites;
* concurrently with the new parent company being established, a new group of subsidiary companies will be set up with initial responsibility for managing clean-up operations at sites under arrangements to be agreed by the NDA;
* the vast majority of the existing BNFL UK workforce will remain employed by companies that operate current BNFL sites - other employees will transfer into companies within the clean-up group;
* a new Nuclear Science and Technology Company (NSTS) will be formed as a subsidiary, and will provide research and technology services on a commercial basis;
* other businesses will be managed to deliver value and in a way that limits and controls risk to the UK taxpayer
The Secretary of State announced today's conclusions in a written statement to Parliament and placed an explanatory note about the review in Library of the House.
The conclusions of the review will help deliver the policy objectives set out in the "Managing the Nuclear legacy" White Paper July 2002 and are consistent with commitments made in the Energy White Paper February 2003 to keep the nuclear option open.
Full copies of the statement and the explanatory note are available at:
http://www.dti.gov.uk/nuclearcleanup/wn.htm
The announcement of the start of the review was made on 3 July and a full copy of that statement is available at:
http://www.dti.gov.uk/nuclearcleanup/tl/tl-cs.htm
Notes for Editors
1. The review has been a joint process between HM Goverment, BNFL and their respective advisors. BNFL advisors are N M Rothschild and Sons and Freshfields Bruckhaus Deringer; HMG advisors include HSBC, Deloitte and Touche and Herbert Smith. [The Shareholder Executive have also been closely involved in the review process.]
2. The conclusions will begin to take effect in shadow form from April 2004, and will come formally into effect when the NDA is established in April 2005.
3. The company will start to implement the conclusions within their business plans and corporate strategy, in order to have shadow formation in place by April 2004.
Department of Trade and Industry
7th Floor
1 Victoria Street
London SW1H 0ET

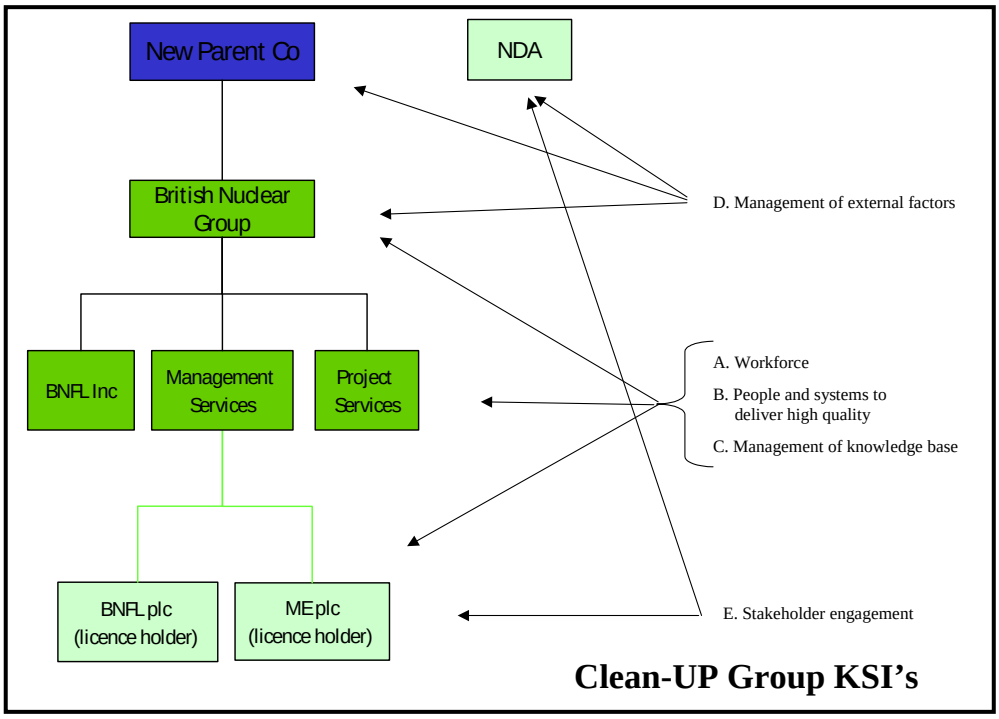
Appendix 9

Tracking KSIs to New Company Structures

Appendix 9. Tracking KSIs to New Company Structures







BFWG KSI's

General

In mapping the KSI's determined for both the Utilities Group and the Government Services Group across to the NDA/new BNFL structure that is expected to exist in April 2005, there are inevitably areas of uncertainty and duplication. Never-the-less, the bulk of the KSI's can, at the structural level, be mapped across. It is recognised, however, that the actual relevance to the new Businesses can only be determined when those Businesses are firmly established with clear remits and goals published.

Government Services Group KSI's

The Government Services Group KSI's mainly transfer to the site licence holding Companies of BNFL plc and Magnox Electric plc as this is where the majority of the workforce is employed and operations are conducted. A significant number also transfer to the NDA where strategic direction, prioritisation and funding are decided.

British Nuclear Group, and its subsidiaries Management Services and Project Services, would have new KSI's that would be of a similar nature to those of the former Government Services Group.

An element of knowledge base preservation would transfer to the new BNFL subsidiary of NS&TS, the research and technology business, although the site licence holding Companies would continue to have to meet their site licence commitments in this respect.

KSI	Comment
1. As people are BNFL's core asset, new BNFL needs to attract, maintain and develop a workforce that is: • Well led • Motivated • Skilled • Effective • Knowledgeable	This KSI applies to all the Companies that will exist, new and old, post 2005 and the NDA. However, the vast majority of existing BNFL and Magnox UK employees will continue to be employed by the site licence holding Companies BNFL plc and Magnox Electric plc. The KSI was intended to cover the principal workforce of BNFL so maps across to the site licence holding Companies.
2. As BNFL's future is being a contractor, its focus of people and systems must be on consistent and high quality delivery of contracts in a commercial environment	The M&O contracts will be held by the site licence holding Companies. They will need the focus of this KSI. British Nuclear Group's Management Services business will bid to manage the site licence holding Companies and if successful would appoint management teams. Thus, it also needs the focus provided by this KSI. It maps across to the site licence holding Companies and British Nuclear Group.
3. Since knowledge is another key asset of BNFL, new BNFL must maintain, develop and exploit its knowledge base in order to stay at the leading edge and expand into the international cleanup markets in the long term.	This KSI, as written, clearly maps across to British Nuclear Group as it will be the Business trying to exploit BNFL's existing knowledge overseas. However, the need for the site licence holding Companies to manage their knowledge base to ensure safe operations, efficient working, deliver the work plans and to meet site licence requirements is clear. The knowledge management aspect of this KSI therefore also maps across to them. The new Company NS&TS, which will provide scientific and technical services to NDA sites, will have a significant knowledge management role to play in the scientific and technical arena. This KSI also maps directly to them.
4. Since there is a minimum level of work to be viable, new BNFL must assess and manage external factors that affect contract scope and develop appropriate contingencies. These external factors could include: • Political influence • Legislative and regulatory framework • Funding constraints • International obligations Appropriate contingencies could include: • Diversification • Other world markets	Management of external factors is normally conducted at the Corporate or strategic level of a Company. This KSI therefore would map across to British Nuclear Group and the new Parent Company. However, many external factors would impinge more directly on the NDA decision making process and so it is also a KSI applicable to it.

5. as trust in new BNFL is fundamental, BNFL must develop and maintain support from a wide range of stakeholders including: - NDA - Regulators - Communities - Unions - Employees - Suppliers - NGOs - UK Government - Other Governments	Stakeholder engagement and open and transparent dealings to build trust will be important to all the players in the new NDA clean-up market. Most stakeholder concern will continue to focus on site operations and the strategic approach to site liabilities. Stakeholder engagement will therefore be vital at the site licence holding Company level and at the NDA. This KSI therefore maps across to them. British Nuclear Group, as a key player in the market, will also need to address this KSI as it seeks to build a public reputation for trust in its commercial activities.

Utilities Group KSI's

The Utilities Group KSI's mainly transfer to the Westinghouse Business. Some, however, would also apply to Spent Fuel Services. Those related to continued operations at Sellafield and Springfields, will transfer to the NDA; BNFL plc as the site licence holder for Sellafield; and the new Company formed at Springfields as the site licence holding Company.

KSI	Comment
1 - Company profile and image: relates to: • public perceptions of the industry and nuclear risks, • difficulty of overcoming green stakeholder opposition in key business areas • difficulty of managing reputational issues • effectiveness of stakeholder engagement	Maps directly to Westinghouse. As there will be a new site licence holding Company for the Springfields site, initially managed by Westinghouse, it will also need to address this KSI, for its site operations.
2 - Sinks and disposal routes: relates to: • lack of long-term management facilities for different waste streams • lack of agreed policy/strategy on the long term management of different waste streams • pressure to drive down discharges impacts on ability of industry to operate. These issues are also linked to public perceptions of risks.	As 1. However, the strategic aspects of this KSI in the UK will be a matter for the NDA. This KSI also maps across to it.
3 - Safety and Security: the global industry is vulnerable to major events, either from accidents or terrorist action.	As 1. The security of civil nuclear activities is regulated by the Office for Civil Nuclear Security in the UK. Westinghouse and the Springfields site licence holding Company will need to comply with regulations that apply.

4 - Adaptability to changes in energy technologies and markets: relates to: innovation by BNFL and competitors within nuclear services (new reactors, fuels, spent fuel management routes and clean-up technologies/opportunities), and in the wider energy field (particularly energy storage and electricity transmission).	As 1. An important KSI for Westinghouse as it develops its business going forwards.
5 - Customer satisfaction: relates to fulfilling customer requirements by being flexible or innovating in services provided.	As 1. In addition, Spent Fuel Services, which will manage utility contracts on behalf of the site licence holding Companies that provide such services, will need to address customer satisfaction. This will also apply to NS&TS. This KSI therefore maps across to these two Businesses as well.
6 - People and skills: relates to attracting, maintaining and developing a workforce that is motivated, skilled and effective.	As 1. Applies to all businesses but NS&TS will have a significant workforce and this KSI therefore also maps to it
7 - Resources: relates to • security of access to key assets, e.g. licensed sites • adequate funding on balance sheet to finance development • demonstration of performance of key products, e.g. new reactor designs	As 1. This KSI, in generic form, applies to all the Businesses.

Appendix 10

Stakeholder Engagement: A Way Forward for “New BNFL” and Site Licensee Companies

Appendix 10. Stakeholder Engagement: A Way Forward for "New BNFL" and Site Licensee Companies

Purpose

This paper sets out a possible approach to building capacity and developing policy on stakeholder engagement[13] for the "new BNFL" entities and Site Licensee Companies.

Background

Currently BNFL engages its stakeholders in a variety of ways, enabling information to be shared, opinions to be gathered and discussion around difficult issues to occur within the stakeholder community. Recent examples of BNFL engaging its stakeholders include:

- questionnaire surveys on their CSR report
- supporting Local Liaison Committees
- external stakeholder workshops on decision making systems
- sponsoring the BNFL National Stakeholder Dialogue

The current structure of the nuclear industry changes dramatically after 1 April 2005 when the Nuclear Decommissioning Authority (NDA) exists. The NDA will take over ownership of all BNFLs sites, including all its assets and liabilities, and let contracts for the Management and Operation (M&O) of those sites. In response to this significant change in its operating context BNFL is now being restructured into:

1. a holding company
2. a number of businesses such as British Nuclear Group, NSTS, SFS, Westinghouse (and their subsidiaries)
3. Site Licensee Companies (such as Springfields SLC, BNFL plc, Magnox Electric)

The combination of 1 and 2 is sometimes referred to as "new BNFL". It is acknowledged that the Site Licensee Companies (3) will be separate entities.

In parallel with these structural changes in the industry there is an increasing demand and expectation of stakeholder engagement in strategic, policy and operational nuclear issues. Engagement processes will be initiated by the new NDA, and by the new M&O contractors, so companies looking to compete for M&O contracts will have to show competence in this field. By bringing clarity and meaningful, timely progress on this

[13] In this paper, the term 'stakeholder engagement' refers to the full range of approaches to involving stakeholders (info-giving, info-gathering, consulting, dialogue etc); rather than any specific approach or technique.

matter, the above companies (1-3) can develop an important aspect of their commercial offering and enhance their ability to engage effectively and efficiently in the NDAs engagement programme[14].

There are many reasons why any business would want to talk and listen to its stakeholders, the new entities (former BNFL) are no different. Typical reasons include, to:

- gain access to their expertise or knowledge
- understand their perceptions and potential reactions
- fulfil a moral or ethical obligation
- gain their support or co-operation (now or later)
- avoid or reduce conflict (current or potential)

Many of these reasons relate directly to a **reduction of risk to the business**, particularly where there is a need to manage uncertainties about the development and implementation of policies, programmes and plans and how external stakeholders may perceive them.

This paper aims to bring some clarity to how the new entities may want to engage their stakeholders in future, what skills and structures may be needed to do this effectively and finally, in outline, suggests what should happen in order to move forward.

Roles and Responsibilities post April 2005

We foresee three areas of engagement that the new entities will need to consider. They are mapped out in Table One, below.

Table One raises questions about competence and capacity (i.e. “What level of associated capacity does BNFL and its entities have in order to fulfil the roles effectively?”). Of course, BNFL has many members of staff who are skilled and experienced in many aspects and approaches to stakeholder engagement, however, it is less clear the degree to which this resource is now present in all the new BNFL entities. Further clarity is also needed about the specific drivers and motivations that will exist for the new BNFL entities to engage stakeholders.

[14] See BFWG input to DTI consultation on NDA Framework for Stakeholder Engagement and Transparency (appended), where issues such as the use of independent secretariat and convenors are discussed

Table One

	Nature of Engagement Process	Possible Activity	BNFL entity most likely to be involved	Content/Purpose	Possible Roles (in New BNFL+SLC)	Skills/Attributes Required
1	Mandatory. NDA initiated and sponsored processes	Participation in the NDA **National** Stakeholder Group (+NIGs)	Site Licensee Co British Nuclear Gp Holding Company NSTS, SFS	**National** strategy, policy, programmes, contract issues	S-holder Tech support	Firm understanding of: • rationale for engagement • range of engagement approaches • principled negotiation • representative responsibilities Networking and influence Knowledge of internal Co. processes Presentation of technical material
2	Mandatory. NDA initiated, but SLC sponsored (as required in M&O contracts)	Participate in or convene the NDA **Local** Stakeholder Groups (+LIGs)	Site Licensee Co NSTS, SFS	**Local** strategy, policy, programmes, contract issues	Sponsor Project-leader, Convenor, Facilitator, S-holder Tech support	As above, plus: Project management Project co-ordination Process design Social research Dialogue management Facilitation skills Meeting management Conflict management Communication/public relations
3	Optional[15]. New BNFL sponsored and managed	Engagement to manage **business** risk	British Nuclear Gp SFS NSTS etc	Management of **business** risk	Sponsor Project-leader Convenor Facilitator	All the above

Acronyms: NDA = Nuclear Decommissioning Authority, NIG = National Issue Group, of the DTI/NDA framework for stakeholder engagement, LIG = Local Issue Group, SFS = Spent Fuel Services, NSTS = Nuclear Science and Technology Services

[15] Issues concerning corporate governance may well be mandatory

The Way Forward

There is currently significant uncertainty about specific future requirements for stakeholder engagement in NDA programmes and related activities. By April 2005 these uncertainties should have been reduced as detail around the NDA engagement programme and NDA requirements of M&O contractors for stakeholder engagement emerges.

The new BNFL entities and Site Licensee Companies will need to have a clear understanding of their motivations and interests in order to develop approaches to stakeholder engagement. Whilst each entity will have some specific needs, it seems likely that many needs will be generic. We suggest that the way forward should include the following:

a) Develop a common set of principles for stakeholder engagement across new BNFL and SLCs
b) Identify executive "champions" for stakeholder engagement in each entity
c) Clarify motivations, interests and needs for stakeholder engagement in each entity (including the business case, external drivers etc)
d) Develop a set of clear policy and performance statements so that staff, stakeholders and others can clearly understand what can and cannot, be expected
e) Develop strategies for delivery of engagement processes (including "toolkit" development across a range of approaches)
f) Develop internal processes and protocols to ensure consistency and efficiency
g) Audit/review current resources (especially skills and experience) in each entity
h) Identify management development, training and support needs and how they can be best met
i) Create internal support and continual learning structures/mechanisms (evaluation, personal mentoring, learning networks etc)

The process of managing the above activities also needs attention because, ultimately, future engagement projects for the BNFL entities will only be consistently successful if this activity has its roots embedded in the predominant corporate culture. Such embedding is unlikely to occur if the initiative is developed by a select number of managers without bringing the remainder of the organisation with them.

So we would suggest that, at the earliest opportunity, an internal process be developed to engage staff from the new entities in developing a whole organisation approach to stakeholder engagement, with the following aims:

1. Embed the culture and practice of stakeholder engagement
2. Create and develop the capacity, knowledge and skills to deliver
3. Build structures for continual learning and improvement

Such a process would enable clearer understanding of current capacity building needs and challenges to the "embedding" process. By engaging staff in the strategy development process you are demonstrating commitment and more likely to accrue associated benefits (such as generating ownership and understanding of outcomes).

Appendix 11

Generic Test Framework for Cleanup Projects

Appendix 11. Generic Test Framework for Cleanup Projects

The Generic Test Framework has been developed with a view to:

1. Obtaining information for stakeholders about LCBL and NTWP
2. Offering an opportunity for the Site Licensee Company to explain how they arrived at their current plans, and allowing stakeholders to question these.
3. Using this process to identify issues on which stakeholders may wish to engage
4. Providing a mechanism for addressing these issues, including how stakeholders will be engaged

The Test Framework is oriented around specific projects, and will not necessarily give clarity on issues which cross all projects, for example security, skills, discharges, emergency planning etc. Such 'cross-cutting issues' will need to be addressed by a separate mechanism, which is not covered here. Where these cross-cutting issues have been addressed, the project plans will need to be put into the context which these provide.

The Framework has been developed as an indicative guide to assist drafters and stakeholders, but should not be considered prescriptive. It will need to be developed to reflect the requirements of specific projects: clarity being more important than adhering to the suggested structure. The framework will not be fully comprehensive, but should be sufficiently detailed to provide a prompt for questions from interested stakeholders on particular topics or concerns.

The framework is not intended to answer all the questions that might be raised. Further elaboration of the framework may be required as stakeholders are engaged.

Stakeholders should be aware that some projects have already commenced, and as a consequence many options have been foreclosed. Where this is the case, drafters should identify in the document how and why options have been foreclosed, and should clarify the level of stakeholder participation which can be expected.

Test Framework: Project A

1. Objective of the project

What is the objective or outcome of the project, without limiting this to specific methodologies: i.e. 'what' not 'how'.

The outcome of the project needs to be consistent with Government policy, regulation etc..

2. Outline the situation

A factual description of the radioactive materials relevant to this project, their properties, method of storage, general condition, and any specific issues which cause concern to NDA, site management, regulators or stakeholders. This description should include a summary of the current project requirement.

What are the implications for stakeholders of this situation.

Information provided about inventory, location and waste characteristics must be consistent with guidance on security.

3. Summary of Key Issues

Major elements relevant to decision making

4. Why is the level of priority of this project and why?

This is a narrative which builds on the 'Outline of the Situation' and the 'Key Issues' to describe why it is important to undertake the project now. This narrative needs to identify whether the project is urgent, why, and what would be the consequences of delay. This might include priorities which reflect progress on this project being an enabler for bringing forward other projects.

The narrative should include a comparison with current prioritisation criteria for cleanup, both national and on the site.

5. What are the current proposals? e.g. contained in NTWP/LCBL

This should provide a descriptive statement of the relevant sections of the Near Term Work Plan (NTWP) or Life Cycle BaseLine (LCBL). This should include start and finish dates, and how the project requirements are being addressed.

Robustness, flexibility, changeability

6. How are you going to do it? What has been decided? What's still to be decided?

What method(s) have been decided upon and how did you make those decisions?

- What are the key assumptions? *And how sensitive is the decision to the assumptions?*
- How are these justified and what contingencies exist? *What level of assurance do these contingencies provide?*

If decisions have not been made, how and when will you decide?

- What options are currently being considered?
- Are you satisfied that any delay is justified by the opportunity to make a better decision, reduce risk or reduce uncertainty, and recover the opportunity cost of not deciding sooner?

What would be the implications of reversing decisions already made?

What are the opportunities for stakeholder engagement? Clarify the level of stakeholder participation which can be expected.

7. What Options have been rejected and why?

This should be a list of options together with explanations. This section will only apply to projects on which option decisions have already been made. The role, if any, of cost in option selection should be made clear.

8. Work undertaken to support the Current Plan

What work is being done to support a decision? This should cover development work, assessments, design activities, regulatory submissions, equipment fabrication, training, recruitment etc..

9. Identification of uncertainties associated with the Current Plan

This should provide a list of the outstanding uncertainties, and to what degree they are likely to affect future decisions.

10. How will these uncertainties be managed?

What work is being done to reduce the uncertainties identified in (9), and whether the scale of the proposed work matches the scale of the uncertainties, and the decision timescale.

11. Overall implications of current plan

This section should deal with the implications of the current plans, covering areas such as:

- waste/discharges
- stored waste volume
- security
- socio-economic effects
- funding
- will waste be imported/exported to/from my local site?
- transport implications
- visual impact of the site
- availability of skills to do the job
- implications for the supply chain
- inter-dependence with other facilities, projects and/or sites
- worker dose
- other

Annex 1. Glossary of Terms

This needs to be developed as a generic document and appended to all project and 'cross-cutting' documents.

Appendix 12

Test Framework: Retrieval of Legacy Waste from a Wet Silo

Appendix 12. Test Framework: Retrieval of Legacy Waste from a Wet Silo

1. Objective of the Project

The objective of the project is to empty the silos and convert the contents to a waste form suitable for interim safe storage, while meeting environmental and safety regulatory standards, leaving the building intact.

2. Outline of the situation

Magnox fuel cladding, together with some uranium fuel debris and other miscellaneous solid wastes, is stored under water in 22 concrete-walled compartments and contains a large inventory of radioactivity. Some of the compartments are interconnected, allowing water to move between them. New arisings of Magnox fuel cladding have been fed directly into the Magnox Encapsulation Plant since 1990, though the silo continued to receive some miscellaneous solid waste until 2000.

The compartments were built in stages over 40 years, and vary in design and effectiveness of containment. Whilst the later compartments are double-walled so that the space between the walls can be monitored for any signs of leakage, the earlier compartments are single-walled and verification of their integrity is much more difficult. Some of the early compartments are known to have leaked water containing dissolved activity to the surrounding ground, and the resulting contamination is closely monitored.

The Magnox cladding is chemically reactive and corrodes in water forming magnesium hydroxide sludge, and giving off hydrogen gas. The silo compartments therefore consist of a mixture of magnesium hydroxide sludge, uncorroded Magnox cladding, fragments of irradiated uranium and (in the older compartments) an uncertain inventory of other miscellaneous contaminated items. The condition of the waste is very variable, largely dependant on how long it has been stored. The design of the facility and the semi-solid nature of the waste has made it impossible to fully characterise the silo contents. In total just under a hundred separate samples have been obtained and have given some insight into the condition of the silo contents. The variability of the waste has been confirmed by the subsequent characterisation of the samples.

The intermediate level waste (ILW) contained in the 22 compartments represents some 25% by volume, or about 50% by activity, of the total site raw ILW inventory. On the Hazard Indicator scale, the inventory ranks second in importance for the site, below only that for the highly active waste storage tanks. The NII has therefore required that the Company should remove 80% of the solids inventory from the compartments and condition it into a form suitable for long term storage, by 2020.

Failure to successfully manage this inventory during either continued storage in its current state or during retrieval would represent a significant hazard.

Although no further fuel cladding waste has been added since the mid 1990s, the waste is not inert due to the continuing corrosion reaction of the Magnox cladding. The hydrogen released must be prevented from reaching potentially explosive concentrations in the airspace above the compartments. This is achieved by careful control of ventilation with an inerting system (filling the space above the waste with nitrogen gas to remove air) as

back-up; these systems receive ongoing and thorough maintenance and monitoring. The compartments make a continuing contribution to both liquid and aerial emissions from the site, albeit as a relatively small proportion of total site emissions.

The structural integrity of the earlier compartments has been extensively assessed, and is considered to be acceptable in the short to medium term, but long term confidence cannot be guaranteed. The possibility of further leakages to ground cannot be excluded. If either a hydrogen explosion or a major structural failure were to occur, the resulting escape of radioactivity would almost certainly have off-site consequences, leading to the invoking of the Site Emergency Arrangements.

Housekeeping of the more modern compartments is better than that practised in the early 1960's but generally the working environment is poor with very limited working time available in some key areas, due to the relatively high levels of on-plant radiation and contamination. Ongoing monitoring and control of radiation dose to workers on the plant is required.

In the late 1990's, waste from the 4 latest compartments was retrieved by mechanical grab and the waste was subsequently encapsulated in cement and stored in a modern purpose built ILW drum store. The encapsulation plant available at that time could only handle relatively "fresh", uncorroded cladding since otherwise the presence of sludge would have made the process of removing water from the retrieved cladding very difficult/impossible. Retrieval of cladding from these later compartments was seen, in part, as a proving exercise for dealing with the older, more corroded material from the earlier compartments.

3. Summary of Key Issues

- Large inventory – represents about 25% by volume and 50% by activity of the Sellafield raw ILW inventory; on the Hazard Indicator scale it ranks second only to the highly active liquid waste storage tanks.
- The waste is chemically reactive and requires active management, particularly to prevent the accumulation of hydrogen in the compartments.
- The older compartments have leaked to ground in the past, and the possibility of further episodes of leakage cannot be excluded.
- The structural integrity of the building cannot be guaranteed in the long term.
- If either a hydrogen explosion or a major structural failure were to occur, the resulting escape of radioactivity would almost certainly have on site and off-site consequences, leading to the invoking of the Site Emergency Arrangements.
- The compartments make an ongoing contribution to discharges of liquid and aerial effluent from the site, and also to radiation exposures of workers.
- NII require that 80% by volume be removed by 2020.
- A large proportion of the waste in compartments 19-22 has been successfully removed and conditioned.

4. What is the level of priority for this project and why?

The Hazard Indicator value for this facility is greater than any other ILW facility on the site. Overall, this is the second most important facility at Sellafield for hazard reduction, the waste is chemically reactive, and the hydrogen generated by ongoing corrosion of the waste must be managed to avoid the risk of an explosion.

The structural integrity of the building is difficult to predict with confidence, bearing in mind that early compartments are over 40 years old, and the task of maintaining the building and the installed equipment needed for retrieval operations to the standards required will become increasingly difficult and expensive. The waste is a mixture of solids and sludge and if containment were lost, is relatively mobile, and further leakage to ground cannot be ruled out.

5. What are the current proposals? e.g. contained in NTWP/LCBL

BNFL is currently proposing to advance the timescale for retrieval which is contained in the current Life Cycle Baseline (LCBL) plan. The accelerated plan involves retrieving the waste by mechanical means, using 3 machines which are progressively moved from compartment top to compartment top. The retrieved waste will be packaged within stainless steel drum or boxes depending on the characteristics of the waste and these will be stored on-site in purpose designed modern stores until a long term off-site route (disposal) is available. Retrieval of the waste is planned to start in 2010 and conclude 10 years later leaving the compartments and building intact.

As retrieval proceeds, it is planned to process the contaminated water from the silo compartments to reduce the levels of activity sufficiently to permit the discharge of the treated water as liquid effluent. Radioactivity removed from the water will be retained on a solid matrix (typically, an ion-exchange resin) and managed as part of the substantial site inventory of similar materials from effluent treatment processes.

In summary, the programme envisages:

- Replacement or refurbishment of equipment and preparation for retrieval complete 2008/09.
- Installation of three retrieval machines mid 2008 – mid 2009.
- Retrieval begins 2010.
- Waste retrieval and subsequent packaging 2010-2020, leaving a small quantity of residual solid waste, and the building in a safe state. Any final treatment of this residual contents has not been decided.
- Packaged waste storage 2010 until agreed long term waste strategy is available.

6. How are you going to do it? What has been decided? What's still to be decided?

Consideration of options, many sub-options, and proof of concept has been ongoing for over two decades. The decision to remove waste by mechanical grab has been in place since the planning of first phase of retrievals in the late 1980's. It is intended to:

- Retrieve the waste mechanically without the need to inert the silo compartments – a technique proved on compartments 19-22
- Use existing effluent treatment plants to process contaminated water
- Use existing waste conditioning and packaging plants, suitably modified, for conditioning and encapsulation of the retrieved waste.

Immobilisation in cement is the chosen encapsulation method, and trials to confirm this route are in progress. The final choice is still the subject of contingency planning, with the decision on the waste form in 2005.

These plans make the maximum use of existing facilities and proven technologies, which gives a minimum time programme with the earliest retrieval to meet the NII specification. Changes to these decisions could compromise both the start date and duration of retrieval.

The level to which stakeholder engagement can influence this project is constrained by the NII specification, the urgency of the remediation task, and the availability of proven technologies and facilities that can be deployed on this timescale. The final treatment and end state of the residual waste and the building will be part of the dialogue on the end state of the site.

7. What Options have been rejected and why?

- Mechanical retrieval followed by chemical dissolution and treatment
- Dissolution of the waste in-situ and hydraulic extraction of the resulting liquor.
- Hydraulic retrieval of the waste using a jet pump.
- In-situ encapsulation and entombment – rejected on the grounds of technical feasibility, foreclosing options and current and present policy considerations.

These are unproven and undeveloped technologies which would require lengthy development programmes with no guarantee of success. Dissolution was rejected because of uncertainties surrounding the chemistry, in particular heats of reaction, and the difficulty of controlling the dissolution reaction. There is also a greater probability that leakage to ground would be exacerbated. There is the fundamental difficulty of successfully treating substantial volumes of very radioactive liquids, which would not be compatible with the existing process for vitrification of highly active liquid waste.

Hydraulic retrieval using a jet pump was rejected because the waste could not readily be mobilised (particularly the larger miscellaneous items) and also because of the very large quantities of water that would need to be used. Such water would become contaminated and its subsequent treatment would have proved too difficult.

Two principal options were considered for the treatment of contaminated water from the silo compartments:

- Treatment (by ion exchange processes) using existing site effluent facilities, with discharge of treated water as effluent.
- Solidification and storage using existing vitrification facilities.

The option of vitrification was rejected as the chemical composition of the water is incompatible with the existing vitrification process. The options were rejected on the grounds of practicality, technical certainty and timescale, rather than cost considerations

8. Work undertaken to support the current plan

The project is at an advanced stage. Detailed design and construction of the new retrieval machines, is complete at a cost in excess of £50M and they are currently under test at the

manufacturers. Substantial work has been undertaken to prepare the building for the deployment and operation of the machines, at a cost of some tens of millions.

The waste conditioning and encapsulation facilities, which will be shared by other waste streams, have been built at a cost of over £500M. Some of the equipment within these facilities may be subject to modification depending on the waste form selected.

9. Identification of uncertainties associated with the current plan

There are a number of significant uncertainties with the current plan, which could impair the ability to execute it successfully.

Waste characteristics: the actual characteristics of the waste (physical, chemical and radioactive) will inevitably differ from those deduced from the small samples extracted.

Control of hydrogen explosion risk: the plan is based on retrieval in air, but the operational arrangements to control the evolution of hydrogen, and its possible effects on retrieval rate have prompted the retention of inerting as a contingency. However, inerting would introduce greater complexity and require additional process controls which in turn would significantly reduce the rate at which retrievals could be accomplished.

Treatment of contaminated water *and discharges*: the method of treating the contaminated water from the silo compartments has not yet been finally established. The existing effluent treatment facilities will be required to process the liquor arising from the silos, at the same time as treating streams arising from other remediation operations on site, while staying within current and projected discharge authorisations. Any limit on the liquid effluent which could be accepted from the silos would impact on the rate of retrieval of the waste and thereby lengthen the programme. If new effluent treatment facilities were required, this would significantly impact the programme.

Further leakage to ground: There is a risk of further leakages to ground during the retrievals, though this a feature all retrieval options, and of the current storage regime.

Worker Dose: conditions in the building place constraints on the working times in certain areas.

10. How will uncertainties be managed?

Waste characteristics: flexibility to accommodate waste characteristics broader than the range found to date by sampling, and indicated by the plant records, has been designed into the retrieval, conditioning and packaging processes and no further sampling is planned. This is recognised in the choice of technology and product specification which is tolerant to a range of waste compositions. If, despite this flexibility, problems are encountered during operation on the waste in one or more compartments then the relevant retrieval machine could be moved to another compartment to enable progress to be maintained whilst solutions are considered.

Control of hydrogen explosion risk: the designed method of hydrogen control is by the use of ventilation. As contingencies, two different methods of inerting have been evaluated and reference designs are available if the case for ventilated retrieval in air cannot be achieved.

Treatment of contaminated water and discharges: design studies are currently in progress looking at the optimum way of treating the radioactive water, using existing site effluent treatment facilities. A series of trials is programmed for 2005. If problems are encountered in achieving the degree of treatment adequate to permit discharge within existing (or prevailing) discharge authorisation limits, then the primary contingencies available are:

- Reduce the rate of retrieval to limit the rate of release of radioactivity in effluent;
- Consider the feasibility of creating new, purpose designed, effluent treatment facilities;
- Justify variation in consent conditions to permit hazard reduction to proceed more quickly.

Further leakage to ground: An improved computer model and a groundwater monitoring network are nearing completion. This will ensure better monitoring allowing prediction of any migration and inform contingency planning.

Worker Dose: Further expenditure on worker dose management may be required and this could affect the timescales for preparation for retrieval.

11. Overall implications of current plan

Discharges: the contribution to site liquid effluent discharges from the compartments during the period of retrieval and conditioning will be greater than that occurring during the current storage phase. The precise degree can only be confirmed when currently ongoing design and development work is complete.

Solid wastes: the volume of raw waste currently held in the compartments is about 9,000m^3 and conditioning and packaging will increase this. The store that would accept this waste, and waste from other legacy retrieval projects, has already been constructed but is not yet operational. An integrated strategy for ILW storage is currently being developed.

Radiation exposure of workers: the anticipated collective dose to workers during retrieval operations is likely to be greater than that over the same period if waste were merely stored. Delay to retrieval operations would cause the cumulative lifetime worker doses to increase.

Employment and skills: detailed implementation plans are being established but these will be influenced by the detailed design which is still to be completed. Retrieval work of this nature will need a highly skilled and competent workforce, including shift operations. Appropriate training and redeployment from other plants may be able to service the need for operators noting that operations are scheduled to begin in 2010. An assessment of the overall skills and resource implications of site remediation to the current plans will be prepared.

Interdependence on other site facilities: the current plan requires that site effluent treatment facilities remain available and continue to operate successfully until at least 2020. In addition, the conditioning and packaging plants and the associated waste storage

will be required. Standard infrastructure, such as utilities and transport, will also be needed but there are no other major interconnected facilities.

Transport issues: the current plan does not involve the transport of any radioactive waste outside the Sellafield site, or the import of any radioactive waste onto it. If and when a national intermediate level radioactive waste repository is established, the conditioned and stored intermediate level waste resulting from this plan would be transferred to that repository. Bringing the mechanical retrieval equipment onto the site will involve a significant conventional operation for the transport of heavy and bulky plant items.

Costs and funding: the total estimated cost of this project to 2020 is £800 million, or about 8% of the cost of discharge of liabilities at Sellafield over that period. Within the near future, funding for this project will be provided by the Treasury via NDA.

Security: achieving reduction in hazard potential in the silos will make a significant improvement in the security of waste storage on site.

Glossary of Terms

Acronym	**Meaning**
BNFL	British Nuclear Fuels plc
ILW	Intermediate Level Waste
LCBL	Life Cycle Baseline Plan
NII	Nuclear Installations Inspectorate
NTWP	Near Term Work Plan

Appendix 13

Test Framework - Disposition of Separated Plutonium

Appendix 13. Test Framework - Disposition of Separated Plutonium

1. Objective of the project

The long term objective of the project is to convert separated plutonium into a passively safe form, suitable for long term storage and/or disposal. The approach adopted should also provide a very high level of assurance that plutonium cannot be extracted illicitly for use outside the current international non-proliferation safeguards.

In the short term (5 to 10 years) the project comprises research and evaluation work to enable informed choices to be made as to the methods which are to be used to achieve this long term objective.

The aim is to be in a position to commence conversion within 25 years and complete conversion within 50 years.[16]

2. Outline the situation

Current and future projected stocks

Plutonium produced as a result of reprocessing spent nuclear fuel at Sellafield is currently stored as plutonium dioxide powder. The current stocks of this material[17] at Sellafield amount to about 93 tonnes, of which about 71 tonnes are owned by BNFL and other UK utilities. The remainder is owned by overseas reactor utilities. Based on BNFL's current contractual commitments for reprocessing these stocks are projected to increase to about 140 tonnes, of which roughly 100 tonnes would be UK owned.[18].

There is a commitment to return the plutonium owned by overseas utilities to the countries of origin; subject to agreement of contractual arrangements, it is expected that this will be in the form of mixed oxide fuel (MOX) for use in reactors operated by the owners of the plutonium. This material does not form part of the UK liabilities and is not included within the scope of the Life Cycle Baseline Plan.

Until the early 1990s, it had been intended to utilise the UK owned stored plutonium as fuel for fast reactors. However, following a Government decision in 1987, the UK's development programme for fast reactors, based around the Prototype Fast Reactor at Dounreay, was terminated in 1993/4.

For the plutonium owned by BNFL (and the UK utility, BE) there are now no current plans for commercial utilisation as fuel in the current types of reactor operating in the UK (i.e. Magnox, Advanced Gas Cooled or Pressurised Water reactors). Plutonium is accounted for as a zero value asset and the material is held in store pending the evaluation of options for its disposition. At present there is no national policy on the disposition route for plutonium, although the Committee on Radioactive Waste Management is considering issues associated with its management as a waste.

[16] Dependent on the findings of the research and evaluation work, and decisions regarding choice of options, the period from 10 to 25 years will involve detailed design, development, construction and licensing of new facilities and/or early disposition using existing facilities.
[17] As of 31 December 2003.
[18] More detail is available in the report of the Spent Fuel management options Working Group (http://www.the-environment-council.org.uk/docs/SFMO_FullReport_July02.pdf)

About 5% of the stored plutonium is unsuitable for immediate conversion to reactor fuel (because of chemical contamination) and re-working it to make it suitable for this purpose is likely to be uneconomic.

Potential for weapons use

Plutonium is a radioactive element that occurs only in tiny quantities in nature. Virtually all of the plutonium that currently exists has been produced by reactions that occur in conventional uranium-based fuels used in nuclear reactors.

These reactions produce a number of different 'isotopes' of plutonium. The principal isotopes in spent fuel from nuclear reactors are plutonium-238, plutonium-239, plutonium-240, plutonium-241 and plutonium-242. Trace quantities of plutonium-236 are also present, and these may be of some significance in radiation dose rate calculations. Like uranium-235, plutonium is fissile (i.e. it can support an energy-producing 'chain reaction') and can therefore be used as either a nuclear fuel or as a material for nuclear weapons manufacture. All plutonium isotopes are fissile in the fast neutron fluxes of fast reactors. However, only plutonium-239 and plutonium-241 are fissile in the thermal neutron fluxes of conventional water-cooled or gas-cooled nuclear power reactors.

Plutonium dedicated for weapons manufacture has been produced in the UK, as it has elsewhere by states that maintain a nuclear weapons capability[19]. Plutonium for weapons manufacture is normally produced in such a way as to minimise the content of the even-numbered isotopes that undergo spontaneous fission. Irradiating uranium fuel in a thermal reactor converts around 1% of the uranium into plutonium; if the fuel is left in the reactor for only a relatively short period of time, about 93% or more of the plutonium produced will be plutonium-239 and about 7% or less will be plutonium-240. Plutonium produced in this way is referred to as 'weapons grade' [20].

When the uranium fuel is left in the reactor for a longer time to maximise the energy produced, or 'burn-up' (as would usually be the case in commercial electricity generation), the plutonium produced as by-product contains a much higher proportion of the even numbered isotopes. Plutonium produced in Magnox reactor fuels typically contains up to about 70% of plutonium-239 by weight, whereas plutonium produced in light water reactor fuels (which achieve higher burn-up of uranium) would typically contain about 50% of plutonium-239 by weight. Plutonium produced in this way is referred to as 'reactor grade' plutonium. Reactor grade plutonium can be utilised as a fuel for energy generation, but it would not be the material that an advanced nuclear weapons State would normally choose to use for weapons purposes.

Notwithstanding the lower attraction of reactor grade plutonium to weapons designers, it could be used to construct an explosive device, and this has been done for test purposes by the UK and US; indeed, some weapons designers consider it easier to make a low yield explosive device from reactor grade material[21]. The weapons-usability of reactor grade plutonium is accepted by the international safeguards community and by the UK Government[22]. Accordingly, all UK reactor grade plutonium is subjected to security and safeguards to deter state diversion or acquisition by sub-national groups.

[19] Some of these states additionally, or alternatively, use highly enriched uranium.
[20] Royal Society, 'Management of Separated Plutonium', February 1998.

[21] Arnold L, 'A Very Special Relationship: British Atomic Weapon Tests', Ch 4, HMSO; M Bunn, 'The US Program for Disposition of Excess Weapons Plutonium', paper to IAEA Conference, June 1997.

[22] Gilbert, Lord, Minister of State, Ministry of Defence, House of Lords, Hansard, 24 July 1997, Col WA 184.

Principal hazards associated with storage

Plutonium is a potentially hazardous material and the storage arrangements need to take account of this.

Criticality: Plutonium, in common with other fissionable materials, can undergo an uncontrolled nuclear chain reaction if too much of the material is brought close together under the wrong circumstances. Such unintended chain reactions are usually short-lived and the energy releases small; nonetheless, very high levels of radiation are produced which can be fatal to anyone in the near vicinity of the reaction. The plutonium is stored in stainless steel cans, each containing less than the 'critical mass' and the design of the store physically prevents the cans being placed too close together.

Radiotoxicity: Most of the plutonium isotopes emit alpha radiation and are very hazardous if inhaled or ingested. Plants which process plutonium need to provide a high degree of 'containment' to prevent contamination of the working areas with plutonium containing dusts; in the stores, the plutonium oxide powder is sealed inside a series of cans. The current Magnox stores utilise an inner aluminium screw-top bottle surrounded by a polythene wrapper, all contained within a seamless stainless steel can with a welded lid. The Thorp stores utilise a triple stainless steel can system. Instrumentation within the stores monitors continuously for any release of radioactivity. The earlier Magnox stores (prior to the early 1980s) have used a variety of plutonium can and bottle designs which included PVC plastic liners; these designs were not suitable for long term storage and re-canning has been necessary (see below).

Heat generation: Radioactive decay of the stored plutonium generates a significant amount of heat. Heat is removed from the cans by convection, but forced ventilation is required to provide sufficient airflow through the stores and allow acceptable can temperatures to be maintained. The ventilation systems are designed with 'redundancy' - there is more fan capacity than is needed, separate inlet and extract fans are provided, and standby power supplies are available.

Deterioration of packaging: Plutonium dioxide powder readily absorbs moisture and even some gases from the atmosphere; these can be released during storage causing pressure to build up in the can. Over a long period of time, the intense alpha radiation from the stored plutonium also results in the build up of helium gas within the can. In addition, the PVC present in pre-1980 Magnox can designs suffers from radiation induced deterioration. In the post-1980s stores, attention to product quality together with the package design results in a nominal 50 year lifetime for the packages. The material in the pre-1980 cans has required repackaging. A repackaging plant is provided, both for the older material and as a contingency for current package designs. A randomly selected sample of packages is examined each year using both destructive and non-destructive techniques. This programme is intended to ensure that any package deterioration is detected before it becomes problematic.

Ingrowth of americium-241: The alpha radiation emitted by stored plutonium is entirely absorbed by the packaging material. Thus, whilst the plutonium is potentially very hazardous if it escapes from the can and becomes ingested or inhaled, the canned plutonium can be handled safely without the use of heavy radiation shielding. However, radioactive decay of the isotope plutonium-241 produces the isotope americium-241. In addition to emitting alpha radiation, americium-241 also emits more penetrating low energy gamma radiation. Over a period of time, levels of gamma radiation from the stored cans increase. Eventually, the handling of the stored plutonium, whether for repackaging, conversion into mixed oxide fuel, or conversion into some other stable form for long term storage, would require either substantial radiation shielding or, ultimately, inclusion of an additional process step to chemically separate the americium-241 from the plutonium. Such steps would be required after about 55-60 years for storage of plutonium derived from Magnox fuel, or about 10-15 years for storage of plutonium derived from advanced gas cooled reactor fuels.

These current storage arrangements are judged to be adequately safe and secure in the short to medium term (nominally, for the next 25 years). However, they do not entail a sufficient degree of passivity to be regarded as acceptable for long term storage, nor could the oxide powder form be considered as potentially acceptable for disposal. Further, it is not realistic to envisage indefinite maintenance of the current security and safeguards arrangements to prevent illicit use of the material for weapons purposes.

3. Summary of Key Issues

- Current and projected future stocks of plutonium at Sellafield are substantial.
- The current form of storage, as plutonium dioxide powder, does not provide the degree of passivity appropriate for long term storage, nor is it potentially acceptable for disposal.
- Plutonium in the form of dioxide powder is quite an attractive material for any organisation intent on the illicit construction of nuclear explosive devices.
- Current storage arrangements are considered adequately safe and secure for the medium term (for around 25 years) but beyond that time material forms which have a higher degree of passive safety, and greater intrinsic security, are needed.
- Decisions have yet to be made as to the best means for achieving this
- There is currently no national policy for the disposition of plutonium within which such decisions could be framed.

4. Why is this project regarded as a priority?

The actual implementation of a plutonium disposition programme is seen as a medium term (i.e. around 25 years), rather than a short term, priority. However, a programme of research and evaluation is necessary to allow the options for disposition to be properly characterised and assessed, to allow informed choices to be made in the selection of an option or options, and to allow the chosen option or options to be specified in detail. This research and evaluation programme is considered to be an important part of the work programme in the shorter term.

Timely execution of the research and evaluation is important for two reasons:

- Some options will be foreclosed as existing facilities such as reactors and fuel production plants (which could also be adapted for immobilisation) reach the end of their design lifetimes.
- The possible lead times associated with the design, licensing, construction and commissioning of new process facilities, should these be required, dictate that options need to be selected and defined in detail within the next decade if disposition is to commence within 25 years.

5. What is the current plan (NTWP/LCBL)?

The most promising options for a disposition programme that would achieve the objectives in section 1 are based around:

- Immobilisation of the plutonium in a suitable matrix, most probably a ceramic, packaged in a form suitable for long term storage and/or disposal
- Conversion of the plutonium into a reactor fuel, followed by use of the fuel in a reactor to generate energy and long term storage and/or disposal of the resulting irradiated fuel.

Within each of these broad 'immobilisation' or 'reactor use' options there are a number of sub-options relating to immobilisation matrices and processes, reactor and fuel types, etc[23].

The current plan involves research and evaluation activities relating to these options:

- Characterisation of plutonium stocks in terms of isotopic composition and levels of chemical contaminants, to confirm the proportion which would be uneconomic to process into MOX or other forms of reactor fuel
- Evaluation of the properties of candidate ceramic immobilisation matrices
- Determination of process designs for the incorporation of plutonium into candidate ceramic matrices.
- Evaluation of the optimum fuel types for reactor utilisation of plutonium, including 'inert matrix fuels' in which the only fissile element is plutonium, and which maximise the amount of plutonium actually 'burned'.
- Assessment of the likely acceptability of immobilised plutonium and/or irradiated plutonium containing reactor fuels for long term storage and/or disposal
- Safety, security and environmental assessments of both the immobilisation and reactor usage disposition routes
- Comparative assessments of the economics of immobilisation and reactor usage, including exploration of the contractual basis on which reactor usage may proceed
- An ongoing watching brief on international research into disposition options, including options (e.g. immobilisation by vitrification) rejected for further detailed study within this programme.

6. What Methods have already been decided?

No decisions have yet been made on the options to be chosen for a plutonium disposition programme beyond the conclusion, as explained above, that the most feasible options are based around immobilisation or use in reactors. The disposition programme finally developed may include the use of a range of options that are best suited to particular sub-categories of material within the existing stockpile.

The programme of research and evaluation indicated above is expected to take more than five years to generate sufficient results to allow informed choices between options to be made. Within that same time frame other relevant aspects of UK policy are likely to become clearer, for example the work of the Committee on Radioactive Waste Management on long term management and disposal options for radioactive waste, and the longer term likelihood of any 'new build' programme for nuclear reactors in the UK. It is important that UK work in these areas is 'joined up' and the research and evaluation activities covered by this plan will be conducted accordingly.

The current programme therefore assumes a decision on plutonium disposition options can be made between 2009 and 2014. The programme also provides for the development of a programme of stakeholder engagement during both the research and evaluation and

[23] A more detailed discussion of options is given in the report of the Plutonium Working Group (http://www.the-environment-council.org.uk/docs/PuWG_Report_Mar_03.pdf)

the decision making phases of the programme. The nature of the engagement programme is yet to be decided, and views of stakeholders on this are invited.

7. What Options have been rejected and why?

In deciding that the broad options available centre around immobilisation or use as reactor fuel, a number of options have been rejected so that evaluation work can focus on the most promising routes. Thus:

- The possibility of 'transmuting' plutonium in specially designed reactors or particle accelerators has been rejected because the technology will not be developed within the required timescale, if at all.
- Similarly, the use of plutonium fuel in fast reactors has been rejected as an option because it is most unlikely that fast reactors will ever be constructed in the UK, and certainly not within the required timescales.
- Immobilisation of plutonium in a vitrified wasteform has been rejected as an option for further detailed study, because most existing research work indicates that vitrified wasteforms have poorer performance than ceramic forms in respect of plutonium incorporation and leachability.
- Schemes in which immobilised plutonium is surrounded by a 'radiation barrier' - for example, by encasement in vitrified high level radioactive waste - have been rejected on the grounds that the barrier adds little to security which cannot be achieved by other means, and adds substantially to the complexity of the process.

8. Work undertaken to support the Current Plan

As noted above, the current plan consists essentially of a research and evaluation programme to allow informed choices about options to be made.

9. Identification of uncertainties associated with the Current Plan

At present, none of the options are regarded as being free from uncertainty. The major uncertainties at present are:

- Availability of funding to support the initial research and evaluation work.
- The requirements for acceptability of plutonium waste forms (whether immobilised products or irradiated plutonium based fuels) for long term management and/or disposal.
- The optimum matrix for the immobilisation of plutonium, and the design of the process or processes to produce it on the necessary scale.
- The commercial basis on which utilisation of plutonium fuels could be initiated in UK reactors, whether existing or 'new build'
- The likelihood of any programme of 'new build' reactors in the UK
- The successful commissioning and subsequent availability, of the Sellafield Mixed Oxide Fuel Plant for either manufacture of plutonium based fuels or processes involving ceramic immobilisation of plutonium.
- Until disposition options have been evaluated more thoroughly, it is not clear whether existing process facilities on the site (other than SMP) may be required for the disposition programme.

10. How will these uncertainties be managed?

The research and evaluation programme addresses these uncertainties, as do ongoing Government policy developments and the independent work of CoRWM.

The anticipated review of UK energy policy in 2008 may reduce uncertainty about future new build reactor programmes in the UK.

The current strategy keeps all of the most promising options open, so that there is contingency if one or more of the options proves to be impracticable.

The ultimate contingency is to continue to store plutonium in its current form until satisfactory disposition options can be implemented.

The possible use of existing process facilities at Sellafield for plutonium disposition will be explicitly considered in determining the programme and priorities for site decommissioning

11. Overall implications of current plan

- The existing storage arrangements for plutonium dioxide, together with existing security and safeguards arrangements will need to be maintained and upgraded as necessary for at least the next 15 years; the construction of one new store is planned. Existing storage arrangements make only a negligible contribution to site discharges.
- All of the disposition options are likely to lead to higher discharges to the environment (during the processing phase of disposition) than would continued storage; this will be evaluated during the research and evaluation programme.
- The volume of waste for long term storage (whether as immobilised plutonium or irradiated plutonium based fuels) has yet to be assessed; the wasteform itself will in either case be of greater volume than the stored plutonium oxide.
- The chosen disposition programme is likely to require greater investment, and higher levels of employment, than continuation of current storage arrangements. However once disposition is complete employment levels are likely to be lower than those currently associated with plutonium storage.
- The possible costs of a disposition programme have not yet been explicitly included in the estimate of the overall cost of discharging UK nuclear liabilities.
- Whichever disposition option is chosen, there are implications for interim waste storage pending decisions on final disposal. If the separated plutonium were immobilised, the immobilised product would continue to be stored at Sellafield for this period. Use as reactor fuel would imply re-export to a UK reactor site, with interim storage of the irradiated fuel either at the reactor site or at Sellafield.
- Implications for additional transport movements may arise in terms of transport of plutonium based fuels from Sellafield to reactor sites, or transport of plutonium wasteforms to an ultimate disposal site. In either case security arrangements for transport will require careful consideration; it is recognised that centralising processes on one site would minimise the security risks.
- Construction of new immobilisation process facilities and/or storage facilities for immobilised product may be required.

- Skills in the management and processing of plutonium need to be retained in the UK for at least the next 25 years; ensuring that there is not a hiatus in the research and evaluation programme will assist in this regard.
- The programme will require a range of site infrastructure to be in place to support a disposition programme in 25 to 50 years time; the precise requirements will depend on the option(s) chosen. Present security and safeguards arrangements will need to be maintained until disposition is complete, at which point a lower level of surveillance may be appropriate.
- The main potential for interaction with other programmes relates to the utilisation of the Sellafield Mixed Oxide Fuel plant for commercial mixed oxide fuel production on behalf of overseas customers. Pending evaluation of options, other process facilities on the site may be relevant and this will need to be kept under review.

Appendix 14

Test framework: Contaminated land management

Appendix 14. Test framework: Contaminated land management

1. Objective of the project

To place contaminated land on the Sellafield site under appropriate safety and environmental conditions pending decisions on the final state of the site. This “end state” decision would involve extensive stakeholder engagement and also requires clarification of national policy on the management of low-contaminated material and radioactively contaminated land.

2. Outline the situation

Sellafield, one of the most complex nuclear sites in the world has been operational since the 1940s and still has large quantities of historic wastes stored in an untreated condition. Much of this historic storage does not conform to modern standards, and there have been a few incidents involving considerable leakage of liquid waste, giving areas of contaminated land on the site. Additionally, there are three approved waste disposal areas on site, which need to be included in any long term site development. There is a programme of modern borehole monitoring as part of a groundwater management programme

The amount of material that has leaked into the ground is not accurately known, but has been estimated to represent less that 0.1% of the historic site inventory. The volume of land which is contaminated is also not accurately known, but is estimated as:

Waste category	Volume ($m^{3)}$
~VLLW(0.4-4Bq/gm)[24]	13,000,000
~VLLW (4-40Bq/gm)	4,900,000
LLW	470,000
ILW	1,600

The treatment and handling of radioactive wastes has been determined by the actual characteristics of the waste. However, for management purposes, rather than for any regulatory need, radioactive waste is divided into categories according to its heat generating capacity and activity content. Appendix 1 gives the definitions of waste, as given in “Managing Radioactive Waste Safely” (MRWS). The MRWS process is currently seeking to define policy for the long term management of Intermediate Level Waste (ILW).

Low Level Waste (LLW) is disposed of to the Drigg site south of Sellafield, and represents around half of its remaining capacity. Though Very Low Level Waste (VLLW) arising outside the nuclear industry can be disposed of by controlled burial, this route is not available for wastes from the nuclear licensed sites, for which Drigg is the only current disposal route. The volumes of VLLW in the table are about eight times the total capacity of Drigg.

In order to delicense a nuclear site, it is necessary to meet an HSE requirement that any remaining radioactive contamination represents ‘no danger’. This concept is not defined, though a consultation is being held on an HSE proposal. Delicensing has only been

[24] See Appendix 1

achieved to date by removing *all* radioactive contamination from the site.

The effect of leakages of radioactive materials will depend upon the geology of the site and the flows of groundwater. The geology and hydrogeology of the site is extremely complex. The vast majority of ground contamination has resulted from a leak from a compartment of an old waste storage silo, which has been largely contained by the local geology for the last 30 years. However, there has been evidence of the migration of small amounts of activity (tritium and, more recently, technetium) off the site from other leakage sources.

In the short term, further stakeholder input is needed into the site investigation programmes which are already under way to better define the inventory and location of contaminated land, to predict any movement of material and to undertake any appropriate management measures. These investigations will also include determining the nature and extent of non-radioactive contamination on the site.

In the longer term there is a need for extensive stakeholder input into the definition of both the site end point and the regulations which will apply at this time.

3. Summary of Key Issues

- Estimate of inventory of below ground radioactive contamination needs to be confirmed, and its future behaviour predicted with greater certainty by attaining a better understanding of the geology and hydrogeology of the site.
- Inventory of below ground non-radioactive inventory needs to be determined.
- There is evidence of contamination of the local groundwater, with migration of tritium and technetium off-site.
- Further leakage to ground from historic waste facilities cannot be ruled out.
- The policy for and regulation of site end points and long term management of associated wastes require development.
- Investigation of the application of remediation technologies to Sellafield contaminated land and their performance is currently in its early stages, and work is ongoing.

4. What is the level of priority of this project and why?

Some contaminants are known to have migrated off-site and there are legal and regulatory imperatives to improve the management of this issue. Estimates based on current measurements give a maximum risk to people off site of less that one in a million per year. However, the understanding of the site below ground is not adequate to be able to predict with confidence how contaminants will migrate in the short term. This uncertainty, plus the policy and regulatory position, leaves the robustness of the long term land clean up strategies in doubt.

In addition to completing the site investigation exercises, there is a need to develop a workable selection of technologies which could be deployed, if required, to reduce risk for the medium or long term, in the particular conditions at Sellafield.

5. What are the current proposals? e.g. contained in NTWP/LCBL

The reference LCBL Sellafield site post-closure strategy is based upon assumptions for both the site end-points and the long term management of the resulting wastes. This programme is currently under review for Life Cycle Baseline 2, but the present assumptions are:

- Development work will continue in the NTWP and for the next 60 years, with the rate of expenditure gradually increasing with time. This work will evaluate site clean-up strategies, develop and test appropriate remediation technologies and characterise the presence of activity in the ground. In addition, this development work may be extended to include early and localised remediation of the site. The main excavation and remediation of contaminated land is planned to commence around 2070.
- Land contaminated at ILW levels will be excavated, treated if practicable, and the portion remaining as ILW stored to await disposal in a national facility.
- Land contaminated at LLW levels will be excavated and disposed of in a near surface disposal facility constructed specifically for this purpose on the Sellafield site.
- Ground contaminated to VLLW levels will be left in place.
- There will be ongoing monitoring of groundwater, with groundwater management as necessary to enable the above to occur.
- This partial remediation of the site would be followed by indefinite institutional control as a licensed site unless and until there was policy and regulatory guidance which allowed a demonstration of ‘no danger’ prior to delicensing.

6. How are you going to do it?

The short term strategy (next ten years) will focus on reduction of the above ground hazards, while ensuring that the risks associated with the below ground inventory remain acceptable. To ensure that the risks are and remain acceptable a major site investigation programme (the Sellafield Contaminated Land Management Project) is currently being implemented. Trials of appropriate clean-up technology are under way to inform plans for actual implementation of the technology.

While providing increased knowledge of the extent of ground contamination, its future behaviour, and the potential techniques available for remediation, this work will not foreclose any options regarding the end point for the site or the long term management of the contaminated land.

The regulators and the Local council have and are being involved in the development of the Sellafield Contaminated Land Management Project. Local Stakeholders are being kept informed of the results provided by this project and an information booklet is being developed to provide information for interested parties.

The medium to long-term strategy (in the LCBL) is currently under review and strategy development work includes investigating how the management of the contaminated land and groundwater can be accelerated and the extent it can be managed in-situ.

Stakeholder involvement is therefore key in the development of this medium to long term strategy.

7. What Options have been rejected and why?

- 'Doing nothing', this is not credible or acceptable to regulators as ground contamination is required to be monitored and managed.
- A wide variety of alternative intervention options have been investigated and evaluated, including burial in situ, in-situ immobilisation, and full 'green field' restoration, but no final conclusion on any of these option can be reached until the site is better characterised (as mentioned above).

8. Work undertaken to support the Current Plan

A full programme of characterisation is being implemented for all areas of the Sellafield Site, and work on a large portion of the site is already complete. This includes full geological and hydro-geological characterisation, and the analysis of groundwater for a suite of possible contaminants including non-radioactive materials. The data is being stored in a database attached to a Geological Information System to allow visual representation of the data and a full Risk Assessment Model is being developed to assess the data.

In addition trials and demonstrators of technologies that could be applied under Sellafield field conditions are in progress. These include the use of:-

- Phytoremediation – certain plants such as sunflowers and willow are used to remove radionuclides in soil as through natural processes they can take up the radionculides through their roots into stems and leaves.
- Electrkinetics – Electric currents are run through the ground and chemical processes caused by the currents result in radionuclides being released into water in the soil where the electric currents either repel or concentrate the radionculides, allowing them to be pumped out of the ground or restricted into a particular area.
- Enhanced soil washing/leaching
- Excavate and dispose
- Capping

The work includes evaluating of remediation experience worldwide on both nuclear and non-nuclear sites.

9. Identification of uncertainties associated with the Current Plan

There are a number of uncertainties which could impact upon the planning and execution of contaminated land remediation, particularly in the longer term.

<u>Policy and regulatory uncertainties</u>: clarity about long term management of waste, disposal routes and the definition of acceptable site end points is a pre-requisite for progress. This includes the ability to dispose of waste in a timely manner, which is critical to any programme of remediation.

<u>Contaminated ground inventory and behaviour</u>: the possibility of a major new leakage to ground or the resumption of previous leakages would increase the amount, and potentially

the urgency, of remediation. There are also inherent uncertainties in modelling the long term behaviour of contaminants in the environment

Timescale of ground remediation: The timing of ground intervention will be dependent on the completion of above ground activities e.g. retrieval of waste and demolition of buildings.

Techniques for Remediation: if remediation technologies trialed on Sellafield Site prove unsuccessful options and timescales will be affected.

Worker Safety: contaminated land will have implications for workers both employed directly on characterisation and remediation, and also undertaking other tasks in contaminated areas.

10. How will these uncertainties be managed?

Policy and regulatory uncertainties: Government and regulatory processes are examining the issues, and both the NDA and stakeholder views should have significant influence to bring the requisite priority to policy and regulatory action.

Contaminated ground inventory and behaviour: a full programme of characterisation is being implemented for all areas of the Sellafield Site, and work on a large portion of the site is already complete.

Timescale of ground remediation: NDA and the site licensee will need to make explicit the benefits and detriments associated with changing timescales.

Techniques for Remediation: trials of possible clean-up technologies are in progress.

Worker Safety**:** a contaminated land 'Continued Operations Safety Case' (COSR) has been produced which manages the short term implications of the contaminated land on the workforce

11. Overall implications of current plan

Waste/discharges Discharges via groundwater will be minimised.

Stored waste volume The current assumption is that the main excavation and remediation of contaminated land is planned to commence around 2070. Should these timescales advance, there will be implications for ILW storage facilities.

Security There are no security implications

Socio-economic effects Major site restoration work would impact upon the local economy, including the potential use of the site for nuclear related or other uses.

Funding Expenditure is concentrated upon site investigation and technology development in the short-term. More clarity around the level of discounting that the NDA will employ would assist the definition of long term restoration costs.

Will waste be imported/exported to/from my local site? The current assumption is that contaminated land categorised as VLLW and LLW will remain on the Sellafield site and that any ILW will be handled in line with the long-term waste management options being developed by Defra. The Defra proposals could involve the movement of ILW from the Sellafield site.
Transport implications Should the Defra ILW strategy involve a regional or national dimension, then there could be transport implications. Decisions around the end state of the Sellafield site. For example, should LLW and VLLW be required to be disposed of away from the Sellafield site, this would involve very substantial transport movements.

Visual impact of the site Substantial potential impact, depending upon the extent of restoration undertaken.

Availability of skills to do the job There will be the need to employ some specialist contractors as well as workers both employed directly on characterisation and remediation, and also undertaking other tasks in contaminated areas.

Implications for the supply chain Specialist skills will be required in the investigative stages, with major civil contractors required to undertake site restoration in the longer term.

Inter-dependence with other facilities, projects and/or sites – Decisions regarding the end state of other facilities on Sellafield eg. will waste stores be left standing once their contents have been retrieved, will have a major impact upon the extent and ease of site restoration in the longer term. Accelerating below ground intervention could also disrupt progress on much higher hazard reduction projects.

Worker dose Investigative work in areas where contaminated land is being characterised will involve the management of radiation doses to the workforce. There will also be an impact once ILW contaminated soil is excavated and treated.

Glossary

Acronym	**Meaning**
COSR	Continued Operations Safety Case
Defra	Department of Environment, food and the regions
HSE	Health and Safety Executive
ILW	Intermediate Level Waste
LCBL	Life Cycle Baseline Plan
LLW	Low Level Waste
MRWS	Managing Radioactive Waste Safely White Paper
NDA	Nuclear Decommissioning Authority
NTWP	Near Term Work Plan
VLLW	Very Low Level waste

Appendix 1 to Appendix 14. UK Categorisation of Radioactive Waste – extract from 'Managing Radioactive Waste Safely', Defra, September 2001

2.5 The treatment and handling of radioactive wastes has been determined by the actual characteristics of the waste. However, for management purposes, rather than for any regulatory need, radioactive waste is divided into four categories according to its heat generating capacity and activity content.

Very low level wastes (VLLW)[25]

Wastes which can be disposed of with ordinary refuse, each 0.1 cubic metre (m^3) of material containing less than 400 kBq (Kilobecquerels) of beta/gamma activity or single items containing less than 40 kBq

Low level wastes (LLW)

Containing radioactive materials other than those suitable for disposal with ordinary refuse, but not exceeding 4 GBq/te (gigabecquerels) of alpha or 12 GBq/te of beta/gamma activity – that is, wastes which can be accepted for authorised disposal at Drigg, Dounreay or other landfill sites by controlled burial

Intermediate level wastes (ILW)

Wastes with radioactivity levels exceeding the upper boundaries for LLW, but which do not need heating to be taken into account in the design of storage or disposal facilities

High level wastes (HLW)

Wastes in which the temperature may rise significantly as a result of their radioactivity, so this factor has to be taken into account in designing storage or disposal facilities

VERY LOW LEVEL WASTE

2.6 Very low-level waste (VLLW) covers wastes with very low concentrations of radioactivity. It arises from a variety of sources, including hospitals and non-nuclear industry. Because VLLW contains little total radioactivity, it has been safely treated as it has arisen by various means, such as disposal with domestic refuse directly at landfill sites or indirectly after incineration.

LOW LEVEL WASTE

2.7 Solid low-level waste (LLW) includes metals, soil, building rubble and organic materials, which arise principally as lightly contaminated miscellaneous scrap. Metals are mostly in the form of redundant equipment. Organic materials are mainly in the form of paper towels, clothing and laboratory equipment which have been used in areas where radioactive materials are used – such as hospitals, research establishments and industry.

[25] Note that the VLLW category has not been a permitted for waste from nuclear licensed sites (*this is not a quote from the Defra paper)*

2.8 Since the 1950s around 1,000,000m 3 of LLW has been safely disposed of, mainly at the shallow burial site at Drigg, Cumbria and to a lesser extent at Dounreay, Caithness. The 1998 Inventory indicates that there were 8,000m^3 of LLW in storage, about half of this was in temporary storage awaiting disposal. The rest is either unsuitable for disposal, or is being stored pending future treatment to make it passively safe. LLW from Dounreay in Caithness was disposed of in waste pits excavated in the surface rock. LLW scheduled for Drigg is now mostly subject to high force compaction and then placed in metal containers, of about 15m^3 capacity, prior to grouting with cement and placement inside a concrete-lined vault. British Nuclear Fuels plc (BNFL) operate the Drigg site as a commercial Very low level wastes (VLLW) Wastes which can be disposed of with ordinary refuse, each 0.1 cubic metre (m 3) of material containing less than 400 kBq (kilobecquerels)of beta/gamma activity or single items containing less than 40 kBq Low level wastes (LLW) Containing radioactive materials other than those suitable for disposal with ordinary refuse, but not exceeding 4 GBq/te (gigabecquerels)of alpha or 12 GBq/te of beta/gamma activity – that is, wastes which can be accepted for authorised disposal at Drigg, Dounreay or other landfill sites by controlled burial Intermediate level wastes (ILW) Wastes with radioactivity levels exceeding the upper boundaries for LLW, but which do not need heating to be taken into account in the design of storage or disposal facilities High level wastes (HLW) Wastes in which the temperature may rise significantly as a result of their radioactivity, so this factor has to be taken into account in designing storage or disposal facilities venture. In addition to the LLW generated by BNFL, Drigg provides a UK-wide disposal service to a spectrum of customers including hospitals and universities.

INTERMEDIATE LEVEL WASTE

2.9 Intermediate level waste (ILW) arises mainly from the reprocessing of spent fuel, and from general operations and maintenance of radioactive plant. The major components of ILW are metals and organic materials, with smaller quantities of cement, graphite, glass and ceramics. Over the period 1949 to 1982 73,530 tonnes of low and intermediate waste has been disposed of by the UK to the North East Atlantic. Since 1982 ILW which would have been disposed to sea has been stockpiled. In addition some arisings from the late 1940s onwards have been stored on sites. The 1998 Inventory reveals that there were then 71,000m 3 of ILW in storage, 8,500m 3 of which had been treated to achieve passive safety by forming stable packages for long term management. Be it storage or disposal, this treatment is called conditioning. Stainless steel drums of 500 litre capacity are the main containers used. In order to avoid the additional radiological dose to workers and the very high costs that would be associated with re-packaging, conditioning is carried out in such a way as to anticipate the requirements for the future long-term management of the wastes. ILW, be it in raw or conditioned form, is mainly stored in shielded buildings, vaults or silos, mostly at the site where it arises. The majority originates at Sellafield.

2.10 Proposals for the conditioning of wastes are put to Nirex which assesses them against the safety of storing, transporting, handling and possible disposing of the wastes. Following such assessments, Nirex provides formal advice to guide waste producer plans and future development. When satisfied that the proposals are consistent with Nirex standards and specifications, Nirex packaging principles and the Nirex phased disposal concept, (in particular that the packages would be safe in an underground facility for protracted periods both before and after any backfilling and sealing), Nirex will provide endorsement in the form of a Letter of Comfort. This is not an automatic outcome from the

submission of waste packaging proposals, as Nirex is sometimes unable to issue a Letter of Comfort.

2.11 As no final management strategy for ILW exists, one of the aims of this consultation paper is to set out the process through which an ILW management policy capable of commanding widespread public support will be chosen.

HIGH LEVEL WASTE

2.12 High Level Waste (HLW) is a heat-generating waste that has accumulated since the early 1950s at Sellafield and Dounreay as the concentrated liquid nitric acid product from the reprocessing of spent nuclear fuel. HLW comprises only about 2% of the UK's total volume of stored radioactive waste, but about 90% of its radioactive content. HLW storage facilities have cooling systems to dissipate the heat that the waste generates, and massive concrete shielding to protect the operators. The Health and Safety Executive (HSE) reported on 18 February 2000 that there were 1300m 3 of liquid HLW stored in water-cooled tanks at Sellafield. The equivalent of a further 900m 3 of liquid HLW had already been converted at Sellafield into a solid and stable form by immobilising it in glass (vitrification) within stainless steel canisters of about 140 litre capacity. There is a smaller quantity of less active HLW, 230m 3 , still in liquid form at Dounreay. Current Government policy is that vitrified HLW should be stored for at least 50 years to allow the heat to decline so as to make long-term management less complex.

2.13 As with ILW, there is currently no final management strategy for HLW. Therefore, and as the issues associated with the development of a management strategy for both sets of wastes are similar, this paper also sets out how a management strategy for HLW, which commands widespread public support, will be chosen.

Appendix 15

Letter from BFWG to Sir Anthony Cleaver, Chairman NDA

Appendix 15. Letter from BFWG to Sir Anthony Cleaver, Chairman NDA.

Sir Anthony Cleaver
Policy Adviser
NDA Team
Bay 197
1 Victoria Street
London
SW1H 0ET

22 July 2004

Dear Sir Anthony,

Prioritisation: Comment from the Business Futures Working Group

The Business Futures Working Group (BFWG) is a working group of the BNFL National Stakeholder Dialogue process (which is independently convened by The Environment Council) that aims to inform BNFL on improving its environmental performance in the light of its overall business development. This letter therefore represents consensus between stakeholders from around 15 different organisations (see overleaf for current membership).

The BFWG has been discussing a number of issues related to the NDA and its future work programme and, at our last meeting, the issue of prioritisation was raised. It is recognised that the issue of prioritisation is by no means simple and that the DTI's Prioritisation Working Group (PWG) has not had long to develop its thinking, but the BFWG thought you should have early notification of its views so that they may be fed into the discussions.

The BFWG is concerned that the membership of the PWG does not adequately represent all interested stakeholder groups. In particular, there do not appear to be any representatives who can input on issues relating to the socio-economic impact of the NDA's work. Obviously, the Group needs to restrict its membership in order to be able to function, but BFWG strongly believes that a lack of input on socio-economic issues will make it more difficult to gain stakeholder buy-in to the output of the PWG. BFWG could propose one or two individuals who would be happy to join the PWG. Please let me know if you would find this helpful.

The BFWG welcomes the commitments to openness and transparency and to stakeholder engagement that will underpin the NDA's way of working. The BFWG has actively supported the development of the NDA's stakeholder engagement framework through its interactions with the DTI. Given that this proposed way of working has had such a positive response from all stakeholders, the BFWG recommends that the PWG adopt a more interactive style of working so that stakeholders may engage in the Group's work as it develops.

Finally, there is a concern among stakeholders that the PWG could be developing a mechanism that will be set in stone and not subject to any further review or discussion. This would seem to be contrary to the policy of openness and transparency, and the stakeholder engagement commitments mentioned above. Indeed, the BFWG believes that the issue of prioritisation would seem to be an obvious topic for regular discussion by

the proposed National Stakeholder Group when it is formed in mid-2005. Your reassurance that the prioritisation process used by the NDA will be open, transparent and subject to regular review and refinement would be much appreciated.

The BFWG is happy to provide further clarification or meet with you to discuss any of the above or indeed any other aspect of the Group's work.

We look forward to hearing from you.

Yours sincerely

Rhuari Bennett (on behalf of the Business Futures Working Group)
Dialogue Co-ordinator
020 7632 0134 rhuarib@envcouncil.org.uk

Members of the Business Futures Working Group of the BNFL National Dialogue – July 04

Peter Addison	Nuclear Installations Inspectorate
Fred Barker	Independent Nuclear Policy Analyst
Gregg Butler	Westlakes Research Institute
Tom Cawley	Transport and General Workers Union
Simon Clark	Institute of Naval Medicine
David Ferguson	Environment Agency
Richard Griffin	DTI
Phil Hallington	BNFL
John Hetherington	Cumbria County Council
Dai Hudd	Prospect
Steve Jones	Westlakes Scientific Community
John Knox	North West Development Agency
Grace McGlynn	BNFL
Fergus McMorrow	Copeland Borough Council
Fred Mudway	BNFL
Martin Quin	General and Municipal Boiler Makers Union
Howard Rooms	NCNI
Pete Wilkinson	Wilkinson Environmental Consulting
Clive Williams	Environment Agency
Janet Wilson	Nuclear Installations Inspectorate

Appendix 16

Clearance criteria for residual contamination following site decommissioning

Appendix 16. Clearance criteria for residual contamination following site decommissioning

In decommissioning a nuclear site, the end point to be achieved by the decommissioning process is a major source of uncertainty. Even after decommissioning of the major process facilities, radioactive contamination is bound to be present to some degree in building structures (including ancillary buildings not directly connected with nuclear or radioactive processes) and in the ground itself, albeit perhaps at very low levels. The question as to what levels of residual contamination are acceptable as an end point for decommissioning is therefore of key importance. There are also important implications for the classification and disposal of materials removed from sites during the decommissioning process.

Regulatory classification of material containing residual contamination

This is an area in which current regulation and standards are extraordinarily complex and unclear. The starting point within the UK is the Radioactive Substances Act 1993 and its accompanying Exemption Orders which offer definitions of materials which do not need to be regulated as radioactive waste. For most radionuclides, the Substances of Low Activity Exemption Order (1986) specifies a limit of 0.4 Bq g^{-1} below which materials which are solid, and essentially insoluble in water, need not be regarded as radioactive for regulatory purposes. The Phosphatic Substances and Rare Earths exemption Order (1962), which is still in force, sets substantially higher limits for naturally occurring radionuclides from the decay chains of uranium and thorium; this can exempt concentrations as high as 15 Bq g^{-1} of uranium or thorium from control although interpretation becomes complex when their radioactive daughters are present.

DETR (now DEFRA) have issued guidance on the interpretation of this aspect of radioactive substances regulation (DETR, 2000). However, rather than simplifying matters, the guidance serves mainly to illustrate how complicated the concept is to apply in practice. For example, the guidance clarifies that the limits in exemption orders are to be applied after subtraction of background levels. Background levels are of course variable so this is complex to determine in practice. Moreover 'background' concentrations from anthropogenic radionuclides are taken to include the concentrations in environmental materials from past authorised discharges - but this dispensation applies only outside the site boundary, not within it.

A further area of difficulty in interpretation arises because the exemption limits are expressed in becquerels per gram whereas material is disposed of in tonne quantities and upwards - so does every gram of disposed material have to be within the limit? What degree of inhomogeneity within the material is acceptable? A code of practice has been developed by the industry (Clearance and Exemption Working Group, 2003), which tackles this and many other difficult and arcane issues. However individual cases are still likely to be determined on a case by case basis when regulatory consent is sought.

The exemption limits in the Radioactive Substances Act and its Exemption Orders appear to have been derived pragmatically with no apparent linkage to radiation dose or risk. This is amply evident from the very much higher exemption limits applicable to naturally occurring radionuclides, regardless of their radiotoxicity which is comparable to the more radiotoxic of the anthropogenic radionuclides.

By contrast, the International Atomic Energy Agency are developing guidance on exemption and clearance levels which are derived from consideration of the radiation doses which may arise from unrestricted use of the materials (IAEA, 2004)[26]. Their current draft proposes activity concentrations for exemption, on a radionuclide by radionuclide basis, which range from 0.1 to 10,000 Bq g^{-1}. For radionuclides most likely to be present as residual contamination on nuclear sites, e.g. cobalt-60, strontium-90, caesium-137, plutonium-239 and americium-241, the exemption levels are between 0.1 and 1 Bq g^{-1}, i.e. similar (but not identical to) the value of 0.4 Bq g^{-1} in the Substances of Low Activity Exemption order. For many other nuclides the exemption limits are much higher than 0.4 Bq g^{-1}. Should the IAEA levels become accepted internationally, there are clear implications for the Exemption Order as, if it were left unchanged, the situation could arise whereby material; regarded internationally as unrestricted for the purpose of trade would be treated in the UK as radioactive waste; conversely some material cleared of control in the UK could be regarded as restricted internationally.

Quite separately from the above two strands of criteria which relate to concentrations of radioactivity in the material which needs to be dealt with, the Health and Safety Executive have recently consulted on criteria for the delicensing of nuclear sites, which clearly relates directly to the levels of residual contamination which may be acceptable. HSE propose that the criterion should be that the risk from any residual contamination to any individual who may use the site should be less than one in a million per year and, in addition, should also be demonstrated to be As Low As Reasonably Practicable. This criterion appears to have been derived from a narrow and rather theoretical consideration of risk criteria, and there is no evidence that its implications for radioactive waste management or its relation to the various clearance criteria discussed above have been considered. The BFWG have responded specifically to this consultation (see Appendix 17 of the BFWG Report).

Disposal routes for material containing residual contamination

So far we have established there is a considerable lack of clarity, and a high probability of confusion and contradiction, in criteria for determining the regulatory controls which should apply to residual contamination on a decommissioned nuclear site. If, regardless of this situation, a decision is reached to remove material from the site the question of whether a treatment or disposal route is available becomes important.

RWMAC (2002) have reviewed the management of low activity solid radioactive wastes in the UK. They note that the current definitions for low level radioactive waste are:

Low level waste (LLW): not greater than 40 GBq te^{-1} beta, or 12 GBq te^{-1} alpha (these being the upper limits for acceptance at the UK's only LLW disposal facility, located near the village of Drigg in Cumbria).

Very low level waste (VLLW): not greater than 0.4 GBq m^{-3}, or 0.04 GBq per individual item (these being the upper limits for 'dustbin disposal', i.e. co-disposal with conventional wastes to a landfill site).

RWMAC also note than there is no generally accepted lower threshold for LLW or VLLW, although the limits of Schedule 1 of the Radioactive Substances Act 1993 and the RSA Substances of Low Activity Exemption Order, as discussed above, are often cited. The

[26] The IAEA draft excludes consideration of naturally occurring radionuclides.

development of international criteria such as those being considered by the IAEA would complicate matters further unless UK legislation were to be brought into line with international practice as it becomes established.

The VLLW category was always intended as a means for disposing of small quantities of waste - typically, the contents of a dustbin - by small users; it was never intended as a category for use in disposing of substantial volumes of material. Even so, the reluctance of local authorities and waste disposal site operators to accept anything defined as 'radioactive waste' has meant that, in practice, the Drigg disposal site already faces pressure to accept wastes which could, under existing policy and regulation, be disposed of by other means.

As the programme of decommissioning nuclear sites proceeds, very large volumes of waste in the lower activity ranges for LLW (i.e. above 4×10^{-4} GBq te^{-1}, but orders of magnitude below 40 GBq te^{-1}) are expected to arise. There is currently no route available for the disposal of these volumes of waste except Drigg. RWMAC conclude:

"RWMAC does not believe that moving very large volumes of waste, at the lower end of the LLW activity range, from one site to another is likely to be an effective and efficient means of dealing with it, particularly if the site to which it is moved is Drigg, a scarce UK national resource."

"In the Committee's opinion, any perception that sites can be returned to a totally uncontaminated "green field" status……is likely to be unrealistic for the vast majority of nuclear installations."

The role of stakeholders

Clearly, the current situation regarding regulatory criteria is confused to the point of appearing untenable. Starting from HSE's proposed risk criterion, a substantial assessment would be required to establish what levels of residual contamination may be acceptable; if the conclusion was that material should be removed from the site there may be debate about whether it should be treated as radioactive waste; if large volumes of material were so classified it may be that no disposal route is available. As noted by RWMAC, the inevitable conclusion may be that residual contamination has to remain on the site.

In this confused situation it is quite unclear where the views of stakeholders may be taken into account. Nonetheless, the proposed policy set out in the November 2003 public consultation on modernising the policy for decommissioning the UK's nuclear facilities (DTI, 2003) states that the Government proposes, *inter alia,* to:

"recognise that restoration to unrestricted use may not always be the BPEO for the site of a decommissioned facility, that the policy needs to be flexible enough to allow for a range of possible end points reflecting the intended future use of the site……"

and

"make clear that decisions on end points should only be reached after consultation with local communities and other stakeholders".

Conclusion and recommendations

We believe the current regulatory framework (including HSE's proposed delicensing criteria) for dealing with residual contamination on decommissioned nuclear sites is far from 'joined up' and confused to the point of being untenable in practice. We recommend that:

- The responsible UK agencies and Government departments - principally DEFRA, the HSE and the Environment Agency - jointly review regulatory criteria within this area to ensure consistency between the requirements of UK regulators and also consistency with international standards as they become established. This review should consider both the classification of material containing residual contamination and the regulatory regimes which might be applied to sites in which residual contamination has been left *in situ,* perhaps with restrictions on future site use.
- The Committee on Radioactive Waste Management should give consideration to disposal options for very large volumes of material with low levels of residual contamination.
- On its formation, the NDA should give urgent consideration as to how stakeholders may best be engaged in decisions about site endpoints on a case by case basis.

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Appendix 17

Comment on HSE consultative document on criteria for de-licensing nuclear sites under the Nuclear Installations Act 1995

Appendix 17. Comment on HSE consultative document on criteria for de-licensing nuclear sites under the Nuclear Installations Act 1995

Our main concern with the proposed criteria is that they appear to have been derived from a narrow and rather theoretical consideration of risk criteria. The criteria clearly have potential implications for radioactive waste management, but there is no evidence that these have been considered by HSE.

RWMAC (2002) have reviewed the management of low activity solid radioactive wastes in the UK. They note that the current definitions for low level radioactive waste are:

Low level waste (LLW): not greater than 40 GBq te^{-1} beta, or 12 GBq te^{-1} alpha (these being the upper limits for acceptance at the UK's only LLW disposal facility, located near the village of Drigg in Cumbria).

Very low level waste (VLLW): not greater than 0.4 GBq m^{-3}, or 0.04 GBq per individual item (these being the upper limits for 'dustbin disposal', i.e. co-disposal with conventional wastes to a landfill site).

RWMAC also note than there is no generally accepted lower threshold for LLW or VLLW, although the limits of Schedule 1 of the Radioactive Substances Act 1993 are often cited for uranium and thorium series radionuclides, and the value of 4×10^{-4} GBq te^{-1} from the RSA Substances of Low Activity Exemption Order is often cited for anthropogenic radionuclides.

The VLLW category was always intended as a means for disposing of small quantities of waste - typically, the contents of a dustbin - by small users; it was never intended as a category for use in disposing of substantial volumes of material. Even so, the reluctance of local authorities and waste disposal site operators to accept anything defined as 'radioactive waste' has meant that, in practice, the Drigg disposal site already faces pressure to accept wastes which could, under existing policy and regulation, be disposed of by other means.

To further complicate the picture, international organisations are also giving consideration to *'de minimis'* levels for the concentration of radioactivity in materials which may be used without control - 'free release' or 'clearance' criteria. ICRP (2004) have recently circulated a consultation document in which they propose material with an activity level of 10^{-5} GBq te^{-1} anthropogenic alpha activity, 10^{-4} GBq te^{-1} anthropogenic beta activity, 10^{-3} GBq te^{-1} uranium or thorium series radionuclides, or 10^{-2} GBq te^{-1} potassium-40, should be excluded from the scope of their recommendations. IAEA are also currently revising clearance levels for a revision of their Basic Safety Standards (Cooper *et al.,* 2000).

As the programme of decommissioning nuclear sites proceeds, very large volumes of waste in the lower activity ranges for LLW (i.e. above 4×10^{-4} GBq te^{-1}, but orders of magnitude below 40 GBq te^{-1}) are expected to arise. There is currently no route available for the disposal of these volumes of waste except Drigg. RWMAC conclude:

"RWMAC does not believe that moving very large volumes of waste, at the lower end of the LLW activity range, from one site to another is likely to be an effective and efficient means of dealing with it, particularly if the site to which it is moved is Drigg, a scarce UK national resource."

"In the Committee's opinion, any perception that sites can be returned to a totally uncontaminated "green field" status……is likely to be unrealistic for the vast majority of nuclear installations."

The key concern regarding HSE's proposed criteria is - *do* they add to, or diminish, the problems of waste disposal identified above? Without undertaking at least some example case studies, it is impossible to know.

It would clearly be nonsensical for the application of a "10^{-6} plus ALARP" criterion to require the removal of large quantities of radioactive material from a site unless there were established routes for its disposal, which would entail lower risks than the alternative of leaving the material in place. Since it seems this condition may not readily be fulfilled, HSE's proposals may, in practice, preclude the de-licensing of many nuclear sites.

It would also clearly be nonsensical if application of the proposed criteria led to the conclusion that residual activity on a site, at levels below those recognised internationally as justifying exclusion from regulatory control, precluded the de-licensing of a site. It would be equally nonsensical to require a detailed assessment to demonstrate that this situation was, in practice, ALARP in any specific case.

We are also concerned that there may be some inconsistency with the proposed policy set out in the November 2003 public consultation on modernising the policy for decommissioning the UK's nuclear facilities (DTI, 2003). In this consultation DTI state that the Government proposes, *inter alia,* to:

"recognise that restoration to unrestricted use may not always be the BPEO for the site of a decommissioned facility, that the policy needs to be flexible enough to allow for a range of possible end points reflecting the intended future use of the site……"

and

"make clear that decisions on end points should only be reached after consultation with local communities and other stakeholders".

HSE's proposed criteria leave little scope for involvement of stakeholders in delicensing, unless it be in the determination of ALARP. Of course it may be HSE's view that a site could be released for alternative, restricted, use without delicensing. However, that raises many issues including the impact on real flexibility of end use, the nature of the licence and the obligations which may be placed on any licensee. HSE need to make clear their policy on dealing with the alternative, but restricted, use of decommissioned licensed sites. Case studies of hypothetical future use scenarios would be of assistance here.

In summary, we urge:

- Before establishing risk based criteria for de-licensing, HSE should consider whether these are likely to add to the problems already identified for the management of low level radioactive wastes arising from decommissioning. This consideration should be made jointly with the Environment Agency and DEFRA, and should take account of relevant developments both nationally (for example, the work of CoRWM and CERRIE) and internationally (for example, the work of ICRP and IAEA).

- Before establishing risk based criteria for de-licensing, HSE should consider whether they are consistent with developing international guidance on ‘free release’ or ‘clearance’ levels for radionuclides; and in doing so, whether additional criteria for determining situations in which demonstration of ALARP would not be required could be helpful.
- HSE should conduct some case studies to examine the practical implications of its proposed criteria.
- HSE should clarify their policy on the alternative, but restricted, use of decommissioned licensed sites and, ideally, illustrate their policy through case studies of hypothetical example scenarios.

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Appendix 18

List of BFWG members

Appendix 18 – List of BFWG members

The membership of the group has varied much over the first stage of the work programme. The table below is therefore not a comprehensive list of all attendees at all the meetings but rather a list of current 'full-time' group members.

BFWG Membership – October 2004

Name		Organisation	Rotating Chair
Peter	Addison	Nuclear Installations Inspectorate	Janet Wilson
Janet	Wilson	Nuclear Installations Inspectorate	Peter Addison
Fred	Barker	Independent Nuclear Policy Analyst	
Gregg	Butler	Westlakes Research Institute	
Simon	Clark	Institute of Naval Medicine	
David	Ferguson	Environment Agency	Clive Williams
Clive	Williams	Environment Agency	David Ferguson
Richard	Griffin	DTI	
Phil	Hallington	BNFL	
John	Hetherington	Cumbria County Council	
Dai	Hudd	Prospect	
Steve	Jones	Westlakes Scientific Consulting	
John	Knox	North West Development Agency	
Grace	McGlynn	BNFL	
Fergus	McMorrow	Copeland Borough Council	
Fred	Mudway	BNFL	
Howard	Rooms	NCNI	
Pete	Wilkinson	Wilkinson Environmental Consulting	

= 18 members

Appendix 19

Selection Criteria for Working Groups

SELECTION CRITERIA FOR WORKING GROUPS

One output from Main Group meetings of stakeholders in the BNFL National Stakeholder Dialogue will be the formation of Working Groups. These Working Groups will carry forward more detailed elements of the work and report back to the next Main Group meeting.

Experience of Working Group meetings demonstrates that around 15 members provides a cohesive, practical and effective group. If there are more volunteers than places, a number of criteria will inform the Co-ordinating Group's selection from the volunteers.

People participating in the Working Groups must:

- represent a particular constituency and/or have relevant experience or expertise relevant to the Working Group;
- have been inducted into the process and style of working;
- accept and conform to the ground rules, and participate in their review and development;
- develop, observe and work in a co-operative spirit in the Working Group, while respecting that profound differences of opinion may exist;
- be a competent and collaborative negotiator (rather than a positional/competitive bargainer);
- be available for the full series of Working Group meetings (which may be 1 to 1½ days every month or 6 weeks) and Main Group meetings;
- be willing to undertake work between meetings, signposting or providing papers and reviewing information within the timescales agreed within the Working Group (this may be up to 1 week's work per month).

In addition to the above, the overall group profile will also influence Co-ordinating Group's choice. Ideally, each working group will need to contain representatives from the following sectors

- communities;
- company;
- customers;
- environmental NGOs;
- other NGOs;
- government;
- regulators;
- workforce;

and will need to be balanced in terms of the necessary skills.