

BNGSL Reference Number: RP/LPSERP-000/PROJ/00103/A

**High-Level Options for
Remediation of Sellafield
Legacy Ponds and Legacy Silos**

**Report of
Stakeholder Consultation Workshop
13th – 14th December 2005**

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Report History

This document has been prepared by Galson Sciences Limited for British Nuclear Group Sellafield Limited (BNGSL) under the terms of Agreement No. 4610000281, P/O No. 9030/4510027083. Draft 2 accounted for comments provided by BNGSL on Draft 1 (dated 6 January 2006). This document accounts for comments provided by Workshop participants on Draft 2 (dated 12 January 2006).

High-Level Options for Remediation of Sellafield Legacy Ponds and Legacy Silos: Report of Stakeholder Consultation Workshop 13th – 14th December 2005				
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Executive Summary

British Nuclear Group Sellafield Ltd (BNGSL) proposes to remediate the Legacy Ponds and Legacy Silos (LP&LS) facilities so that they are in a safer and more environmentally acceptable state. The LP&LS remediation plans are currently progressing through the early stages of the design process and a Baseline Best Practicable Environmental Option (BPEO) study is being undertaken to provide guidance for selecting waste retrieval, buffer storage, waste treatment, and effluent management options. This report summarises a BPEO stakeholder consultation workshop held on 13th – 14th December 2005, at the Ennerdale Country House Hotel, Cleator, to discuss issues associated with LP&LS remediation. It should be noted that not all stakeholders invited to the workshop were able to attend – particularly those from Environmental Non-Governmental Organisations. In addition, wider public comment has been invited via the BNGSL web site.

The outcomes from the discussions will be considered as an input for the further development of the LP&LS remediation projects.

Workshop participants have reviewed this report and confirm it to be a reasonably accurate record of the discussions held on the LP&LS Baseline BPEO study on 13th – 14th December 2005.

Several major considerations emerged from the stakeholder discussions. From a methodological point of view, the workshop participants felt able to assess the broad management options without undertaking a detailed examination of option scoring and weighting. While option scoring and weighting are felt to be important for specific project-level BPEO studies, the more strategic overview undertaken at this workshop was concerned with broader issues and principles. Some participants expressed a willingness and a desire to provide a more detailed input to the project-level BPEO studies in due course.

All participants expressed a concern about the level of demand being placed on stakeholders to assist the wide range of Sellafield site consultation activities that were planned. It was felt that improved co-ordination, more notice, and broadening stakeholder representation would help. The majority of participants felt that the workshop had been both useful and enjoyable. Comments were made that the technical level of discussion was better than had been achieved in recent Nuclear Decommissioning Authority (NDA) consultations and that the smaller number of participants (approximately 10 stakeholders were present each day) had helped in that regard. BNGSL were thanked for their openness and frankness in addressing participants' questions.

Much of the discussion sought to encourage BNGSL to consider options in terms of their impact on public confidence in the site and its management. In broad terms, it was suggested by several participants that while they understood the technical arguments for the “Do Nothing” or “Do the Minimum” type of option, this choice would be unwelcome to many stakeholders. However, there would be strong encouragement for some more easily implementable, in some cases quite limited,

measures. Implementing such measures would provide public assurance and confidence, by demonstrating that BNGSL is “willing to go the extra mile” to safeguard the public, the workforce and the environment.

There was considerable discussion in relation to site effluent treatment and the UK Discharge Strategy. It was pointed out that the Environment Agency has to be open to the possibility that discharges may need to increase for a short period where no other options are available and where a full justification can be made. Other participants concurred with this view.

Several participants felt there was a need to develop greater clarity on the overall strategy in relation to site decommissioning and site end points. This arose in relation to defining what level of commitment of resources to land remediation would be deemed acceptable. This was linked to a concern for what level of investment in the area was envisaged, and what guarantees could be given that if temporary decommissioning measures were agreed, that eventual long-term funding would still be forthcoming to implement an acceptable long-term strategy. Some participants felt that without an understanding of the end point for the site, it would not be possible to consider properly the steps required to reach it.

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High-Level Options for Remediation of Sellafield Legacy Ponds and Legacy Silos

Report of Stakeholder Consultation Workshop 13th – 14th December 2005

1 Introduction

As part of the clean-up of the Sellafield site and in preparation for decommissioning, British Nuclear Group Sellafield Ltd (BNGSL) proposes to remediate the Legacy Ponds and Legacy Silos (LP&LS) facilities so that they are in a safer and more environmentally acceptable state. The LP&LS remediation plans are currently progressing through the early stages of the design process and a Baseline Best Practicable Environmental Option (BPEO) study is being undertaken to provide guidance for selecting waste retrieval, buffer storage, waste treatment, and effluent management options.

Guidance on BPEO studies recommends the incorporation of stakeholder views into the decision-making process. In line with this, BNGSL undertook an independently facilitated two-day stakeholder workshop on 13th – 14th December 2005, at the Ennerdale Country House Hotel, Cleator. The workshop was structured around a number of key questions relating to the remediation of the LP&LS facilities where BNGSL are seeking stakeholder views.

This report presents the key discussion points arising from the consultation workshop. Stakeholders participating in the workshop were presented with the preliminary considerations towards the Baseline BPEO, set against the issues and challenges associated with remediating the LP&LS facilities. Opportunities for group discussion were incorporated throughout the presentations.

The report essentially follows the workshop agenda and associated dialogue in chronological order. However, to improve clarity for the reader, the discussion points have been slightly re-organised into key themes. Understandably, some themes recurred throughout both days, and therefore have been brought together under one heading. There were also times when a discussion would start on one subject, deviate into several others, and then return to the original discussion point. In those cases, the report has rearranged the order of the discussions to keep subject matter together.

For ease of reference, a Glossary of Terms is included as Appendix A and the Outline Agenda is included as Appendix B. The list of participants attending either or both days of the workshop is set out in Appendix C. Stakeholders attending the workshop represented local councils; site employees; the Sellafield Local Liaison Committee;

Nirex; the supply chain and other key local organisations. National-facing Non-Governmental Organisations, including Friends of the Earth and Greenpeace, were also invited to attend but were unable to do so. A representative from the Nuclear Decommissioning Authority (NDA) attended as an observer on both days and the Environment Agency (EA) observer attended on day 1. The Nuclear Installations Inspectorate (NII) were also invited to attend but were unable to do so.

Briefing materials were sent to participants in advance of the workshop. These included the key questions that BNGSL are seeking stakeholder input on, in order to stimulate discussion. Feedback forms were provided to participants at the end of the workshop and the stakeholder evaluation of the workshops is presented as Appendix D (to be completed). The output of stakeholder discussions will inform the development of the Baseline BPEO study and provide guidance for selecting waste retrieval, treatment, storage and effluent management options for decommissioning the LP&LS facilities.

2 Objectives

BNGSL confirmed that the ultimate vision for the Sellafield site restoration strategy is to make the land occupied by the LP&LS facilities available for other possible future uses consistent with the proposed endpoint of the Sellafield site. The goal of LP&LS remediation is to remove the risk from continued storage of wastes in the facilities, leaving the LP&LS facilities 'Stable and Dry', ready for decommissioning and eventual demolition. BPEO studies will help evaluate remediation options, and buffer storage and treatment options for addressing the hazard associated with waste removed from the LP&LS facilities, weighing the impacts on Health & Safety, and Environment against Technical Feasibility and Cost.

Ray Kemp of Galson Sciences Limited, the independent facilitator of the workshop, outlined the overall objective of the consultation as a means of gaining an understanding of the range of stakeholder values and views in relation to the remediation of the LP&LS facilities. In particular, the goals of the consultation were described as:

- To collect feedback for consideration in evaluating work undertaken on the LP&LS Baseline BPEO study to date; and
- To allow the LP&LS projects to use the feedback to inform future technical decisions.

In addition, Ray Kemp noted that the output of the BPEO study will be guiding views and statements that will be considered in more detailed technical BPEO studies.

At the outset, participants were asked to define their own expectations and objectives for the workshop. The following hopes were expressed:

- That the relative benefits and risks of spending such large sums of money on decommissioning would be set out. It was hoped that clarification would be provided as to how the level of risk will change if the large amounts of money being considered are spent.
- That there would be clarification regarding the amount of funding allocated for remediation of the LP&LS facilities in the NDA business plans and financial projections.
- That understanding would be gained regarding the LP&LS decommissioning proposals within the context of rumours circulating about NDA expectations, as opposed to official NDA statements.
- That an outline would be provided as to how BNGSL will involve the local community in an ongoing process of consultation and review.
- That reassurance would be provided that learning and best practice from experience overseas are being applied to LP&LS decommissioning.

3 The Scale of the Challenge

Tony Price, Director of Clean-Up at BNGSL, welcomed stakeholders and provided an introduction to the top-level issues associated with the LP&LS in the context of wider clean-up and decommissioning objectives.

BNGSL staff provided an overview of the challenges faced in remediating the LP&LS facilities in the context of the wider site clean-up at Sellafield. The following issues arose during the presentations and in subsequent discussion with stakeholders at the workshop.

3.1 Site Management Continuity

Competition for the site licence was seen as one of the key challenges facing overall site clean-up. Some participants felt that as the site licence is expected to go out for tender in 2009, this will affect BNGSL's ability to plan work and deliver work plans. It was further suggested that decisions regarding the site contractor licence are crucial in considering remediation of the LP&LS facilities due to the potential lack of continuity - and subsequent potential implications for safety - that a change in contractor could introduce.

The NDA explained that the strategy for competition at Sellafield is currently being reviewed, and that due to the complexity of the site, it is not yet clear when or what form competition is likely to take place. Other participants expressed concerns that there would be a loss in the transfer of knowledge if the site licensee were to change. The NDA explained the management and operational structure of the Sellafield Site:

- (i) a top-tier Site Management Company (SMC) (currently British Nuclear Group) employing approximately 200 who own and, for the duration of their contract, manage:
- (ii) a Site Licence Company (SLC) (currently BNGSL) employing approximately 13,000 who hold the Site Licence, operate the site, and where the vast majority of the technical expertise resides. The SLC is a transferable asset.

Whilst the top-tier SMC would change if the site contract were awarded to another organisation, the majority of site employees are employed by the SLC, which is a transferable asset and the employees would therefore remain on site. This would minimise loss of knowledge from the site.

One participant felt strongly that due to BNGSL's track record, they should stay as site contractor, to minimise potential problems that a change in management could introduce. Other participants expressed concern that even if a way forward were to be agreed to address remediation and eventual decommissioning of the LP&LS facilities, a new contractor might decide to amend these plans in the future, and that this ought to be taken into account in considering options. It was suggested that as the risks associated with the LP&LS facilities had to be addressed, regardless of who the site

contractor was, risk management is the issue on which options for the remediation of the LP&LS facilities should be considered.

3.2 Supply Chain Capacity

Concerns were raised by some participants that consideration of LP&LS remediation and site clean-up overall was taking place in isolation of the supply chain. It was emphasised that the supply chain has a finite capacity, and yet a great deal of clean-up and remediation activities are taking place already, with more planned for the future. It was felt that no interaction between the clean-up programmers and suppliers appears to be taking place to ensure that delivery is possible. It was recognised that there are also other draws on supply chain capacity, from outside the nuclear industry, and that with some suppliers struggling to meet current demands, this is already impacting on delivery.

It was suggested that an indication ought to be provided to the supply chain as early as possible that operations are being considered. Supply chain implications should be integrated into the project plan, to avoid proposals exceeding their deadlines or failing to be delivered.

BNGSL confirmed that the Sellafield Clean-Up Group has begun to address this challenge, and that meetings with the supply chain will take place every two months to discuss such issues.

3.3 Supplier Confidence

It was felt important by some participants to address the lack of supplier confidence created by annual funding cycles. LP&LS remediation was described as a stop-start funded activity, with the effect that companies have been unwilling to commit to relocating their expertise when the environment does not provide long-term confidence. A three to five year funding cycle was suggested to demonstrate greater investment planning and hence improve supplier confidence. It was recognised that this is an industry-wide issue currently being considered by the NDA.

The lack of supplier confidence was also linked to a skills gap in the UK. The average age of the supply chain workforce was estimated by one participant to be 50 years of age or above, while for BNGSL staff the average workforce age is above 40. This was felt to be a potential problem and it was recommended that efforts be made to invest nationally and locally in training and inject new (younger) staff.

3.4 Community Investment

It was suggested by one participant that a significant conflict exists where the emphasis on site clean-up relates to cost effectiveness and speeding up the process, while community concerns are about a boom in employment to tackle clean-up as

quickly as possible being followed by mass local unemployment. It was felt that the community should not be put at such a risk from one organisation's policy decisions.

It was acknowledged by BNGSL that the Sellafield site has a specific employment capacity, and that a stage will be reached where the infrastructure will not support the same level of work as it currently does. BNGSL recognised the need to be aware of employment capacity levels and to look at how potential peaks and troughs in staffing level changes can be smoothed out.

Retraining and redeployment of staff were felt to be vital requirement by some participants at the workshop, although the question was raised as to how to build the right mechanisms for retraining in order to address the skills shortage and potential loss of employment opportunities.

The NDA representative acknowledged concerns about long-term impacts on the community and explained that the NDA is involved with funding local university and training facilities. Participants were reminded that Government policy is driving work on clean-up at Sellafield and elsewhere and hence such operations cannot be side-stepped. The NDA is reportedly pleased with the rate of progress on clean-up at Sellafield this year and the level of investment being put into it by BNGSL on their behalf.

It was suggested by participants that clean-up could provide an opportunity to build public confidence and contribute to the public debate about the future of Sellafield. It was also felt that clean-up ought to provide new associated investment and work opportunities, such as a recycling centre. One participant expressed the view that if local suppliers do not take advantage of the new opportunities, someone else will. It was considered important to invest in forward planning to improve the local ability to bid for and win new contracts.

3.5 Stakeholder Involvement

The opportunity to participate in and be informed about decisions taken regarding Sellafield's future was welcomed by all participants at the workshop. However, most participants felt that the burden of stakeholder consultation could quickly become onerous, and participants asked that the issue of stakeholder overload be addressed, not only at a local level, but nationally.

It was felt that there is a limited pool of stakeholders for the Sellafield site and hence the same groups of people tend to be encountered at stakeholder consultation activities. However, rather than reducing the amount of stakeholder consultation undertaken to reduce the stakeholder burden, it was suggested that greater investment into the stakeholder resource should be provided. This was felt to be the best way of ensuring quality stakeholder involvement.

Examples of investment in stakeholder engagement overseas were provided by workshop participants, such as the Energy Communities Alliance in the United States, which is fully funded by the US government.

Some participants also felt that the County Council and Borough Councils have to accommodate a great deal of consultation demands, all of which are funded by local tax payers. This was felt to be an unfair burden on local tax payers, given that a large amount of consultation relating to Sellafield actually addresses issues of potential national significance.

It was also suggested that within west Cumbria there are a great number of retired ex-Sellafield workers, with levels of information and expertise that would be valuable in considering some of the BPEO issues, who could be engaged more proactively in the consultation.

A comment was made by one participant that there is a very well informed local community and the expectation is that these issues will be understood by local people. A caution was raised that stakeholder engagement ought to be flexible enough to be tailored to meet the abilities of all stakeholders. For example, it was suggested that not everyone has the technical knowledge to input to the more detailed elements of the proposals.

However, while BNGSL investment in stakeholder consultation was welcomed by participants at the workshop, it was felt that a balance needs to be struck between investment and independence of process. A suggestion was made that a support fund could be created which could be accessed by volunteer stakeholders to help them to participate in consultation activities, as required.

Comments were made that the technical level of discussion at this workshop was better than had been achieved in recent NDA consultations and that the smaller number of participants (11 on Day 1 and 10 on Day 2) had helped in that regard. It was felt that improved co-ordination, more notice, and broadening stakeholder representation would help further.

4 The BPEO

A presentation was provided by BNGSL staff on the BPEO process itself and the study being undertaken for the high-level remediation options for the LP&LS facilities. It was confirmed that the overall objective of the LP&LS Baseline BPEO study is to provide guiding views and statements that need to be considered when undertaking lower level, more detailed BPEO studies for waste retrieval, buffer storage, waste treatment, and effluent management options. Specific questions were posed by the project team in order to stimulate discussion and gain an understanding of stakeholder values and views on fundamental issues.

4.1 BPEO Objectives

Do you have any comments on the overall objective for the remediation of the Legacy Ponds and Legacy Silos facilities and the objective of this Baseline BPEO study?

One participant suggested that at one level people were likely to agree with the objectives, but reservations were expressed over the potentially very large risks that could be encountered to get to the end state. It was suggested that stakeholders might need to understand the bigger picture before being able to comment in detail on the LP&LS BPEO objectives.

There were also comments regarding the concept of hazard reduction as the objective. There were concerns that the LP&LS hazards would not be reduced by removing the wastes from the facilities, but would rather result in them being transferred elsewhere, although it was recognised that this would reduce the level of risk presented.

Some participants were keen at several stages in the discussions to learn how best practice both in the UK and from overseas was being applied in the identification and assessment of options. BNGSL explained that the UK has unique legacy issues that are more arduous than in most other countries. BNGSL recognises the importance of applying best practice and is utilising acknowledged international experts, though to a large extent BNGSL is at the forefront in many areas, given the unique LP&LS issues.

4.2 Involving Stakeholders in BPEO Decision Making

Do you have any comments on the general approach to stakeholder involvement in the Legacy Ponds & Legacy Silos Baseline BPEO study? Do you understand how your feedback will be used to inform programme recommendations for consideration under the Sellafield and NDA strategy?

Participants commented that they were happy to provide their input to the process, but there was a request for an indication of how they would continue to be involved in the future as more detailed plans developed. Participants anticipated that stakeholders would remain involved in developing the BPEO, rather than BNGSL coming up with proposals that would simply be presented to stakeholders.

BNGSL confirmed that there was no intention to force a consensus from the workshop, but rather the intention was to start a dialogue.

One participant felt that stakeholder engagement ought to involve a wider group of community representatives, and not just councils and regulators. The point was made that the local community will always be here regardless of what happens on site, and that by properly integrating them into the process rather than segregating consultation into a separate 'box', confidence and trust might be gained. It was suggested that a new way of working has to evolve.

Another participant felt that as the workshop participants were a knowledgeable group, the background information could have been shortened to allow more time to discuss the details. However, other participants felt that the discussions around the background issues had been valuable and helpful, and one participant, who attended on Day Two only, felt that there had been too much technical information.

5 The LP&LS Facilities

BNGSL staff presented information regarding the specific challenges and remediation issues associated with each LP&LS facility: the Pile Fuel Storage Pond; the Magnox Fuel Storage Pond; the Magnox Cladding Wet Storage Silos; and the Dry Storage Silos.

5.1 Challenges Faced in Remediating the Facilities

BNGSL explained that there are differences as well as similarities between the ponds; for example there are differences in the types of sludge materials, activity levels, and chemical behaviour. Hence there are different challenges in dealing with each pond and different treatment paths are required.

One participant asked whether the Magnox Fuel Storage Pond is the single biggest challenge in the UK partly due to the restrictions in access. BNGSL explained that each LP&LS facility has different specific challenges; for example the Magnox Swarf Silo has more radioactive waste than the other LP&LS facilities.

Another participant asked whether it was the uncertainty of the waste composition and the resultant complex chemistry that represents the key challenge. It was suggested that if it were possible, the waste should simply be solidified and cut into blocks.

5.2 Long-Term Behaviour of Packaged Wastes

It was explained by BNGSL that as well as facing the specific challenges associated with remediating each facility and the uncertainty of the contents, one of the other key considerations is the long-term behaviour of the materials, once packaged, for periods of thousands of years and beyond.

One participant felt that it was unnecessary to consider the behaviour of the waste for such long periods, as after 800 years most fission products will have decayed to background levels. Another participant explained that the waste contains other radionuclides as well as fission products, and some of their half lives exceed tens of thousands of years, so that even if the majority of the activity will have decayed within 800 years, there would remain some radioactive hazard for a very long period.

5.3 Hazard Management

Participants commented that waste removal itself introduces new hazards, which means that risks will increase during the waste management stage, but eventually reduce. It was pointed out that waste management also introduces the potential for increased emissions.

One participant suggested that as the risk decreases over time, a stage would be reached where the risk becomes acceptable, so that removing the remaining hazard

may not be perceived as a necessary benefit after that stage. The point was made by the participant that reducing risk does not necessarily mean reducing the hazard, with the example that leaving land as contaminated may be perceived as less important an issue than continued remediation (with all the risks that entails) and a possibly more acceptable end point. However this example was challenged. It was recognised that interventions may include options that increase risk in one area in order to decrease them in another, but that different stakeholders would have different priorities about what should be protected, and that this is part of the balance to be explored. BNGSL pointed out that all of the options under consideration would comply with regulatory requirements and would not lead to risks beyond permissible limits.

The EA observer noted that the Magnox Cladding Wet Storage Silo is a facility that could be considered as falling below current engineering standards. There have been previous leaks and there is therefore a legacy of contaminated land. It was suggested by the EA that in considering options for this silo, the current state of the facility and the potential for further leaks of highly active liquor once works commence ought to be taken into account.

Some participants commented that it might be of long-term benefit to have higher emissions in order to end up with a longer period with much lower emissions as a result.

The EA observer commented that Government policy drives EA regulatory requirements in line with the UK Discharge Strategy - that there should be a progressive reduction in discharges, including in operations such as these. However, the EA observer acknowledged that there will be exceptions to this where the EA may have to be open to the possibility that discharges will increase for a short period where no other options are available. The EA support the process of stakeholder involvement in considering options to achieve balanced decisions.

Some participants felt that such issues as this are difficult to explain to the public, yet this was felt to be crucial to gaining public acceptability and buy-in. Public information, openness and education were suggested as vital components of the process. It was suggested that public education about radioactivity generally, to improve understanding, as well as specific information about LP&LS proposals should be undertaken. Investment in educating/informing the public throughout the decision-making process was thought by one participant to be a wise investment in moving forward, and there was general agreement on this point.

5.4 Site End State

One participant commented that it is important to understand the risk-benefit plan in getting to the LP&LS end point. BNGSL reiterated that if you treat waste the hazard increases through handling, hence it was important to carefully think about how many steps are necessary to get to the end point.

Some participants wanted to know how the LP&LS proposals would fit into the end point for the site overall. One participant suggested that the end point for the site has

already been decided, and that it was being implied that it will be returned to a Brownfield site. However, other participants suggested that some people want the site returned to Greenfield status. Participants felt that the end state could not be decided upon without input from the local community, and that as community consultation has not yet taken place, it was not appropriate to make assumptions about the end state.

The EA commented that the Sellafield end state has not yet been decided upon. The NDA added that they will be carrying out consultation on the end state at the end of 2006, and stakeholder views will be sought on a range of end points. It was felt likely that it would be the degree of Brownfield that would be considered rather than a choice between Brownfield or Greenfield status.

One participant asked how the NDA had reached the conclusion that the Sellafield end state could be nothing other than a Brownfield site when there has been no consultation with local people regarding the end state. The NDA explained that they do not hold the view that the only option is for the end state to be a Brownfield site, but that some studies have been undertaken which raised difficult issues about how to accommodate a Greenfield end state, such as cost and land requirements. Public consultation would allow these issues to be explored.

One participant commented that the way in which the NDA are funded does not provide the flexibility to accommodate the full range of issues that need to be addressed. This was felt to limit the ability to involve stakeholders in all issues.

6 Regulatory Framework

A presentation was provided setting out the issues and challenges posed by the regulatory framework within which remediation of the LP&LS facilities would be undertaken. Participants were asked to consider the following question:

Do you have an appreciation of the constraints and legal requirements applied in screening options for the remediation of the Legacy Ponds & Legacy Silos facilities?

6.1 Regulatory Requirements

The EA observer explained that the units specified in their site discharge authorisations can be regarded as an “umbrella” within which specific plant operations should take place. The EA observer noted that regulatory limits should never in practice be exceeded, and site operations have to be managed so that radioactive discharges are as low as reasonably practicable, by application of Best Practicable Means (BPM) to ensure compliance. The EA observer also explained that limits can also be set to reflect individual plant performance, as standard setting is more flexible than simply applying one “blanket” limit to all plants. The EA recognised that the challenge for industry is to balance process management against these limits.

Participants recognised that a balance has to exist, but one participant commented that it can be very expensive to meet the regulatory limits. The EA observer commented that cost is an inherent consideration in the BPEO assessment process.

One participant asked what the implications of doing nothing are. BNGSL explained that a great deal of work has already been undertaken, for example to remove extraneous equipment and to improve ventilation systems. It was therefore felt by BNGSL that the facilities are currently managed safely. However, BNGSL recognise that there will become a point at which it becomes intolerable not to take additional action due to the age of the structures. In 25 years time, the age of the facilities will mean it is more difficult to manage the risk.

One participant commented that in 25 years time a national energy policy will be in place that will have decided what to do with the waste. However, the EA observer explained that there is a regulatory requirement to remove the waste as soon as possible. The Health and Safety Executive (HSE) wants the situation to be improved as soon as possible. Leaving the waste in place, from a purely safety viewpoint, is therefore not an option.

One participant asked what the consequences would be if the fundamental risk is the loss of containment. BNGSL explained that the consequences would include major doses to people on and off site. The damage to public confidence and to the reputation of BNGSL arguably would place the future of the industry in serious doubt. The costs for dealing with that situation were felt by BNGSL to be far higher than taking pre-emptive action now.

6.2 Classification of Risk

BNGSL commented that the HSE would describe the risk associated with the LP&LS facilities as intolerable, because the wastes are not considered to be stored appropriately.

One participant raised concerns over the fact that if the HSE describe the risk as 'intolerable', local people would ask how it is possible to have reached this kind of situation. This was considered by the participant as a very unacceptable set of circumstances.

BNGSL explained that the NII have raised this issue previously and that it led to legal requirements being placed on BNGSL to progress the work on the LP&LS. It was also explained that a key requirement from the NDA was that the remediation plans meet all legal requirements. However, the solution is not straightforward, which is one reason why it has taken some time to get to this stage, and also why a BPEO consultative approach is helpful.

The NDA participant commented that a great deal of work has been done to manage the risk and more work is planned, all in preparation for decommissioning the facilities.

6.3 Regulator Priority

One participant wanted clarification on the status of the regulators, asking whether there is a 'pecking order' which prioritises which regulators' requirements are most important to comply with. BNGSL explained that all the regulators have requirements, and that while some requirements may be easier to meet than others, all must be complied with.

The issue of international regulation was raised, and a participant enquired as to any international regulator whose requirements override those of the UK regulators. An example was provided of a US supplier intending to begin operations in the UK, whose intention is to continue to comply with US regulatory requirements rather than the UK regulations. BNGSL confirmed that US suppliers would be required to meet UK regulatory requirements for operations taking place in the UK.

BNGSL acknowledged that there are tensions between the different regulatory requirements in the UK, and it was hoped that as the NDA matures, among other things, those tensions might be resolved via transparent processes of dialogue. One participant expressed a concern that it was necessary to wait for the NDA to mature before it would be possible for effective decisions to be made. The EA observer explained that there is a lot of strength and depth to build upon, adding that the regulators have a good working relationship, but that it now needs to be applied to clean-up issues. The NDA participant observed that tension is not necessarily a disadvantage.

Mention was made of EURATOM, as another interested stakeholder. BNGSL confirmed that much work has been done through the Department of Trade and Industry (DTI) to provide information to EURATOM, but the point was made that EURATOM's key driver is to get to a position where BNGSL can demonstrate that all the LP&LS waste has been recovered safely and can be accounted for.

Participants commented that it was difficult to understand the roles and expectations of the different UK regulators, and it was agreed that a short reference document explaining the roles and expectations of each regulator would be helpful.

7 Assessing the Options

Information was presented to stakeholders regarding the various issues taken into account in the BPEO assessment process, in order to evaluate and consider remediation options. The following list of attributes was presented by BNGSL as what BNGSL felt to be the most relevant considerations for inclusion in the Baseline BPEO assessment.

Evaluation Attribute Group	Attribute	Sub-Attribute
Health & Safety	Risk to Workers and the Public	
	Hazard to Workers and the Public	
Environmental Impact	Waste Volumes	ILW Volumes
		Other Waste Volumes
	Effluent Impacts	Liquid
		Aerial
Technical Feasibility	Viability	Maturity of Technology
		Process Complexity
	Flexibility	Re-workability of Product
	Alignment with Discharge Authorisation	
	Conformance with Licence Dates	
Cost	Cost	

Participants were asked to consider the following questions:

Do you agree that the list of attributes is reasonable? Which attributes are of greatest importance? Have any attributes been omitted that are of particular concern?

7.1 Timescales

It was suggested by some participants that timescales should be considered when assessing option choices, as something that might be acceptable for the short term may not be acceptable for the longer term. Timescales for how long an option would be in place, rather than just information on the time required to implement the option, was felt to affect the assessment of option suitability.

Wider context issues were also felt likely to have an impact on decision making, such as new nuclear build or the outcome from the Committee on Radioactive Waste Management (CoRWM) consultations on long-term waste management policy. Failing to wait until everyone is cognisant of all the facts was suggested by one participant as an indication that BNGSL is proceeding too quickly on this matter. It

was suggested by this participant that the issues should be looked at now, but that a decision should be delayed until wider context issues have been decided upon.

Other participants felt there should be more rapid decision making, but felt that there were issues that might necessitate a delay in decision making because of their impact on how to proceed. For example, the type of packages that Nirex will or will not accept in a national repository is a relevant consideration. Some participants felt that it was important to reduce the hazard by removing the wastes from the LP&LS facilities, but that because it was not possible to determine today what the final disposal package should be, as flexible a waste package as possible should be created.

One participant commented that “joined-up thinking” is required from Government so that BNGSL and others can get on with their job.

Another participant commented that while the focus tended to be solely on decommissioning, there was no agreement on the final waste route, at a national or regional level, and that it is difficult to consider options without knowing how they fit into the end point.

The Nirex representative explained that the Government held a consultation around two years ago, under the auspices of the inter-departmental Radioactive Waste Policy Group, and discussed the issue of the waste route. The Group agreed that Government policy remains uncertain, but that the waste packaging specifications issued by Nirex did provide a sensible basis for moving forward. It was clarified that the Nirex packaging standards provide passively safe packages, with some flexibility to accommodate most of the sensible future disposal routes.

Nirex added that the process of providing a Letter of Compliance (LoC) for waste packaging is undertaken under scrutiny from the NII and the EA, with the presumption that if packaging and storage of waste is to be carried out, it should only be undertaken once, without any need for future re-working or re-packaging whatever the end disposal route may be.

The point was made by another participant that as the LP&LS facilities have to be emptied within 20 years, and that as a national repository will not be ready by then, there is a de facto agreement for interim management of the wastes.

7.2 Evaluation Criteria

7.2.1 Health & Safety

One participant felt that the breadth of considerations within the Health and Safety attribute should be expanded. However, BNGSL explained that only those options that could be classified as safe were being considered.

BNGSL commented that Health and Safety risks could change according to the form of intervention chosen, for example increasing risks to workers in the short term to reduce the risk period overall, with the objective of reaching a safe and stable end

point more quickly. However, any transient increase in risk would have to be justified to the regulators.

7.2.2 Environmental Impact

It was suggested that environmental protection was important not just to protect the environment for its own sake, but also in recognition of the fact that the environment is a pathway to human receptors.

The Nirex participant suggested that the issue relates to balancing impacts on the environment today with impacts in the future, and asked that this consideration be included when assessing options for LP&LS remediation.

BNGSL acknowledged that LP&LS remediation cannot be considered in isolation and that the aim is to seek a balance between different considerations.

7.2.3 Technical Feasibility

One participant suggested that issues such as capacity of the supply chain, skills gaps, and the size of the resource pool should be considered within the assessment of Technical Feasibility, as restrictions in these areas would directly impact delivery of the options. Others felt that such issues are a matter of cost, although one participant made the point that there is only a finite resource pool, and therefore a stage could be reached where it proved impossible to recruit sufficient workforce to deliver planned works.

Another participant commented that resourcing should be accommodated within the assessment of Socio-Economic issues, rather than adding to the layers of attributes already under consideration.

7.2.4 Costs

In assessing options, participants felt that time should not be overlooked as an issue when evaluating costs.

Several participants suggested that the Cost attribute also needs to incorporate resources, as well as finance, skills, capacity, resource pool etc., unless this is clearly accounted for within Socio-Economic impacts.

Concerns were raised about double counting, both in terms of addressing time impacts, e.g. in relation to Health & Safety and Cost, and double counting financial costs, e.g. for plant or treatment facilities that might serve a dual purpose on the site and be accounted for in cost analyses for other projects.

Participants generally agreed that it would be better to talk about cost on a relative scale, in units other than pounds, so that people do not get distracted by the large numbers involved. Participants suggested that there was insufficient differentiation

between the costs provided in the briefing pack and that therefore it was difficult to take the cost criteria fully into account when comparing the options.

The Nirex participant commented that the cheaper short-term options actually impose further (handling and treatment) costs in the future, and suggested that it was not possible to fully consider option costs without addressing this issue.

8 The Key Issues

BNGSL explained that while a great deal of research has been carried out into investigating possible options for the LP&LS facilities, there remain a number of potentially controversial issues which the project team specifically wished to explore with stakeholders. A series of questions was posed to aid consideration of the key issues.

8.1 Pre-Emptive Measures

What is the BPEO for managing risks prior to removal of waste from the LP & LS facilities? Should retrievals from the LP & LS facilities be delayed whilst further engineered protective measures are installed or should retrieval be accelerated without any further measures installed? Have we overlooked any options?

8.1.1 Pre-Emptive Measures for Ponds

One participant asked whether the issue of exposure to the elements had been taken into account when considering pre-emptive measures for the ponds. BNGSL explained that extra effluent goes into the Sellafield system because of rainwater addition to the open ponds, and this is accounted for in the site effluent discharges. Therefore, BNGSL wish to focus on “fugitive” emissions during the workshop, that is, emissions that bypass the installed systems.

Asked about the size of emissions to air from the ponds, BNGSL explained that the aerial discharge from the ponds represents a significant proportion of the site’s discharges to air. It was explained that stack discharges and general area discharges are monitored, and that pond emissions are monitored as part of the general area discharges.

Some participants raised concerns about the possibility of aerial emissions leaving the site as “shine”, which will bounce back to ground level beyond the perimeter of the site. Another participant commented that if that were the case, then the emissions would be very well dispersed by the time they reached the surface. BNGSL commented that there are parts of the UK, such as Cornwall, which have such high naturally occurring background levels of activity that they would trigger Sellafield safety controls. Several participants agreed that consideration of such issues depends upon public education and upon putting the risk into context.

Many participants felt that the key issue in relation to the ponds is about continuing to build public confidence in the management of aerial discharges.

One participant queried whether removal of the sludge would increase emissions. BNGSL commented that it is highly likely that this would be the case.

Another participant raised a question about construction of an overbuilding, asking if it would be necessary to lower the water level to install the overbuilding, and if so,

whether this would aid decommissioning. BNGSL explained that the water would remain as a shield and that the overbuilding could be constructed without altering the water level.

The options for construction of the overbuilding were considered by a participant, with reference to other overbuildings that had been ‘pushed’ into position rather than constructed *in situ*. However, BNGSL explained that due to the restrictions in space around the ponds at Sellafield, this type of approach would not be possible. BNGSL also explained that where other overbuildings had been installed at Sellafield, this was to house equipment rather than to cover contaminated materials, and hence worker risks were not comparable.

There were concerns by one participant that any cover installed over the pond might increase the temperature and thereby increase the rate of corrosion within the ponds. BNGSL explained that with the rigid cover and floating balls, the pond would still lose heat naturally, and hence there would not be a particular increase in temperature.

Some participants felt that one advantage of the overbuilding would be the opportunity to control the atmosphere, for example by filtering emissions. However, BNGSL pointed out that control of emissions would only be possible once the overbuilding was installed, and not during installation, which would mean that emissions would continue for 3-5 years until it was built.

Some participants felt that with an overbuilding the public would have more confidence in BNGSL’s approach to remediation. However, the rigid floating cover was considered to reduce the dose both to the public and to workers, whereas an overbuilding was not considered necessarily to benefit workers. In particular, community and trade union representatives felt that construction of an overbuilding was undesirable owing to the radiological risks to workers during construction and the relatively short retrieval programme.

The floating cover was seen to have additional advantages by some participants - with a floating cover it was suggested that a lot of work could be done off-line and you could continue to carry out other projects around it.

Most participants considered that the “Do Nothing” option was not “do nothing” in the conventional sense. It was actually felt to mean “don’t delay the project – get on with it”. In other words, not “do nothing”, but rather “do nothing extra”. It was suggested that re-framing this option would reduce misunderstanding and may help to improve public acceptance.

One participant suggested consideration of other barriers, e.g. relatively safe solvents that could be layered on top of the ponds to reduce the evaporation rate. However, another participant felt that this may not be as easy to remove as a rigid barrier.

Several participants suggested that whilst the technical arguments are understood for taking no further preventative measures (the “Do Nothing” option), consideration should be given to easily implementable options even if these provide little technical

benefit. Implementing such measures would provide public assurance and confidence by demonstrating that BNGSL is “willing to go the extra mile” to safeguard the public, the workforce and the environment. In this context, an overbuilding was felt to be probably disproportionate, but some other measures may be worth exploring.

The floating balls option was felt to be an inappropriate option by a participant who represented a public perspective. It was explained that members of the local community have been calling for a cover for some time. Whatever the technical arguments, they would be unlikely to consider floating balls a serious response by BNGSL.

Ranking of Pre-Emptive Measures for Ponds

One participant suggested that it might be helpful to present these qualitative discussions in a more quantifiable format, to provide a tangible output from discussions. Participants therefore worked as a group to rank the options for the ponds, from 1 (the best performer) to 5 (the worst performer). The results are set out in Table 1, and are based on the discussions presented in section 8.1.

Table 1 Stakeholder Group Ranking of Pre-Emptive Measures for Ponds.

Option	H&S	Environment: Emissions	Environment: Waste Volumes	Cost	Total
Overbuilding	5	1	5	5	16
Rigid Floating Cover	2	2	3	3	10
Wind Breaks	3	3	2	3	11
Floating Balls	4	4	4	3	15
Do Nothing	1	5	1	1	8

The “Do Nothing” option came out as the preferred choice, followed by the option for a Rigid Floating Cover.

The “Do Nothing” option was felt to perform well in terms of Health and Safety, as it does not lead to any increase in worker doses beyond current levels. The overbuilding option was seen as the worst performer in terms of Health and Safety due to the complex nature of the task and the scale of the operation, as well as the time it would take to complete, all serving to increase worker exposures.

Participants felt it was difficult to differentiate the environmental impacts to any measurable extent. However, the group agreed that the overbuilding would probably be the best performer under environmental emissions as it would prevent most aerial

discharges, whereas "do nothing" was felt to be the worst performer as it would do nothing to reduce emissions from current levels.

In terms of waste volumes, the overbuilding was considered to create the greatest amount of secondary waste, albeit of a low activity level, with the floating balls and rigid cover options ranked behind it due to the contact they would have with the contaminated water. "Do nothing" was felt to be the best performer in this respect as it would generate no additional waste.

In terms of cost, it was considered that due to the scale of the project, the overbuilding would be the most expensive and therefore worst-performing option, while "do nothing" would incur no additional costs and would therefore be the best performer. It was not felt possible to differentiate between the other options on a cost basis.¹

8.1.2 Pre-Emptive Measures for Silos

Question: What is the BPEO for managing risks prior to removal of waste from the LP&LS facilities? Should retrievals from the LP&LS facilities be delayed whilst further engineered protective measures are installed or should retrieval be accelerated without any further measures installed?

Some participants enquired about the timescales for emptying the Magnox Swarf Silo in the context of addressing leaks. It was felt that tackling leaks could delay emptying the silo by another ten years, which was felt to be too long to wait. Dealing with the silos was felt to be a time-sensitive issue by some participants.

BNGSL explained that it is important because of the leaks from the silos that both aerial and ground discharges are considered. However, one participant expressed the view that as both silos already have ventilation systems in place, it may not be the best use of discussion time during the workshop to focus on aerial discharges. Another participant supported this view, stating that BNGSL's responsibility was to undertake the technical judgements, whereas the workshop ought to focus on other issues to add to the technical considerations. Most participants felt that management of leaks and the possible migration of ground contamination is the key issue for retaining public confidence in relation to the silos.

BNGSL explained that the liquor in the silo contains a fair amount of activity, and that as it is the liquor that carries the activity into the ground, the intention would be to deal with the liquor first.

The very low rate of lateral spread of contamination due to the geology at the site was felt to negate the need for a barrier by some participants. However, it was recognised that while the spread of the contamination might be restricted, this results in a more concentrated zone of contamination, which presents greater challenges than a more dilute ground contamination of greater extent. One participant felt that as long as the

¹ Day 1 of the workshop concluded at approximately this point.

waste is contained, leaving it in the ground might nonetheless represent the safest solution.

Others felt this issue was more about public perception. It was suggested that if BNGSL are seen to adopt the cheapest option, allowing more contamination to take place, it sends a message to the public that the end point should be a contaminated site - clean above ground but not below ground. It was felt by some community representatives that this would leave an unacceptable stigma for the area. However, one participant felt that it would be immoral to spend large amounts of money and expose workers to greater risks during clean-up, simply to satisfy the expectations of the public.

Concerns were raised by some participants that public acceptability of options may relate to long-term confidence and the way that choices are communicated. It was suggested that one issue that affects long-term confidence is that the funding could run out so that the job cannot be finished. In this respect, dealing with the waste completely, as early as possible, was seen to be preferable. Others felt that if the issue was properly explained to the public, options that left some work until the future would be likely to prove acceptable.

One participant asked whether any of the options would create employment opportunities for the local community. BNGSL explained that the options likely to generate most employment would also be the ones with a higher level of risk to workers.

The worker dose issue was raised by several participants: it was felt unacceptable to increase worker dose, with extra workers being exposed to implement an option which had little benefit. However, other participants felt that some action was necessary in order to increase confidence and gain public acceptance.

One participant suggested that engineering solutions to tackle the leaks should be considered. However, there was a generally accepted view that the focus for BNGSL should be on removal of the hazard (source term) rather than abating the impact – in other words to proceed with emptying the facilities as soon as practicable. Participants thought that any further abatement of silo aerial emissions was a BPM issue and not a subject for BPEO assessment.

Some participants suggested that where a silo has numerous discrete waste compartments and not all of them are leaking, BNGSL should target the leaking ones as being the greatest hazard.

Some felt that it might be better to invest in reducing the radioactivity of the water in the first instance, and that as the compartments are interconnected, hydraulic barriers should be installed between the compartments.

One participant suggested, and others agreed, that in practice, BNGSL would start with the low risk tasks to build confidence and to learn prior to progressing to the higher risk tasks.

One participant felt that as the site is so contained, it would be difficult to convince experts that the groundwater flow will not be affected through the introduction of underground measures such as ground freezing. The same participant asked whether freezing the waste inside the silo was an option to aid remediation.

One participant noted that where it is known that there is ground contamination, £millions could be spent in addressing localised problems in isolation which could be more efficiently and effectively dealt with holistically. This participant suggested that a modest spend on ground remediation may be acceptable in the short term, if the whole site was to be remediated later. However, another participant felt that it would be better not to have another issue to deal with in 20 years time.

There was a call from several participants for BNGSL to identify how they were intending to proceed from the current situation to the end state of the site. Participants wanted to see a more carefully mapped out and visible process of how LP&LS remediation fits into the future of the site. In particular, participants asked for a clear understanding of the bigger picture regarding ground contamination. Information was felt to be needed on how retrieval is not going to make the situation worse, what is the plan for remediating the land, and where this is provided for in the business plan.

Discussion centred on the need for removing the source term rather than putting effort into complex ground barriers, providing that the plan is to carry on quickly with facility and contaminated ground decommissioning. Once again, doing “nothing extra” would not be perceived well by the community. This would be seen to be the cheap option driven by the wrong priorities. Participants gave strong encouragement to BNGSL to consider practical measures such as reducing liquor activity, targeting potentially leaking compartments first, or hydraulically isolating compartments to reduce the potential for further leakage which, if it occurred, would be a risk to reputation as well as to the environment and human health.

8.2 Buffer Storage Prior to Treatment

What is the BPEO for allowing timely construction of waste treatment facilities? Should retrieved material be stored whilst final treatment facilities are constructed or should retrieval be delayed until they are available?

One participant enquired about the likelihood of any treatment facilities built at Sellafield to accommodate the LP&LS wastes developing into a national treatment centre, so that radioactive waste would be brought to Sellafield from all over the country for treatment. It was explained that the LP&LS sludges are very different from other wastes, and that while it might be possible to adapt the process to accommodate other types of sludge (from power stations around the country, for example), transporting sludges would itself present a significant challenge. It was considered unlikely by BNGSL and regulators that transport regulations could be met, as it would not be possible to predict how the sludges would perform in an accident, which is a fundamental requirement of the transport safety case.

The participant commented that if Sellafield did become a national treatment centre, its acceptability would be likely to depend on how much waste was being transported and then whether or not the treated wastes were returned to their source or left at Sellafield. A treatment centre for Sellafield waste alone was deemed most likely to gain public acceptance.

BNGSL commented that the treatment centre would also be unlikely to represent a commercial opportunity, although sharing of technical knowledge is already taking place with other sites.

One participant suggested that the choice of action in dealing with the sludges relates to the speed of delivery, and that doing the job faster would be more expensive. Participants recognised that there were benefits in dealing with the sludges quickly. BNGSL explained that getting the sludge out of the pond earlier is the only way to meet the NII licence specification, which places importance on risk reduction. The NDA representative added that the sludge coats everything in the ponds and that it is not possible to remove any of the other items in the ponds until the sludge is removed.

BNGSL were asked if sludges could be removed more quickly if a buffer store was constructed. BNGSL confirmed this, and also explained that emissions from the pond would not change according to the option adopted, although with some measures emissions would take place for a longer period.

Some participants expressed concern that once the sludge has been moved into tanks, there is a chance that it will stay there for a long period again so that an interim measure becomes a long-term one, and could eventually create new problems. BNGSL explained that funding priorities, the lifecycle plan, and a legal instrument from the NII that requires 80% of sludges to be converted into passively safe form by 2020, ensure that such an eventuality cannot arise.

Some participants suggested that this issue comes down to public perception, and a possible lack of public trust in BNGSL's ability to deliver. These participants felt that BNGSL will be judged on what has happened in the past, and suggested that clear timescales for remediation should be agreed by the NDA, in order to provide public reassurance. This was identified by one participant as a process that should be implemented on a national level.

The NDA participant commented that by 2020 the vast majority of High Level Waste on the Sellafield site will be in glass form. The next greatest hazard on the site is the LP&LS complex and the NII requires the LP&LS facilities to be remediated by 2020. The work programmes reflect this.

Most participants had no objection to transferring the sludge to buffer storage so that all the license instruments would be fulfilled, and it was felt that the selection of the buffer storage option prior to treatment is not an issue for consideration using BPEO methodology, but rather that it is a BPM question that is justified on risk/benefit considerations.

BNGSL were encouraged to reduce both the hazard and the risk associated with the LP&LS facilities as soon as possible.

8.3 Packaging Specification

What is the BPEO for the waste package form? Should the legacy wastes be processed into products that (a) meet the Nirex packaging specification for direct disposal to a repository or (b) are basically stabilised or (c) are minimally processed where basically stabilised or minimally processed products would require re-work to make them disposable to a repository?

A community representative felt that if waste is ready for disposal, treated and in buffer storage, this was considered to send out a good message that waste can be managed and monitored. This participant suggested that this would give greater confidence to the public and other stakeholders.

Participants asked if BNGSL's aim was to achieve a basically stabilised and packaged waste form with a LoC from Nirex. BNGSL confirmed this, but explained that there was uncertainty in the situation until the CoRWM announcement on long-term waste management options.

The Nirex participant added that the likely proportion of a national repository to be taken up by LP&LS wastes would be around 20%, and that with 30,000 packages already at Sellafield, Nirex would feel uncomfortable lowering standards for any waste.

The Nirex participant explained that they set their waste packaging standards based on disposal requirements, and do not compromise in order to endorse a waste product that does not meet them. If there is a step towards a disposal package, Nirex might

look at it, but Nirex would not endorse any form of stabilisation that would leave the waste requiring extensive subsequent re-treatment for eventual disposal.

The Nirex participant also noted that at a meeting of regulatory stakeholders in November 2003, it was agreed that Interim Safe Storage (ISS) was not an appropriate way forward. The Nirex participant explained that unless there is an absolute driver for something else, the whole industry should be working towards fully stabilised packages, acceptable to Nirex for disposal.

The EA observer had previously explained on Day 1 of the workshop that the EA has been actively engaged over the past 2-3 years on trying to resolve the waste packaging issue, adding that as the LP&LS wastes are not straight forward and represent a significant proportion of the Nirex inventory, the decisions that are taken about them are very important and complex.

Some participants felt that options should not be foreclosed, but that waste packaging should offer flexibility for wastes to be reworked in the future. Others felt that waste volumes would increase by treating and reworking the waste, but asked what the real benefit would be from greater flexibility.

Some participants asked that if time pressure is driving BNGSL to consider a two-step process for waste treatment and packaging, could the investment required for the second step be more usefully employed in doubling capacity for a one-step process.

A local authority preference is to produce a basically stabilised product, if that helps to reduce overall risk more rapidly, in contrast to a slower retrieval process to allow sorting/segregation to produce a fully stabilised package. BNGSL need to carefully consider the benefit of a reduced risk reduction programme duration against the possible drawback of having to re-work the product at a later stage.

In general terms, participants noted that they would like to see a clear end point for wastes. If there is a need to produce an interim product, there must be a credible re-work plan to produce a final disposal product. In other words, an interim product can only be a step in a longer journey and not an end point in itself. Some participants felt that if there was an indication of where the waste will end up, this would help in considering LP&LS remediation options. One participant suggested that the CoRWM advice – due this summer - is needed, and no decisions will be possible until then.

The Nirex participant suggested that the Nirex packaging standards should not be readdressed, as they provide passively safe packages and flexibility to accommodate most of the sensible future disposal options. This view was supported by some other participants.

One participant made a comparison with work taking place at Sellafield to deal with Miscellaneous Beta-Gamma Waste (MBGW): this participant explained that the MBGW is not conditioned, so that it will be possible to look at long-term management requirements in the future and condition it accordingly. This was felt to provide an example of an approach that could be taken for the LP&LS wastes.

There were seen to be advantages in sorting the waste prior to packaging. However, several participants cautioned that there may not be enough time to sort the waste. Time was seen as a key issue of significance by several participants.

One participant suggested that while current policy is to package wastes in a form suitable for disposal in a national deep repository, perhaps the repository could instead be designed to fit the packaging. The Nirex participant suggested that this was already the case, with 30,000 conditioned packages already at Sellafield waiting to go into the repository.

One participant argued that products must conform to transport regulations and be transportable away from Sellafield. If this requires characterisation prior to forming products, then this should be undertaken. If, by contrast, a basically stabilised package that cannot be transported off-site is the preferred end point, then the implication is that the future national repository must be at Sellafield. If this is the case, then a very clear communications action is required of the NDA so that this is properly explained to the public.

One participant suggested that the packaging issue fundamentally relates to how you communicate it. The participant suggested that innovative thinking is required about communications. Other participants agreed that the wider public would be interested in this, but that it is a highly technical and detailed issue. One participant suggested that the challenge lies in pitching the problem appropriately. It was postulated that while the community might want things passively stored and quickly, the “devil is in the detail”, and it was felt that stakeholders would have questions about risk, hazard, timescale, the merit of delay, consequences, volumes, waste types, and so on, once proposals had been developed to a stage worthy of wider debate.

8.4 Effluent Management

What is the BPEO for managing the LP&LS effluent streams? Is use of management tools, engineering tools or a combination of management and engineering tools preferred?

There was considerable discussion in relation to site effluent treatment and the UK Discharge Strategy on Day 2 of the workshop. On Day 1, the EA observer (who was not able to be present on Day 2) had noted that within the overall context of Government Policy, the EA recognise that it has to be open to the possibility that discharges may need to increase for a short period where no other options are available. A full justification would have to be made to achieve a balance of decisions. Other participants concurred with this view.

Participants understood that international commitments such as the Oslo-Paris (OSPAR) Convention apply, and that if there is a regulatory limit it must be adhered to. However, participants also felt that if the overall site limit was not breached or altered, local (i.e. individual plant) variations to limits might be acceptable.

One participant suggested that BNGSL has to maximise use of existing facilities. For the future, on the basis that there are a number of discrete site facilities, it is preferable to avoid dependence on one centralised treatment plant for the whole site. However, it was suggested by another participant that a local SIXEP (effluent treatment plant) for each facility would be very expensive and not necessary.

One participant suggested that a treatment plant that was mobile to other parts of the site might be useful, and that this would be especially relevant for phased decommissioning. However, it was also recognised that chemical characteristics of waste streams differ and a single mobile unit may not be technically feasible.

Participants understood from presentations that new Local Effluent Treatment Plants (LETTPs) had similar benefits to reinforcing existing facilities, but that the implementation timescales of the former would be longer. Based on seemingly identical benefits, quicker implementation and the lower costs involved, the preference was for reinforcement of the existing facilities.

The NDA participant noted that the NDA requires the most efficient/cost effective use of existing facilities, but that when these require replacement, the NDA supports the use of local treatment as this reduces individual project dependency on the site infrastructure and central facilities. These local facilities would be relatively small plants and not on the scale of SIXEP. The participants acknowledged the risk of over-reliance on SIXEP, and there was strong encouragement to consider some of the longer term benefits of developing new LETTPs through more integrated site-wide thinking.

BNGSL need to consider future infrastructure requirements – the plan should include the next stages in site clean-up and incorporate flexibility in any plans for new facilities. For example, one participant was concerned that the existing drainage system might not be able to cope with additional treatment facilities. Overall, most participants felt that facility decommissioning should not be looked at in isolation, but that it consider wider issues, for example ground remediation.

Some community representatives suggested that the larger socio-economic picture – BNGSL's socio-economic responsibilities – should be considered in the BPEO study. LP&LS remediation was felt to bring potential new opportunities for the local economy. Sourcing some element of the LP&LS remediation material needs locally would cut down the risk on supply, giving BNGSL greater control of the supply chain and provide local community benefits.

One participant noted that the Sellafield integrated waste strategy should look beyond Sellafield and be nationally focused. However, another participant cautioned that when considering socio-economic opportunities, there may be political drivers to prevent the creation, or transferral, of opportunities in West Cumbria, which would be seen as taking opportunities from elsewhere. Others felt that as it is local people who may have to accommodate the national repository, there should be associated local benefits.

There was a call from several individuals for help in identifying how BNGSL intend to proceed from this point to the end state of the site - in other words, a mapped out process of how LP&LS remediation ultimately fits into the bigger Sellafield decommissioning picture. One participant explained that the local community has the impression that the site will be returned to a Greenfield state, and that the plans for the LP&LS facilities should therefore be working towards this goal. Not all participants concurred with this view, but all agreed that clarity was required.

9 Summary and Concluding Remarks

Section 9.1 provides a summary by the independent facilitation team of key points that arose in workshop plenary discussions between stakeholders and BNGSL, while section 9.2 provides a record of Day 2 participants' own concluding remarks.

9.1 Summary Discussion

In plenary discussion, the workshop participants said they felt able to assess the broad management options for LP&LS facilities without undertaking a detailed examination of option scoring and weighting. While option scoring and weighting is felt to be important for specific project-level BPEO studies, the more strategic overview undertaken at this workshop was concerned with broader issues and principles. Some participants expressed a willingness and desire to provide a more detailed input to the project-specific BPEO studies in due course.

Participants were strongly of the view that the LP&LS aims and objectives should be assessed in the wider context of the national decommissioning and radioactive waste management policy development in general, and the Sellafield site end point discussions in particular. The sequence of events, and their timing, that move Sellafield to its intended end point need to be more carefully articulated. There are expectations in the local community that Sellafield must be returned to a Greenfield site and not a Brownfield site under permanent institutional control. Stakeholders present did not necessarily support this view, but felt that the NDA needs to clarify the overall plan, the sequential steps involved, and the commitment to funding the programme. There was a need for public reassurance at a national and local level.

It was suggested by several participants, including the EA observer on Day 1, that although Government policy is that there should be a continued progressive reduction in site discharges, including those from operations such as the LP&LS remediation, there may be a longer term beneficial gain in allowing higher emissions in the short term where this could be justified. Discharges should remain within site authorisations, but short-term increases from individual plants may be acceptable if lower emissions in the long-term result. The EA observer indicated that although Government policy drives their own policy, in line with the UK Discharge Strategy, there might be exceptions to this where the EA has to be open to the possibility that discharges will increase for a short period where no other options are available and this approach is justified.

All participants expressed a concern about the level of demand being placed on stakeholders to assist the wide range of site consultation activities that were planned. It was felt that improved co-ordination, more notice, and broadening stakeholder representation would help. In addition, the issue of possible funding for local stakeholders providing input to issues of national strategic importance requires consideration. Quality stakeholder input will only be obtained if it is funded correctly. There was a grievance that local stakeholders, funded by local taxpayers, are expected to underwrite the national debate. One participant expressed the view

that “consultation without the ability to respond is just another form of management”, and it was noted that in parts of Europe, stakeholders are funded to be able to participate meaningfully.

Nevertheless, participants noted that they would like to become involved in project BPEO assessments, but they cannot resource this themselves. One approach would be to consider involving selected technically qualified stakeholders in project optioneering workshops.

There was a Trade Union concern that any new Site Management Company (SMC) will rely upon faster programmes using reduced resources with potentially detrimental effects. Other participants reported that a key local community concern is the long-term future of the workforce. The stop-start nature of LP&LS funding fails to set the correct business environment for Tier 2 companies to relocate and invest. BNGSL therefore needs to consider the socio-economic issues, such as the availability of skills and resources to implement a solution.

Because there are strong drivers to empty the LP&LS facilities within 20 years, before a national repository is available, participants agreed that the temporary management of these wastes might be necessary on a balance of risks approach. The participants believed it was appropriate for BNGSL to make this argument with the objective of reducing the risk in the facilities as soon as possible.

However, some participants wanted to know what the overall risk-benefit plan is. The example was provided that if you treat waste, the hazard increases through handling, and hence thought needs to be given as to how many steps are required to reach the final goal. Multiple handling of waste should be avoided wherever possible.

In assessing options it was felt that hazard removal is a priority and risk reduction per pound spent is a key measure. Also, time should not be overlooked as an issue when evaluating costs, and the Cost attribute needs to account for skills, employment capacity, resource pool, etc., unless these are clearly accounted for within the consideration of socio-economic impacts. These issues were raised by several members of the group.

Concerns were also raised about double counting, both in terms of addressing time impacts, e.g. in relation to Health & Safety and Cost, and double counting financial costs, e.g. for plant or treatment facilities that might serve a dual purpose on the site and be accounted for elsewhere.

9.2 Participants’ Concluding Remarks

In the concluding session, participants were asked to sum up the key points that had emerged from discussions from their own perspective. These can be summarised as follows:

- All participants said that they had valued the opportunity to take part in the workshop and had found the experience to be worthwhile and the discussions very

good. Those participants that were only able to attend for one day tended to feel, however, that some opportunities had been lost in doing so. All participants expressed a hope that the workshop represented the first step in an ongoing process of consultation, and that stakeholder involvement would remain a key part of the decision-making process for the LP&LS remediation. Hopes were expressed that BNGSL will now do their part and actively reflect on discussions from the workshops.

- Participants felt that the discussions that took place had been at quite a high level for good reason, and most commented that the level had been pitched just right, but it was stated that proof of the value of the process would be when the detailed option evaluation takes place.
- It was suggested that the level of information in the presentations would be too technical for some participants and that on widening the consultation, materials should be tailored to suit the different audiences. It was felt that more of a balance should be aimed for between socio-economic considerations and technical considerations.
- Recognising there had been considerable expertise in the workshop, it was suggested that it would be disappointing if BNGSL failed to take advantage fully. It was also felt to be important for the local community to see full advantage being taken.
- It was considered that the size and range of stakeholders had been just right for the workshop. It was suggested that future events should avoid larger numbers as this can inhibit discussion, and that with a group size of this calibre, the debate can be moved forward effectively.
- However, the point was made that there is a large gap between involving representatives for the community and actually getting community involvement in stakeholder dialogue. It was recommended that actual community stakeholders should be identified and invited to participate in future consultations.
- Participants felt that they had provided detailed feedback to BNGSL on a range of issues. Going forward it was felt that transparency is the only option, and hence stakeholder dialogue such as this should continue to form a key role in the LP&LS projects.
- Caution was also raised regarding timescales. One participant commented that project timescales have been seen to slip at the national Low Level Waste disposal facility at Drigg. It was felt important to ensure that implementation timescales are met with the LP&LS remediation.
- The Nirex participant expressed thanks for the invitation to participate. The Nirex participant considered it important that everyone understands what they are thinking about waste end routes, and offered to support future BNGSL stakeholder dialogue.

BNGSL thanked all participants for their time and contribution to the LP&LS Baseline BPEO study, and explained that their intention was to continue to involve stakeholders as part of an iterative process in the identification of the BPEO. BNGSL described a number of means that could be adopted to promote ongoing stakeholder engagement, including wider web-based consultation and the possibility of issuing written project updates on a periodic basis, so that stakeholders are able to track the incorporation of their views into the overall project plans and keep pace with project progress. The next stage of stakeholder engagement for the LP&LS projects will be the circulation of the workshop report to participants to check that the report is a fair representation of workshop discussions, prior to any wider distribution.

Appendix A Glossary of Terms

ALARP	As Low As Reasonably Practicable. Measures necessary to avert risk must be taken until or unless the cost of those measures, whether in money, time or resource, is grossly disproportionate to the risk which would thereby be averted. When this point is reached, the measures taken are described as ALARP.
Cladding	The material (aluminium or magnesium alloy) used to sheath metallic uranium fuel to increase heat transfer into the reactor carrier gas stream. When the cladding is removed from the fuel during reprocessing (an act known as ‘decanning’), it breaks off in curled fragments known as ‘swarf’ due to a similarity to the material produced when drilling metals.
Decanning	The act of removing the cladding from fuel rods.
Decommissioning	Decommissioning is the removal of plant and equipment and, wherever possible, a reduction in the area occupied by a facility. Facilities that have been decommissioned will be out of service with adequate regard for the health and safety of workers and the public and the protection of the environment.
EA	The Environment Agency, responsible for regulating both radioactive and conventional discharges and other waste movements from the Sellafield site.
Government Policy	Government policy on the management of radioactive waste is set out in Command Paper Cmd 2919. Key principles are that the burden of nuclear waste should not be left to future generations and that waste should be packaged for final disposal wherever possible. Government policy on the disposal of ILW is under review, but is currently based on the use of an underground repository.
Graphite	Graphite is a component of legacy MBGW. It is used in several applications within nuclear reactors. In the context of the LP&LS projects, it derives mainly from assemblies used to carry isotope cartridges in the Windscale Pile Reactors and from components of some early Magnox reactor fuel assemblies.

Hazard	A factor that has the potential to cause harm to an individual or the environment. For example, the radioactivity in the LP&LS sludge is a hazard. Hazard is usually expressed by means of a Hazard Indicator, which is a measure that depends upon form, toxicity and the 'control' required to ensure that the hazard is stored safely.
ILW	Intermediate-level waste is waste having radioactivity levels above the maximum for waste that is acceptable for disposal at the low-level waste (LLW) repository at Drigg. The upper bound corresponds to the maximum activity acceptable for disposal in a facility for non-heat generating wastes, and is set largely by consideration of heat generation rates.
Letter of Compliance (LoC)	Used to give the producers of nuclear waste confidence that their waste packages will be acceptable for repository disposal when the repository becomes available. The LoC is only issued when Nirex have been satisfied that the packages will meet current repository specifications. The regulators require a LoC to be obtained before they will licence the relevant process. The LoC was previously known as the 'Letter of Comfort'.
Life Cycle Baseline	The Sellafield LCBL sets out the whole-life management strategy for the site, including decommissioning and site restoration. It will continue to develop over a period of several years and will be reviewed and updated on an annual basis.
Liquor	Radioactively contaminated liquid, generally referring to the liquid in the silos.
Magnox Cladding (swarf)	The magnesium alloy used to sheath metallic uranium fuel to increase heat transfer into the reactor carrier gas stream. When the cladding is removed from the fuel during reprocessing (an act known as 'decanning'), it breaks off in curled fragments known as 'swarf' due to a similarity to the material produced when drilling metals.
Magnox Fuel	The fuel for Magnox nuclear reactors takes the form of cylindrical rods of metallic uranium 'clad' in a sheath of magnesium alloy. The term Magnox is a trade name, derived from the properties of the alloy (Magnesium Non-Oxidising) used for the cladding.

MBGW	Miscellaneous Beta/Gamma Waste. MBGW is in effect radioactively contaminated technological scrap. Modern arisings are principally redundant processing equipment, but legacy materials include other operational wastes such as contaminated protective clothing and cleaning materials. MBGW is characterised by the fact that it contains relatively little or no radioactivity derived directly from the reactor fuel cycle.
NDA	The Nuclear Decommissioning Authority, owner of - and responsible for – the decommissioning of all UK civil public nuclear sites. The NDA is funded by the Department of Trade and Industry (DTI).
NII	The Nuclear Installations Inspectorate, part of the Health and Safety Executive (HSE) and responsible for regulating nuclear sites to ensure that they are operated in a way that is safe for both workers and the public.
Nirex	UK Nirex Ltd, who are developing the underground repository design concept and packaging specifications for the final disposal of ILW in the UK. Nirex administer the Letter of Compliance process.
Regulators	In this context, principally EA and NII. Nirex is not a regulator.
Repository	The term used for the proposed underground storage vault to be used for the disposal of UK ILW. The design concept for the repository is owned and developed by Nirex.
Risk	The chance that something adverse will happen. For example, due to the age of the LP&LS facilities, continued storage of radioactive sludge in the facilities carries risk above new storage.
Sludge	<p>For the Windscale Pile Fuel Storage Pond, sludge is a mixture of debris arising from fuel corrosion, a variety of metallic corrosion products and bio-organic material such as algae, guano and wind-blown debris. Together these form a sludge material that is relatively mobile when disturbed, but also settles to form a bed of material.</p> <p>For the Magnox fuel storage ponds and cladding silo, sludge arises from corrosion of Magnox fuel and cladding, and consists of magnesium hydroxide and a small proportion of uranium oxide. The consistency may vary from firm clay to that of ‘porridge’ depending on water content, which varies widely.</p>

Stable and Dry	Term used to describe the end point of the current project. It will essentially result in the removal from the LP&LS facilities of bulk waste and liquor. Radioactive material adhering to walls of the facilities will either be removed or fixed to a point where forced ventilation systems are not necessarily required. This endpoint will conform to the current Sellafield Site Licence Conditions and, in particular, those that pertain to the control and containment of radioactive material and radioactive waste.
Swarf	When the cladding is removed from the fuel during reprocessing (an act known as ‘decanning’), The curled fragments produced with cladding is removed from the fuel during reprocessing. Called ‘swarf’ due to a similarity to the material produced when drilling metals.

Appendix B Workshop Agenda

HIGH LEVEL OPTIONS FOR THE REMEDIATION OF THE LEGACY PONDS & LEGACY SILOS

Stakeholder Consultation Workshop

Ennerdale Country House Hotel

13 December 2005, 1000hrs – 14 December 2005, 1300 hrs

Outline Agenda

Tuesday 13 December 2005

0930 Arrivals and Refreshments

1000 WELCOME

BNGSL

- Introductions and General Background

1005 - 1025 INTRODUCTIONS

Dr Ray Kemp, Galson Sciences Limited – Chair / Facilitator

- Establishing aims/purpose of the workshop
- Explaining process and agenda
- Clarifying participants' expectations

1025 - 1125 BACKGROUND TO LEGACY PONDS & SILOS ISSUES

BNGSL

- Presentation illustrating the background to the Legacy Ponds & Silos (LP & LS) issues
- Setting the context - need, minimum requirements, BNGSL understanding of regulatory standards & legal requirements, BNGSL approach to stakeholder engagement, other issues

1125 - 1145 Refreshment Break

1145 - 1230 BACKGROUND TO LEGACY PONDS & SILOS ISSUES (cont.)
- Opportunity for discussion and clarification

1230 - 1315 Lunch

1315 - 1415 OUTLINE OF THE PRELIMINARY OPTIONS ASSESSMENT

BNGSL

- Explaining the options identification and assessment process including review criteria
- Illustration by review of LP&LS representative facility
- Interactive facilitated discussion

1415 - 1515 ASSESSING THE OPTIONS

BNGSL

- Explaining how the options were assessed
- Advantages and disadvantages of different options
- Review of key differences between the options
- Opportunity for discussion and clarification

1500 - 1520 Refreshment Break

1520 - 1650 FACILITATED GROUP DISCUSSIONS

- Stakeholder consideration of the issues in plenary session or in break-out groups depending on numbers of participants

1650 - 1700 Close of Workshop Day 1

Wednesday 14 December 2005

0845 Arrivals and Refreshments

0900 – 0915 RECAP

0915 – 1015 FACILITATED GROUP DISCUSSION (cont.)

- Stakeholder consideration of the issues

1015 – 1100 SUMMARY GROUP DISCUSSION

Dr Ray Kemp, Galson Sciences Limited – Chair / Facilitator

- Plenary discussion and summary of issues raised in discussions

1100 - 1120 Refreshment Break

1120 - 1200 CONCLUDING DISCUSSIONS AND COMMENTS

Dr Ray Kemp, Galson Sciences Limited – Chair / Facilitator

- Overview from Chair
- Individual summaries from participants and BNGSL
- BNGSL indication of ‘next steps’

1200 - 1215 CLOSE AND THANK YOU

1215 – 1300 LUNCH

Appendix C List of Participants

C.1 Day 1 Participants

Organisation	Name
Cumbria County Council	Cllr Tim Knowles
Copeland Borough Council	David Davies
West Cumbria Site Stakeholder Group	Ron Hargreaves Ranald Stewart
Nuclear Decommissioning Authority	Stephen Sharpe
Environment Agency	Peter Orr
Nirex	Steve Barlow
6 Parish Council Group	David Cook
Supply chain	Sue Hearn
Westlakes Scientific Consulting	Dr Steve Bradley
Sellafield Trade Unions	Howard Rooms
BNGSL, Security Manager LP&LS	Susan Burns

C.2 Day 2 Participants

Organisation	Name
Allerdale Borough Council	Cllr C McCarron-Holmes
Copeland Borough Council	Cllr E Woodburn
Cumbria County Council and Nuclear Legacy Advisory Forum (NuLeAF)	John Hetherington
Copeland Borough Council	David Davies
West Cumbria Site Stakeholder Group	Ron Hargreaves
Nuclear Decommissioning Authority	Stephen Sharpe
Nirex	Steve Barlow
6 Parish Council Group	David Cook
Westlakes Scientific Consulting	Dr Steve Bradley
Sellafield Trade Unions	Howard Rooms
BNGSL, Security Manager LP&LS	Susan Burns

C.3 Invitees Who Were Unable to Attend

Allerdale Borough Council	Ian Pain
Copeland Constituency	Carl Carter
Workington Constituency	Nick Hardy
Nuclear Installations Inspectorate	Neil Blundell Glyn Davies
Office for Civil Nuclear Security	Dave Clarke
Westlakes Renaissance	Rosie Mathisen
Cumbrians Opposed to a Radioactive Environment	Martin Forwood
Sellafield Staff Unions	Peter Clements
Greenpeace	Jean McSorley
Friends of the Earth	Jill Perry

Appendix D Stakeholder Feedback

The following sections summarise participants' feedback on the LP&LS consultation activity. The information is taken from nine completed feedback forms received after the workshop.

Workshop Expectations

- The majority of participants felt that all or most of their expectations had been met.
- The remaining participants felt that only some of their expectations had been met.
- Stakeholder expectations were to gain more information and clarity on what was being considered for the Legacy Ponds and Legacy Silos, to participate in discussion with stakeholders on the issues and implications, to inform BNGSL of stakeholder perspectives, to identify remediation options, and to gain knowledge of the decision-making/BPEO process.
- Where expectations had not been met fully, respondents suggested this was due to only being able to attend part of the event as a result of other demands; that it may have been useful to spend more time on the detail of the options and issues rather than general discussion; but also that the level of technical detail was difficult for a lay audience to understand.

Presentations

- All respondents found the presentations easy to understand.
- Almost all respondents considered that the right amount of information had been provided (only one attendee felt that the amount of information was not right).
- All respondents felt that there had been adequate opportunities to ask questions.
- All but one respondent felt that presentations had been worthwhile (one was unsure).
- One respondent suggested that putting the discussions into the broader context might have been helpful, as it was felt that considering the detail could only be done with an understanding of wider issues. It was also recognised that it is difficult to get the balance between providing information and overview of thought process and still obtain an input from the audience.

Group Discussions

- All but one respondent considered that the environment had been conducive for discussions (one was not sure).
- All respondents felt there had been sufficient information to enable them to take part in the discussions.
- All but one respondent felt there had been sufficient support during the discussion sessions.
- No respondent felt that the discussions had not been worthwhile. One respondent added that the discussions had been "very" worthwhile.

- Respondents commented as follows: the discussions might have been enhanced by a wider representative stakeholder group although the group size was seen as ideal for such discussions; that some attendees left before the end of discussions was seen as a disadvantage, due to the loss of input; although sufficient information had been provided to enable discussion, it could be difficult to ‘sort the wheat from the chaff’; the open manner in which discussions were facilitated was praised.

Information Briefing Packs

- All respondents found the information in the briefing packs easy to understand.
- More than half of the respondents felt that sufficient information had been sent out to enable them to prepare for the discussions, while two disagreed.
- All respondents found the information in the briefing packs relevant.
- More than half of the respondents felt they had had enough time to prepare for the workshop, while two disagreed.
- It was suggested that more time to prepare would have been helpful, and that though the information had been easy to understand, this depends on the audience and on their expectations.
- One respondent commented that the information provided in the packs might not have been sufficient if the speakers had relied upon it. However, it was recognised that there were security implications associated with providing more detailed information in the packs and it was felt that much more information had been made available at the meeting.

General Comments

- Respondents felt this had been a worthwhile activity and all hoped it would be the first in an ongoing process of stakeholder involvement regarding this issue and other BNGSL issues.
- It was suggested that a follow-up session be run to show how stakeholder feedback has been utilised.
- Concern was raised as to who are classed as stakeholders.
- There was a request for invitations to future events to be emailed as well as posted, and for session times to be 9am – 4pm, rather than later.
- It was suggested that the venue could have been improved with better lighting and that some of the presentations had been a little too quiet.

Additional Comments

- The following additional comments were added to the feedback forms by respondents:

“BNG are to be congratulated for initiating such an open and transparent discussion. The start of a fruitful process.”

“Discussion of issues was excellent. Didn’t really get into the detail of BPEO but BNG must have got lots of relevant views and feedback to inform their BPEO deliberations.”

“Keep the process going.”

“On the whole I thought it was very good.”

- Following the issue of the draft workshop report, one participant commented:

“Congrats to the team in getting such a complicated session well documented.”