



# Strategy for the Management of Materials and Samples

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Credible and Preferred Options Gate A/B

February 2020



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## 1 Executive summary

### Background

The NDA group is creating, storing and maintaining a significant number of physical materials and samples such as active and inactive simulant waste forms, steel and graphite samples.

Materials and samples and their supporting records are critical to NDA. Materials and samples provide the technical underpinning for waste management, decommissioning and remediation activities, support safety cases and inform asset management. In addition, research and development programmes across the NDA group depend on the availability of these, often unique samples.

The NDA's strategic objective for the management of NDA-owned materials and samples is to:

- ensure that appropriate materials and samples are retained and managed by the NDA group;
- ensure that information and knowledge about materials and samples is retained and managed by the NDA group; and
- enable the sharing of materials and samples and their supporting information within the NDA group and, where appropriate, to third parties such as universities.

### Approach

This paper summarises credible options identified to meet this strategic objective as screened by NDA's Value Framework. Options have been developed through wide stakeholder engagement covering the NDA group and third party stakeholders.

The preferred option for this strategy is to:

- Retain materials and samples that have either a specific purpose or a perceived value to the NDA group.
- Regularly assess materials and samples and make an informed decision about their value in particular focussing on legal or regulatory requirements to keep samples, use in underpinning NDA's mission, underpinning safety cases, underpinning strategy or letters of compliance and the cost or burden associated with retention.



## Strategy for the Management of Materials and Samples

- Develop a better understanding of the materials and samples stored by the NDA group by periodic inventory collation.
- Make the inventory accessible to NDA group and, where value has been clearly demonstrated, other SLCs and third parties.
- Safely store and manage materials and samples at appropriate locations, as determined by the holding SLC's.
- Manage supporting information and records in line with the NDA's Information Governance Strategy.
- Enable the transfer of materials and samples to other NDA group sites and, where appropriate to third parties to reduce storage costs and release space for decommissioning activities. Enable transfers via formal approval from NDA through a consistent group wide procedure.

### Way forward

In addition to the preferred option a number of strategy recommendations have been highlighted in this paper including:

- Appointment of information asset owners for materials and samples at each NDA SLC or subsidiary;
- Development of a community of practice to support sharing of learning in the field of materials and samples management and progress implementation of this strategy;
- Development a community of practice within the NDA's online collaboration platform, the Hub, to support sharing of best practice in this field and to enable sharing of information about materials and samples inventory.

The next stage is to explore options for the implementation of the preferred option along with the strategy recommendations highlighted in this paper.



## Document Revision Record

| Version | Stage                   | Record of Change  |
|---------|-------------------------|---|
| v0.1    | Draft                   | Establishing the document   |
| v0.2    | Draft                   | Update following internal review to incorporate comments from critical friend review, third party stakeholder comments and NDA group comments |
| V1.0    | Issued for consultation | Version for consultation through <a href="http://nda.gov.uk">nda.gov.uk</a> .   |



## 2 Strategic case

### 2.1 Topic background and context

#### What are materials and samples?

NDA defines materials and samples as physical items that are retained by the NDA group due to their perceived value in supporting the delivery or technical underpinning of NDA's mission. The majority of materials and samples are generated through research and development, however the definition of materials and samples is broad and includes for example:

- Active and inactive simulant waste forms such as cemented samples
- Samples of active waste
- Active and inactive transport container sections
- Active and inactive graphite
- Active and inactive steel
- Corrosion coupons
- Soil samples that have been retained for specific remediation and land quality studies.

#### What is the value of materials and samples to NDA?

Materials and samples are critical to provide the technical underpinning that is essential for Site Licence Companies (SLCs) and subsidiaries to deliver NDA's mission. They are typically produced for defined research and development programmes, however there are often further uses of the material or sample which warrant its retention.

The NDA group is storing and maintaining a significant number of materials and samples. The five principal reasons for the NDA group producing and retaining materials and samples are that they:

1. provide the technical underpinning for decommissioning and remediation activities;
2. provide the technical underpinning for spent fuel, nuclear material and waste management activities;
3. underpin safety cases;



4. inform asset management;
5. support disposability assessments.

Under the Energy Act 2004, NDA is required to promote and, where necessary, carry out research to support decommissioning and clean-up. NDA achieves this through managing a strategic research and development programme and individual NDA SLCs and subsidiaries also direct their own research and development programmes. These programmes rely on the availability of retained materials and samples across the NDA group as these samples are often impossible or costly to reproduce. Many of the materials and samples being stored and maintained by the NDA group have been generated as a result of work funded by NDA or the NDA group.

In some cases materials and samples are no longer required by the NDA group to meet the above five principal reasons for retention; however, there may be benefit in transferring materials or samples outside the NDA group, for example to universities. This can potentially save NDA storage costs and releases space for decommissioning activities.

Materials and samples are extremely useful to universities and third parties as they are often unique historical samples not easily reproduced. Transferring materials and samples allows NDA to support or gain access to research that may otherwise not have been completed, the results of which could eventually contribute to reduce costs, timescales and environmental impact of NDA's mission. As a condition of transfer the research outputs such as technical reports generated from testing NDA group samples must be shared with NDA and where possible more widely to allow learning to be transferred. Transferring materials and samples to third parties also helps to develop and maintain key skills within the research community that will enable the delivery of NDA's mission in the long-term.

### **What is involved in managing materials and samples?**

To ensure materials and samples can meet the purpose for which they were generated and/or being retained they should be managed appropriately.

Management of materials and samples should involve the following:

- safe and secure storage of materials and samples;
- retaining and managing information and knowledge about materials and samples;
- regularly assessing the value of materials and samples to inform keep/transfer/dispose decisions;
- sharing information about materials and samples with appropriate parties;



- transferring appropriate materials and samples to other sites following approval from NDA;
- disposing of materials and samples appropriately.

### 2.2 Current situation

#### 2.2.1 NDA group

Materials and samples and their supporting records held by NDA group are legally owned by NDA. This ownership was transferred via the Nuclear Transfer Schemes by which the assets of BNFL and UKAEA passed into NDA ownership. Both the physical items themselves and their supporting records are information assets and NDA has legal and regulatory responsibilities to manage the information to the standards required of a responsible public body.

At present, there is no group-wide strategy for the management of NDA-owned materials and samples. It is currently the responsibility of each SLC or subsidiary to determine the most appropriate solution for managing materials and samples either at their sites or at contractor premises to comply with site licence conditions and environmental permitting regulations. It is also the responsibility of the holding SLC or subsidiary to manage information, knowledge and records associated with materials and samples.

Active and inactive NDA-owned materials and samples exist at the majority of NDA sites. In addition, NDA-owned materials and samples are also:

- held in stores managed by commercial organisations (e.g. by the National Nuclear Laboratory) on behalf of the NDA group;
- held by universities under agreement with NDA (e.g. University of Sheffield, University of Leeds, University of Bristol, University of Manchester) having been previously transferred from NDA sites.

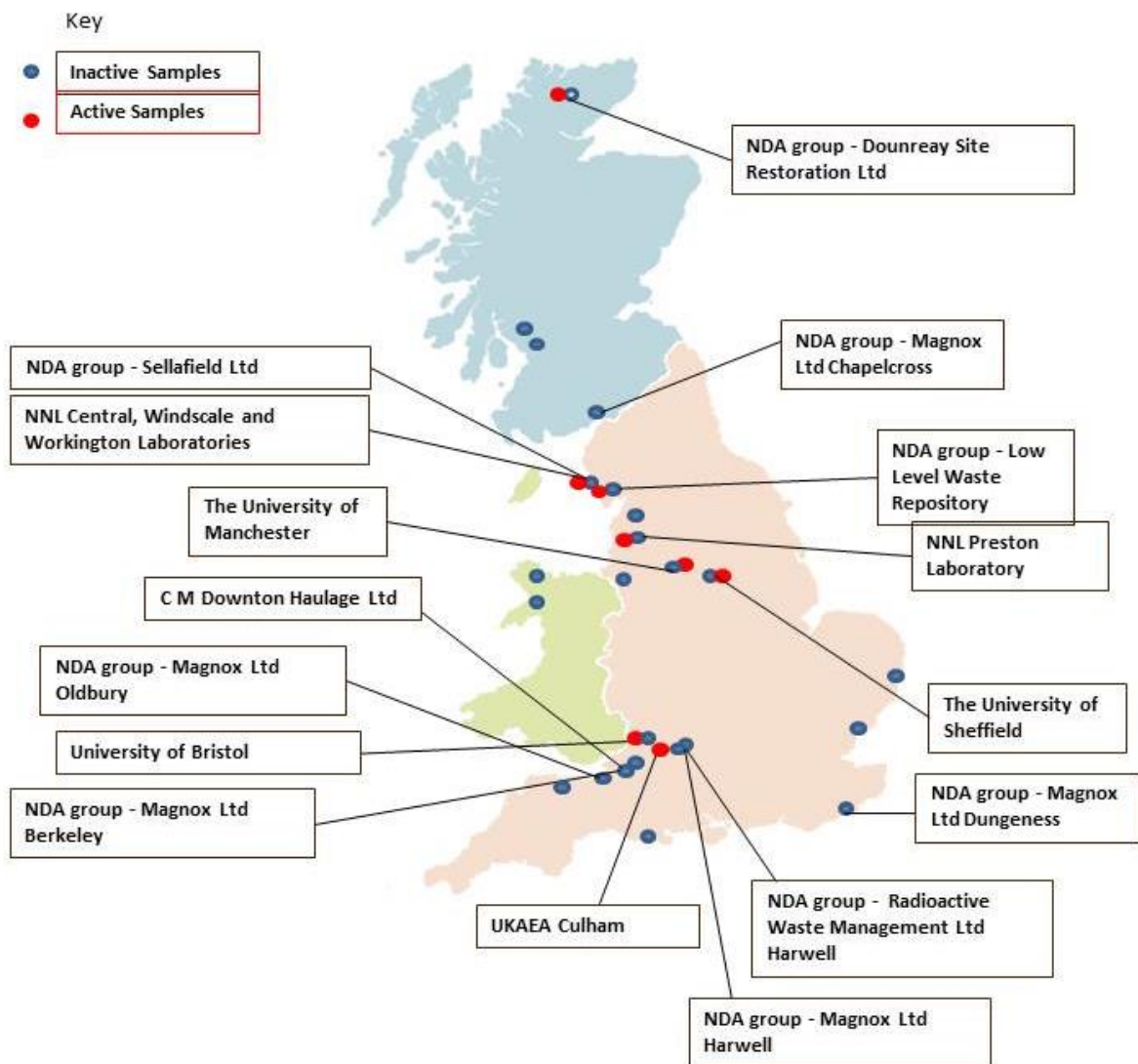
Nuclear liability for materials and samples is only transferred when the material or sample reaches another licensed site. In practice, this results in three types of transfer:

1. Transfer from one NDA Group SLC to another NDA Group SLC, where liability remains with the NDA.
2. Transfer from an NDA Group SLC to a third party/non-SLC (e.g. university), where liability remains with the NDA.



- Transfer from an NDA Group SLC to a non- NDA Group SLC, where liability is transferred to the receiving SLC. It should be noted that these transfers have been infrequent at the time of publication.

Figure 1 shows a summary map of the locations of NDA-originated materials and samples (for simplicity not all locations are shown).



**Figure 1:** Map showing a summary of locations of NDA-owned materials and samples

During the development of the Gate 0 Research and Strategic case<sup>i</sup> NDA gathered high level information about materials and samples being managed by the NDA group. This work identified the following findings:



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- For the majority of the stores identified, it was found that limited arrangements are in place to aid decision making about whether to keep or dispose of samples or the frequency at which this should be done;
- Limited arrangements existed for a proportion of inactive samples;
- The quality of record keeping for materials and samples was variable; some materials and samples were accompanied by comprehensive records, whilst some had very limited supporting documentation;
- For the majority of stores, no formal procedures were in place for accessing the materials and samples, or for maintaining an appropriate inventory;
- In the majority of cases, there was no single person within the SLC responsible for maintaining an oversight of archived materials and samples management;
- There was no formal mechanism across the NDA group for sharing information about materials and samples management and availability, or for encouraging best practice in this area;
- NDA-owned materials and samples were held both at SLC sites and at a range of contractor premises under agreement. They are held in a range of store types, from formal archives managed under contract by third parties, to small, ad hoc stores for inactive samples;
- In some instances, accountabilities for the management of inactive stores and for the renewal of associated contracts needed to be improved;
- A range of issues impacted the SLCs and subsidiaries ability to continue maintaining facilities for materials and samples. Examples include:
  - lack of funding to support ongoing management and monitoring of the store or archive;
  - potential for the existing facilities to become unavailable, for example, due to the expiry of a lease, decommissioning of the building in which a store is located or use of the building for another purpose;
  - uncertainty over the inherent value of a material or sample.

The Gate 0 paper highlighted some significant areas for improvement in the management of materials and samples. During the development of this Gate A/B strategy NDA group organisations confirmed that the findings still represent the current situation. In addition, it was identified that the majority of SLCs and



subsidiaries did not maintain inventories of all the materials and samples on their sites. Instead different parts of the organisation typically held lists (of varying completion) split by type of sample.

### *2.2.2 International management of materials and samples*

Materials and samples have been generated throughout the world through nuclear research, commissioning and decommissioning projects. There is one example of a programme in the USA which is particularly interesting as it involved development of an inventory database similar to that proposed as a credible option in this paper. In the USA the Idaho National Laboratory created a database of Department of Energy owned fuel samples and irradiated materials. This involved collaboration between researchers, the Department of Energy and third parties. A management process was also developed to allow third parties to apply to access the samples. Access to active samples in particular is often challenging in the UK.

The scope of the samples included in the Idaho National Laboratory database was very narrow and only covered specific materials for fundamental research into irradiated material behavior. Despite the narrow focus, this international example provides an opportunity for learning from this similar project to be applied to the implementation of this strategy.

### **2.3 Case for change**

The current lack of a group-wide strategy for managing materials and samples introduces a series of risks to the NDA group. The strategic risks and impacts, reviewed and updated during production of this Gate A/B paper are summarised in Fig 2, along with their causes and associated impacts.

Without a coherent strategy for the management of materials and samples, there are concerns that ultimately:

- There may be an inability to demonstrate that NDA's mission and supporting strategies are technically underpinned, either through the disposal or damage of potentially valuable or irreplaceable materials and samples, or through an inability to extract value from materials and samples due to poor retention and maintenance of knowledge and information;
- The pace of decommissioning is hindered, through a lack of understanding of materials and samples that are available to support activities associated with the delivery of our mission, and also due to known and unknown duplication of effort;
- There could be additional costs to the taxpayer through unnecessary repeat sampling, unknown duplication of effort, unnecessary storage of surplus



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materials and samples, and prolonged decommissioning timescales. In addition, there may be missed opportunities to maximise the value extracted from existing materials and samples through poor management and lack of knowledge transfer;

- NDA may be left vulnerable to legal and insurance risks relating to the inappropriate transfer of materials and samples to third parties (in particular, to non-licensed sites);
- NDA may be unable to respond to reasonable third party requests regarding materials and samples, leading to reputational damage both at national and international level.

A single group-wide strategy is needed to support NDA in delivering its mission, to reduce the risks associated with current arrangements detailed above and ensure a consistent approach to materials and samples management.



# Strategy for the Management of Materials and Samples

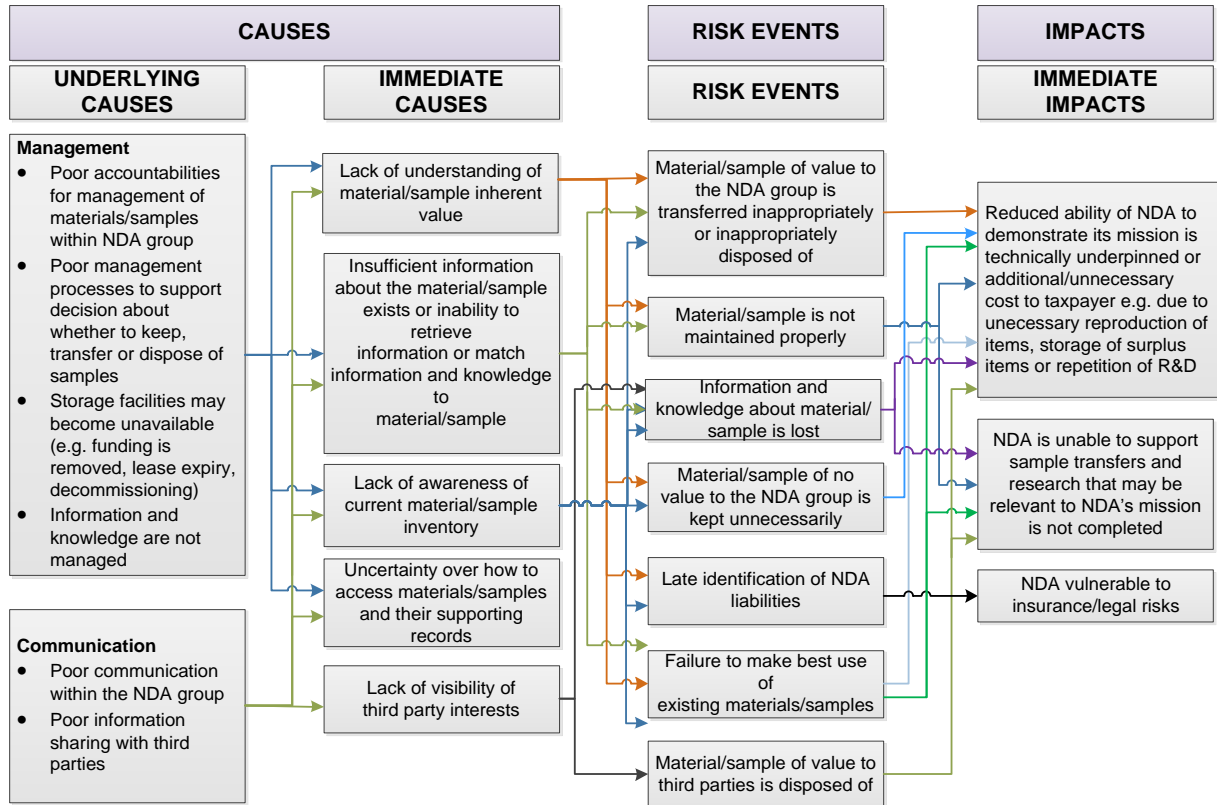


Figure 2: Summary of risks to NDA associated with the current situation for the management of materials and samples



### 2.4 Strategic objective

The strategic objective is to:

- ensure that appropriate materials and samples are retained and managed by the NDA group;
- ensure that information and knowledge about materials and samples is retained and managed by the NDA group; and
- enable the sharing of materials and samples and their supporting information within the NDA group and, where appropriate, to third parties such as universities.

### 2.5 Aspirational outcomes

This group-wide strategy should enable the strategic objective to be met and enable the key risks to be reduced to a minimal acceptable level.

It is anticipated that the development and implementation of a robust, coherent strategy for the management of materials and samples will allow the following outcomes to be achieved:

- Materials and samples and supporting records are consistently retained if they are of value, or potential value to NDA group in delivery of its mission;
- Materials and samples that are not of value to NDA are either transferred to third parties or, if this is not feasible/if there is no demand, disposed of;
- Clarity on NDA and NDA group roles and responsibilities with respect to materials and samples management;
- Consistency in approaches to the management of materials and samples across the NDA group;
- Opportunities for collaboration and knowledge sharing on issues associated with materials and samples, both within the group and with external stakeholders;
- Good records management for materials and samples, in alignment with NDA's Information Governance Strategy;
- Visibility of materials and samples held by NDA group which are available for internal and, where possible, third party use;



- Improved engagement within NDA group and with third parties to enable other sites to obtain materials and samples designated for disposal by the holding site;
- Clarity on the process for transferring materials and samples to third parties;
- Solution identified for the long-term management of retained NDA materials and samples, particularly for sites entering care and maintenance or interim end states in the near term.

### 2.6 Scope and boundaries

This strategy covers the management of materials and samples and their supporting records that fall under the definition described in Section 2.1. This strategy relates to materials and samples that have been stored or archived, and also to materials and samples that will be generated as a result of current and future programmes of work across the NDA group. Routine analytical samples that are taken for operational purposes, such as effluent discharge samples or routine soil samples are outside the scope of this strategy and should be managed in line with site processes. Tactical decisions will not be addressed in this strategy paper, including specific details about:

- Data to be included in the inventory;
- Frequency of inventory database collation;
- Inventory data to be shared with third parties.

Tactical decisions will be addressed during strategy implementation.

### 2.7 Assumptions and constraints

The following high level assumptions and constraints apply to the development of this strategy:

- **Assumption 1.** Current regulatory standards and requirements will apply at the time of implementation of any identified strategy e.g. radioactive substances management and transport regulations.
- **Assumption 2.** NDA SLCs and subsidiaries will be appropriately resourced to support activities associated with implementing this strategy and managing and transferring materials and transfers e.g. a site representative will be appointed for each NDA SLC or subsidiary to act as point of contact to NDA.
- **Assumption 3.** Transfers of material and subsequent research and development do not generate a waste for which there is no disposal route.



- **Constraint 1.** The option must enable NDA to abide by its legal obligations as laid out in the Energy Act 2004. The Energy Act assigned NDA the responsibility for decommissioning its 17 nuclear sites safely, securely, cost-effectively and in a manner that protects the environment and for carrying out and promoting research that enables this mission. The Energy Act also gave a clear remit to NDA to manage information and to facilitate the sharing of best practice.
- **Constraint 2.** NDA is operating in a fiscally constrained environment, whereby high cost or risk projects are prioritized based upon business benefit.
- **Constraint 3.** The NDA group knowledge of the materials and samples is limited to records stored to date. Historic samples may have little supporting records; therefore there may not be enough information or knowledge about a material or sample to allow its value to be recognised.





### 3 Economic case credible options

#### Potential options and strategic options diagram

During the early stages of strategy development it was identified that the potential scope of this strategy was very large. To break this down a number of key areas were identified:

- Scope of items to be retained
- Storage location
- Scope of materials and samples to be shared
- Management approach
- Information management
- Visibility of information

A long list of potential options was created for each area as shown in Figure 3.

#### Identification and application of screening criteria

NDA Value Framework criteria were screened to identify the criteria that will best distinguish between the potential options and support the development of the strategy. Criteria selected were enabling the mission, finance and health and safety (transport). A summary of the screening is shown in the Appendix. Potential options were also screened against the strategic objective.

#### Stakeholder engagement plan

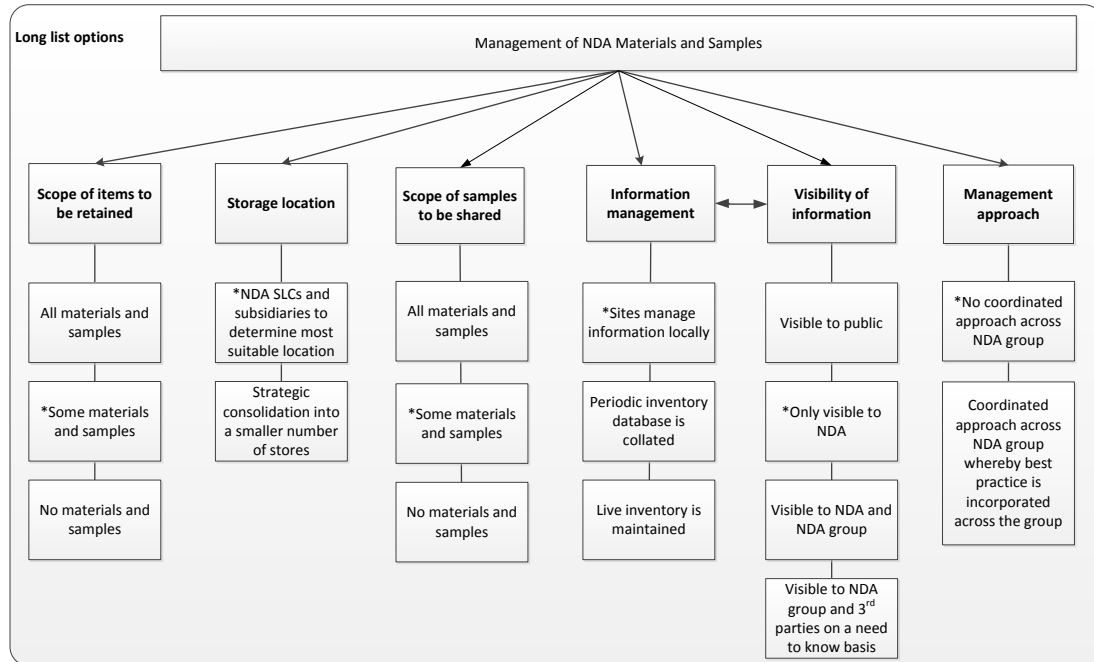
Credible options were discussed with elected site representatives from each NDA SLC or subsidiary. Comments on the strategy were also received from external stakeholders including the National Nuclear Laboratory and the Irradiated Materials Archive Group.

#### Communications plan

As the strategy has been developed the principles and scope of the strategy have been shared with key stakeholders. This has been carried out via individual communications with key stakeholders and via interaction with external communities for example the Irradiated Materials Archive Group which consists of the National Nuclear Laboratory and academic members. Implementation of this strategy will require a high level of stakeholder engagement and collaboration. A recommendation



of this strategy is the development of a community of key stakeholders in the NDA group. Further communication of this strategy will take place at Nuclear Waste and Decommissioning Research Forum meetings, Irradiated Materials Archive Group meetings and at specific Theme Overview Groups.



**Figure 3: Strategic Options Diagram (\* denotes current situation)**



### 4 Scope of items to be retained

Three potential options were identified for the scope of materials and samples to be retained:

- All materials and samples to be retained
- Some materials and samples to be retained (current option)
- No materials and samples to be retained

The potential option for no materials and samples to be retained was discredited as it would leave NDA susceptible to the risks described in Section 2.3 including a concern that ultimately there would be an inability to demonstrate that NDA's mission and supporting strategies are technically underpinned.

The potential option for all samples to be retained was also discredited due to the economic costs of maintaining samples that have no value to the NDA group. The preferred option selected was that only part of the materials and samples inventory should be retained. This preferred option was further developed with stakeholders and it was agreed that materials and samples should be retained based upon an informed decision making process if:

- a) They have a specific purpose e.g. underpinning asset care; or
- b) They have a perceived but undefined value to the NDA group.

The holding SLC or subsidiary is responsible for making an informed decision about the value of the material or sample or whether it should be retained. To inform a decision the following criteria should be considered:

- Legal or regulatory requirements to keep the sample;
- Use in underpinning a safety case, site strategy or letter of compliance;
- Quality of information retained with the sample;
- Uniqueness of the sample;
- Difficulty to reproduce;
- Current condition to meet its ongoing or future purpose;
- Cost or burden associated with keeping.



The associated records held with the material or sample should also be reviewed as these will provide information about the sample's specific purpose or potential value. The outcome of this process will be either a confirmation that the material and sample is required by the holding site or a conclusion that the material or sample is surplus to requirements by the holding site. If the output is the latter the material or sample should be considered for transfer to another site if appropriate (see Section 6). If this is not appropriate the sample should be classed as waste and disposed of via the site's waste management procedures.

It is the responsibility of the NDA SLC or subsidiary to regularly assess the value of the materials and samples it holds. This assessment should be undertaken at the following times as a minimum:

- For materials and samples that have already been created – The value of the material or sample should be assessed before any event that could result in the item being removed from a site, made inaccessible or destroyed in some way.
- For new materials and samples – Prior to the project being initiated the value of the end product material or sample should be assessed in order to make preparations for its storage and retention (if required) after the project completes. The decision should be revisited once the project has completed to review it in light of future circumstances.



### 5 Storage location

NDA SLCs and subsidiaries are responsible for the safe and secure storage of both the physical materials and samples and the associated records held on their sites and to ensure they are adequately maintained to meet the purpose for which they were generated and/or being retained.

Under the site licence conditions, site licencees hold responsibility to maintain safe working arrangements for both the storage of materials and samples and their access. In addition, sites are responsible for managing the security of materials and samples.

Two options were identified for the storage location of materials and samples:

- NDA SLCs and subsidiaries to determine the most appropriate storage location
- The development of centralized archives

Without a comprehensive inventory the benefits of centrally consolidating materials and samples are not yet clear. Over the past decade the NDA group has maintained its materials and samples and facilitated numerous transfers to both NDA group and non-NDA group sites. However, there are a number of areas where NDA requires further information to improve its understanding of group wide issues and make an informed decision to any future changes to this strategy. Examples include an improved understanding of current costs, near- and long-term storage risks, material and sample numbers and characteristics, current location and contractual arrangements.

It is recognised that consolidation of materials and samples and their associated records could improve the accessibility of the materials and samples, in particular to third parties. However, this benefit must offset the increased risks associated with transferring potentially hazardous items, the impact on the NDA's decommissioning programme, resource requirements, capital infrastructure investment, stakeholder concerns and maintenance and eventual decommissioning costs.

Therefore the preferred option is for NDA SLC and subsidiaries to continue to determine the most appropriate location for storage of the materials and samples they hold. During the development of this strategy it was identified that there were no near-term risks to known material and sample locations in the next 5-10 year period. For those materials and samples that are/become at risk of being removed from the site, made inaccessible or destroyed in some way (for example due to decommissioning or care and maintenance preparations) should be reviewed by the holding site prior to these activities to ensure appropriate plans for retention, transfer or disposal are made (See Sections 4 and 6).



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Implementation of this strategy should improve the management of materials and samples and the visibility of their information at a group-wide level. This will enable discussions about the strategy for location of samples to be revisited in the future if required.



### 6 Transferring materials and samples to other sites

The strategy for the retention of materials and samples, as discussed in Section 4, is for the NDA group to only retain items which have a specific purpose or perceived value. This will leave a subgroup of materials and samples that are surplus to the holding site which could be removed from the holding site to reduce costs or release space for decommissioning activities. There are two options for the removal of surplus items:

- Transfer to another NDA group site or, where appropriate, third party to whom they may be of benefit e.g. research purposes
- Dispose as there is no further use for them

Movement of NDA owned materials and samples (both active and inactive) and their supporting records to off-site locations requires formal approval from NDA.

Three potential options were considered for the scope of surplus materials and samples to be potentially transferred to the NDA group or a third party who could benefit from them:

- All materials and samples should be transferred
- Some materials and samples should be transferred
- No materials and samples should be transferred

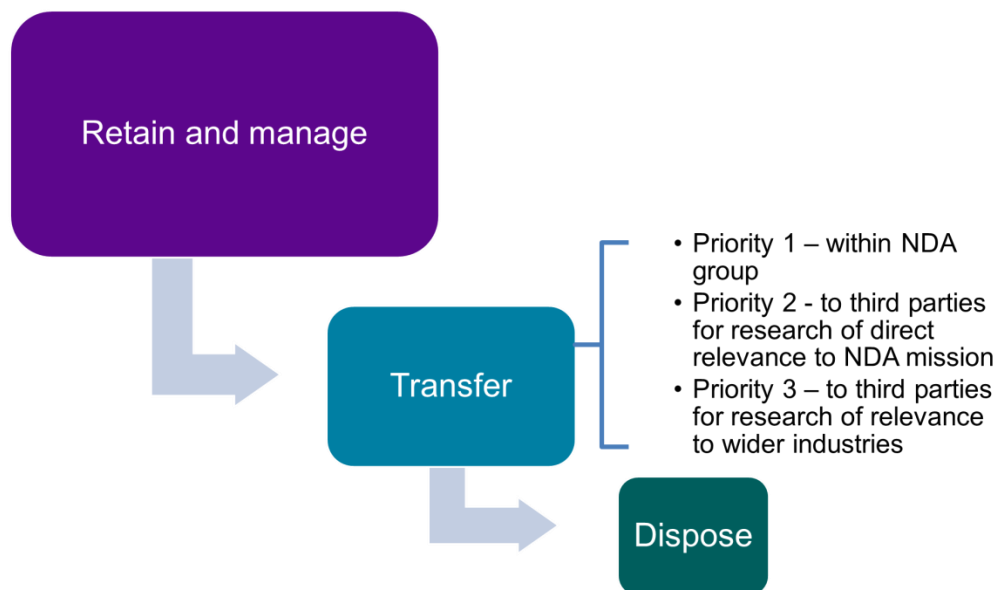
The option for all materials and samples to be within scope for transfer was rejected as it would not ensure that required materials and samples were retained. NDA would carry the risk that valuable samples would be lost via inappropriate transfers.

The potential option for no materials and samples to be transferred was also rejected as does not open up opportunities for collaboration between NDA group or third parties; Sharing of physical materials and samples enables NDA to support or access research that would otherwise not have been completed and which could eventually contribute to the reduce the cost or timescales of the NDA mission.

The priority order for the management of materials and samples is shown in the management hierarchy in Figure 4. The majority of materials and samples have a specific purpose or a perceived value and fit within the upper level of the hierarchy; to be retained by the NDA group. Items surplus to the holding site should be offered to the NDA group and then to third parties to identify if a practicable and appropriate transfer can be made.

Materials and samples can vary in nature from inert items to hazardous materials and samples which may be implicated by safeguarding considerations. Due to safety and security considerations the holding NDA SLC or subsidiary can determine a material or sample as completely unsuitable for transfer or unsuitable for transfer to specific sites, for example to non-licensed sites or sites without adequate security arrangements.

In the event that a transfer is not feasible, the SLC or subsidiary should dispose of materials and samples via their usual waste management procedures.



**Figure 4:** Materials and samples management hierarchy

In the event that a number of organisations request a material or sample the holding NDA SLC or subsidiary is responsible for selecting the most appropriate recipient. As shown in Figure 4 there is a strategic priority for the selection of a site which gives first priority to a NDA group site for use in supporting the NDA mission. The holding site should consider security, commercial implications, financial and resource costs when selecting a recipient.

A summary decision tree is shown in Figure 5 which goes through the decisions involved in managing transfer requests.

Once a SLC or subsidiary has identified a suitable recipient they must request approval for the transfer from NDA. To request the transfer of a material or sample a Transfer Request Form should be completed and submitted to NDA. The Transfer Request Form requests information about the characteristics of the requested





material, the research that the material will be used for and security, safety and permitting arrangements on the recipient site. This form is available on request to [StrategyAdmin@nda.gov.uk](mailto:StrategyAdmin@nda.gov.uk).

A range of stakeholders are consulted by NDA in order for NDA to make an informed decision whether to approve the transfer. Stakeholders include the holding SLC, the requesting organisation, the destination site (if different) and NDA legal and insurance teams. Each material or sample transfer is unique and transfers often come with varying conditions which can take a significant length of time to agree between the parties involved.

During the stakeholder engagement NDA can apply conditions to the transfer such as the requirement for the receiving organisation to pay transfer costs and/or disposal costs. As a standard transfer condition NDA requires that research outputs produced following a material or sample transfer are submitted to the NDA at [research@nda.gov.uk](mailto:research@nda.gov.uk) to enable learning to be shared with the NDA group. A number of enduring responsibilities must also be considered:

1. Nuclear liability for materials and samples is only transferred when the material or sample reaches another licensed site. If the material or sample is transferred to a site which does not hold a nuclear site license (e.g. a university) then the nuclear liability remains with the original holding SLC. Insurers may require additional information and certain procedures to be followed when material is stored on a non-NDA site.
2. The material and sample may need to be returned back to the original holding SLC for final disposal if there is no disposal route at the destination site. Liability for the costs to return the material and to dispose of the material will be discussed between stakeholders and agreed as part of the conditions of transfer.

The process from start (requesting a sample) to finish (receiving a sample) can take over 12 months depending on the type of material. Inactive sample transfers can be expected to be reviewed within 3 months. Transfer opportunities should be reported to NDA at the earliest opportunity to allow NDA sufficient time to communicate with stakeholders. Research institutions should request materials and samples well in advance of planning research.

Only once formal approval has been obtained may the material or sample be transferred along with copies of important records.

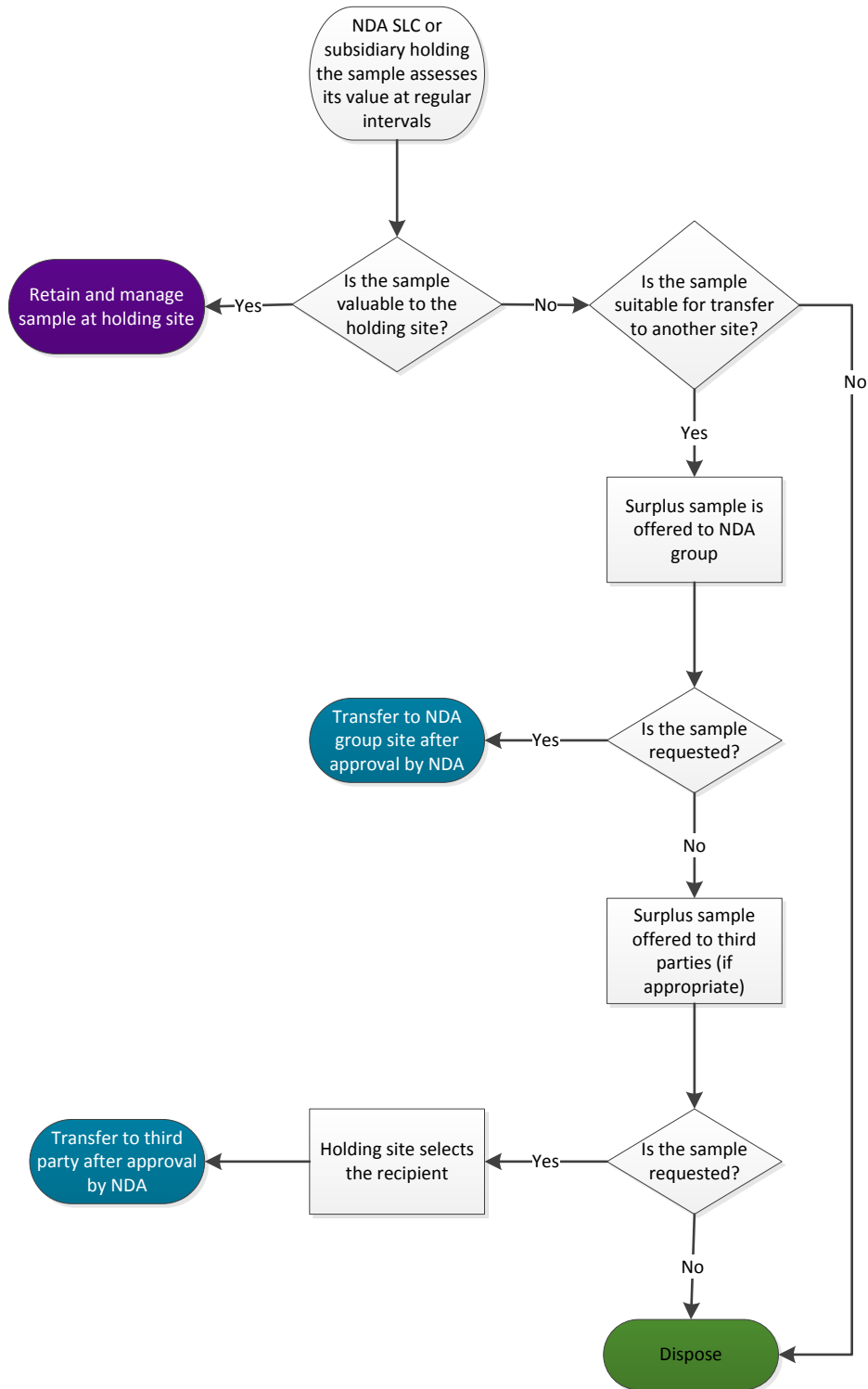


Figure 5: Summary decision tree for management of materials and samples



### 7 Management of materials and samples inventory information

Retention of information and knowledge about materials and samples is essential for the NDA group to make informed decisions such as how to maintain a material or sample and whether to retain or dispose of a material or sample. The availability of information about materials and samples greatly increases the physical sample's inherent value. The following information is extremely useful to the NDA group to make informed decisions and ensure that the material and sample can be properly maintained for its purpose:

- reason for retention (e.g. initial / current reason);
- generation (e.g. method and materials used);
- lifetime storage conditions (e.g. irradiation history);
- results from research and development; and
- storage and maintenance requirements.

In addition, the NDA group must keep appropriate records of the complaint and safe transfer of materials and samples from and to their sites. Site License Condition 5 states *‘the licensee shall keep a records of all nuclear matter (including excepted matter and radioactive waste) consigned from the site and such record shall contain particulars of the amount, type and form of such nuclear matter, the manner in which it was packed, the name and address of the person to whom it was consigned and the date when it left the site. The licensee shall ensure that the aforesaid record is preserved for 30 years from the date of despatch or such other period as ONR may approve’*. The NDA record retention schedule may require the record to be retained for longer; if this is the case then the longer time period should be adhered to. After the transfer a record of the decision making process should be retained.

The type of information and amount of information about a material or sample will vary considerably depending on when the material or sample was produced. For example, historical samples from as early as the 1950s may only have a small number of physical records whereas samples produced more recently can be expected to have associated electronic reports and datasets.

Information about materials and samples is held by the SLCs and subsidiaries directly and they hold responsibility for maintaining the types of information detailed above on behalf of NDA and in line with NDA's Information Governance Strategy<sup>ii</sup> and best practice guide on requirements for managing NDA's information<sup>iii</sup>.



The best practice guide highlights that retention of records is fruitless unless its location is known so that it can be found by the right people. The guide sets a requirement on sites to make sure information is accessible '*Actions must be taken to ensure information remains accessible to those who need it and for as long as it is needed to perform relevant management activities*'.

The Information Governance Strategy sets out a requirement for the NDA group to appoint Information Asset Owners to reduce the risks associated with losing crucial information. The Information Asset Owners are responsible for understanding what information is held within their part of the organisation, what is added and removed and how information is used. In addition, they are responsible for deciding who has access to the information and why and for providing assurance to the appointed Senior Information Risk Officer.

Loss of information and knowledge about materials and samples is a key risk to the materials and samples strategy. Appointment of Information Asset Owners would help mitigate this risk and ensure that information is accessible when it is needed by decision makers (see recommendation 1).

### **Strategy recommendation 1**

An Information Asset Owner should be assigned for each set of materials or samples (or individual materials and samples if appropriate) in line with the requirements of the Information Governance Strategy.

Our strategy for information management is to promote the efficient management and reuse of NDA information assets. It is NDA's aspiration that long term all records associated with physical samples should be stored together (i.e. in the NDA archive, Nucleus) with an appropriate set of metadata and records (see recommendation 2). As discussed in Section 5, the preferred option is for the physical samples to be stored on the most suitable sites as determined by NDA's SLCs and subsidiaries. The decision to transfer the information to Nucleus would be made by the relevant Information Asset Owner based upon how regular the need is to access and/or update the information. Appropriate metadata would include, at the very least, sample ID, description and storage location. Records could include the historical results of non-destructive evaluations. The long-term aspiration is that requests for a physical sample could be made through a single route and should the request be approved the sample and any appropriate records transferred. The sample records would also be updated to reflect the transfer.



### Strategy recommendation 2

Records relating to materials and samples, and their appropriate metadata should be collated and stored in the Nucleus for long term management.

Currently the majority of NDA SLCs and subsidiaries do not have a consolidated inventory of materials and samples held by their sites. This makes it difficult for sites to determine if materials and samples should be retained, transferred or disposed and leaves NDA vulnerable to the risk that materials and samples will be forgotten, lost or inappropriately maintained. To address these risks three potential options were identified to improve information management:

- o Sites retain information locally (current situation)
- o A periodic inventory database is collated
- o A live inventory is maintained

The option for sites to retain information locally was rejected as it does not allow information to be visible to NDA or NDA group to support the strategic objective to enable sharing of materials and samples and their information within the NDA group.

The potential option for live reporting would require sites to maintain a live log of materials and samples. This would bring the advantage that up-to-date information on materials and samples would be available for both the site and NDA to help inform real-time decision making. New software may need to be developed to facilitate this and to enable the right information to be collected in order to enable strategic decision making. This would require significant investment and resource. This potential option was rejected as there is currently limited inventory information available at a NDA group level and therefore the benefits of live inventory reporting are not yet well defined enough for this option to be preferred.

The preferred option is for a formal periodic inventory to be collated. This will require sites to provide set information on their materials and samples at certain periodic intervals to provide a holistic overview of all materials and samples held by the NDA group to support strategic decision making by NDA and the NDA group. Another benefit of periodic reporting is that it could encourage sites to review the value of their materials and samples more often, ensuring the items that have value to NDA's mission are retained and materials and samples that are not required are transferred or disposed to reduce the cost of storage. This will require a lower upfront investment however, will still require significant resource.



A formal periodic inventory of radioactive waste in the UK is collated by the NDA every 3 years. Waste producers from the NDA group and outside the NDA group provide detailed information on their stocks of waste and materials and forecast future arisings. Collation of an inventory of materials and samples held by the NDA group would be a significantly smaller undertaking however would have many synergies with the waste inventory such as the collation and dissemination of technical information and engagement of a wide range of stakeholders. Collation of a periodic inventory of materials and samples should build upon lessons learnt from development of the radioactive waste inventory.

A periodic inventory was collated in the USA and provides an opportunity for learning from a similar project whereby an inventory of materials and samples was created (see strategy recommendation 3).

### **Strategy recommendation 3**

Research and learn from international examples where sample inventories have been collated and incorporate learning into the development of a periodic inventory and implementation of this strategy.



### 8 Visibility of materials and samples information

The preferred option detailed in Section 7 is for a periodic inventory to be collated to cover NDA group materials and samples. The audience of a periodic inventory requires consideration in order to develop the scope and detail of the inventory. A number of potential options for the visibility of a materials and samples inventory were identified:

- Full visibility to only NDA Corporate Centre
- Full visibility to only NDA Group
- Full visibility to NDA Group and partial visibility to other parties (e.g. universities).
- Full visibility to everyone

The potential options to make the inventory visible to just NDA or just NDA and the NDA group were rejected as they limit the opportunities for collaboration to be identified. The potential option to make the inventory visible to the public was rejected, due to the security sensitivities of parts of the inventory which require a need to know to be enforced and which would require a large amount of resource to filter and present in a format which is understandable.

The preferred option that was selected was to make the periodic inventory visible to the NDA group and third parties on a need to know basis. Information about the materials and samples held by the NDA group is extremely useful to third parties such as universities. The full detailed inventory should not be made available to third parties for the same reasons that the inventory should not be made available to the public, however parts of the inventory should be made available to third parties such as a high level overview of the inventory.

Allowing third parties to access part of the inventory on a need to know basis would allow third parties to be aware of:

- Physical materials and samples designated as surplus to the NDA group (that are available for transfer to a third party);
- Physical materials and samples currently held by the NDA group (that could become available for transfer in the future); and
- Information that could support their current programmes of work.

NDA would benefit from enabling the visibility of this information as it would open up opportunities for transferring surplus items, potentially saving NDA storage costs and



releasing space for decommissioning. Transferring surplus items would also allow NDA to support or gain access to research that may otherwise not have been completed. A standard condition of transfer is that the research outputs from projects that have used NDA-owned samples must be shared with NDA and where possible more widely to allow learning to be transferred.

A third party may request information from the NDA group about a material and sample that has not been designated as surplus in the inventory. As discussed in Section 7 the holding SLC or subsidiary is responsible for ensuring that information is accessible for this purpose, and for responding to and sharing information (where appropriate) with requesting organisations in line with its security requirements.

If a third party wishes to request a material or sample that is not currently designated as surplus they should do this by completing a formal Transfer Request Form detailed in Section 6. However, it is unlikely that a transfer will be approved unless both the holding site and the NDA group all agree that the sample has no perceived value in line with the management hierarchy and decision tree shown in Figures 4 and 5.

There is currently only an informal network for sharing information about materials and samples. Implementation of this strategy will involve a large amount of collaboration between NDA and the NDA group and requires an extension of this network. It is recommended that a formal network is developed and community of practice within the Hub is created to foster collaboration in this area, enable sharing of information about materials and samples and encourage best practice (see recommendations 3 and 4).





### Strategy recommendation 4

A community should be developed comprising of key stakeholders who have an interest in NDA materials and samples. This should include Information Asset Owners who have an oversight of stored materials and archives on their site and relevant technical leads from the NDA group.

The aim of the community should be to share best practice in the field of materials and samples management, discuss opportunities for sharing of information and/or physical materials and samples and implementation of materials and samples strategy.

Once established the community should be open to involvement by third party representatives such as universities and national laboratories who:

- Have an interest in the NDA's inventory of materials and samples;
- Have materials and samples of interest to NDA and NDA group.

### Strategy recommendation 5

Establish a community of practice within the Hub to enable the following activities within the community:

- Sharing of information about NDA-owned materials and samples, such as the inventory
- Sharing of details about surplus materials and samples
- Sharing of best practice in the field of materials and samples management
- Sharing of research outputs
- Consolidation of NDA guidance in this area



### 9 Management approach

Currently NDA group sites are managing their materials and samples in isolation operating under a range of formal and informal procedures. As discussed in Section 2 the maturity of management procedures differs from site to site and some sites have limited arrangements in place to aid decision making such as whether to keep or dispose of samples or the frequency at which this should be done.

Two potential options were identified for the management approach:

- No coordinated approach (current situation)
- A coordinated approach across the NDA group whereby best practice is incorporated across the group

The uncoordinated approach option was rejected as the risks to NDA identified in Section 2.3 would remain, in particular on sites with immature processes in place. This could result in a failure to make best use of samples or the disposal of valuable samples.

The preferred option is to lead a coordinated approach to the management of materials and samples. It is in line with NDA's desire to improve cooperation and collaboration within the NDA group.

A coordinated management approach should involve the development of standardised processes and governance across the NDA group based on best practice. This will deliver the following benefits:

- Improve NDA and stakeholder confidence that materials and samples are being managed and transferred appropriately;
- Consistency in approaches; all sites will operate to similar standards e.g. decision making and sharing of information and knowledge.



## 10 Summary of roles and responsibilities in the management of materials and samples

Table 1: Summary of roles and responsibilities in the management of NDA-originated materials and samples

| NDA  | NDA Group SLC   | Non-NDA Group SLC  | Third Party (e.g. University)   |
|--|---|--|---|
| Legal owners of materials and samples and their supporting records.            | Responsible for the safe and secure storage of physical materials and samples held on their sites (including management of storage contracts with third parties)  | Legal owners of transferred materials and samples and their supporting records               | Responsible for the safe and secure storage of NDA-owned physical materials and samples |
| Set strategy for materials and samples management and their supporting records | Responsible for applying the materials and samples management hierarchy (Fig 4):<br><ul style="list-style-type: none"> <li>- regularly assessing the value of materials and samples</li> <li>- making an informed decision about the value of a sample to its site (Section 6)</li> </ul> | Acquires responsibility for materials and samples management strategy and supporting records | Use of the materials and samples for agreed purpose, as defined in transfer request.    |



|  |   |  |   |
|--|---|--|---|
| <p>Review transfer requests, authorise or decline transfers and manage insurance liabilities</p> | <p>Responsible for engaging with third parties (where appropriate) to discuss potential transfers, and:</p> <ul style="list-style-type: none"> <li>- selecting the most appropriate party to send samples to, by following the management hierarchy</li> <li>- requesting formal approval from NDA prior to movement of NDA-owned materials or samples off-site (Section 6)</li> <li>- fulfilling the consignment role for transfers of materials and samples falling within the scope of NIA65.</li> </ul> | <p>Non-NDA SLC has liability and is responsible for ongoing management of materials and samples.</p> | <p>Responsible for management and disposal/return of materials and samples as per signed legal transfer letter.</p> |
|  | <p>SLCs hold nuclear liability for radioactive materials and samples onsite and transferred offsite to a third party not holding a nuclear site license (Section 6)</p>   | <p>Non-NDA SLC holds nuclear liability for transferred radioactive materials and samples</p>         | <p>Third party does not hold nuclear liability for transferred materials and samples.</p>                           |



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|  |   |   |  |
|--|---|---|--|
|  | Responsible for the safe and secure storage of information and records associated with materials and samples (Section 7)  | Responsible for the safe and secure storage of information and records associated with transferred materials and samples. | Responsible for managing/updating information and records associated with transferred materials and samples as per signed legal transfer letter. |
|  | Responsible for ensuring materials and samples and their supporting records are adequately maintained to meet the purpose for which they were generated and/or being retained (Section 7) | Non-NDA SLC has liability and is responsible for ongoing management of materials and samples.                             | Responsible for use and maintenance of materials and samples as per signed legal transfer letter.  |



### 11 Financial and commercial cases

At this stage, no additional funding is anticipated for implementation of the preferred options and associated strategy recommendations. These outcomes fall within the aspirations of the already funded Information Governance Programme such as meetings its goals to:

- Have a standardized group-wide approach to information assurance and reporting
- Develop effective and, where practical, common ICT solutions (particularly for knowledge management)
- Create a community of practice within the Hub where information assets can be shared, accessed and re-used by various stakeholder communities

Implementation of the preferred option will require additional resource from NDA (strategy, legal and information governance teams) and the NDA group however this is expected to be absorbed within business as usual.

At this stage it is not anticipated that there will be external procurement instructions required in the delivery of this strategy other than where there are external storage arrangements required.

### 12 Economic case preferred options

Preferred options were identified for each aspect of materials and samples management. A summary of the preferred option for each area is below.

#### **Scope of items to be retained**

Preferred option: Some materials and samples should be retained.

Only materials and samples with a specific purpose or a perceived value should be retained. An informed decision should be made by the holding SLC or subsidiary to determine the value of the material or sample and this should consider a range of criteria including legal or regulatory requirements to keep the sample and the uniqueness of the sample. This assessment should be revisited at regular intervals.

The holding SLC or subsidiary should follow the management hierarchy whereby items that are surplus to the holding site should be considered for transfer (where appropriate) and if this is not possible disposed of as waste.



### **Storage location**

Preferred option: NDA SLCs and subsidiaries should determine the most suitable location for storage of materials and samples they are holding.

The holding SLC or subsidiary is responsible for the safe and secure storage of the materials and samples it holds on NDA's behalf. There is currently no business need to consolidate samples as materials and samples locations are expected to remain unchanged in the near to medium term. The NDA also does not currently have a consolidated dataset of materials and samples with their locations. Group-wide knowledge of materials and samples should be developed prior to a change in the strategy for storage location. The NDA is therefore not currently pursuing any options to consolidate its materials and samples into a smaller number of archives across the group.

### **Scope of samples to be transferred**

Preferred option: Some materials and samples should be transferred.

Some materials and samples may be excluded from transfer based upon safety and/or security grounds. Items deemed suitable for transfer should be first offered to the NDA group and following this, if appropriate, offered to third parties. Movement of NDA-owned materials and samples requires formal approval by NDA via a Transfer Request Form and discussion with a range of stakeholders to agree transfer terms.

### **Information management**

Preferred option: A periodic inventory should be collated.

NDA SLCs and subsidiaries are responsible for maintaining information associated with materials and samples and for making it accessible. A periodic inventory will provide NDA and NDA group a holistic overview of materials and samples held across the group. This will enable opportunities for collaboration to be identified. A holistic oversight will allow strategic risks to be identified that were not visible previously.

### **Visibility of inventory information**

Preferred option: The inventory should be visible to the NDA group and to third parties on a need to know basis.

Having a collated inventory that is visible to the NDA group should make opportunities for collaboration and information sharing visible which could reduce the likelihood of duplication of effort. Allowing third parties to access parts of the inventory would allow them to be aware of surplus items to the NDA group that they



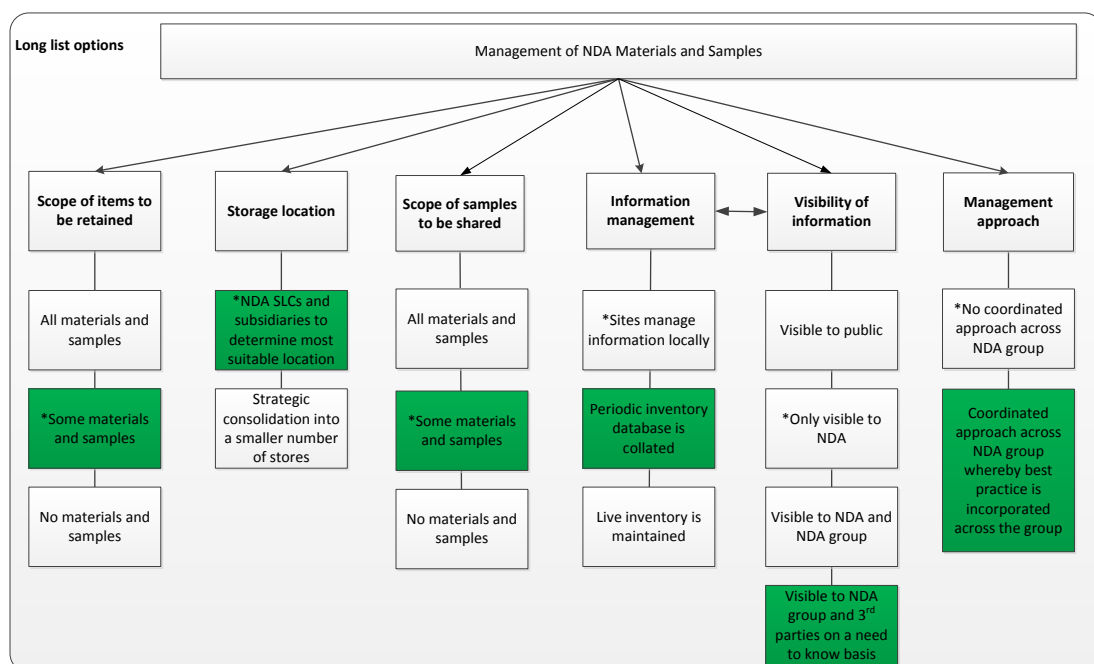
may benefit from taking. NDA would benefit from enabling the visibility of this information as it would open up opportunities for transferring surplus items, potentially saving NDA storage costs and releasing space for decommissioning. Transferring surplus items would also allow NDA to support or gain access to research that may otherwise not have been completed. A standard condition of transfer is that the research outputs from projects that have used NDA-owned samples must be shared with NDA and where possible more widely to allow learning to be transferred.

## Management approach

Preferred option: A coordinated approach should be developed.

This should involve the development of standardised processes and governance across the NDA group based on best practice. This will improve NDA and stakeholder confidence that materials and samples are being managed and transferred appropriately and will improve sites management practices by encouraging incorporation of best practice. This should mean that sites operate to similar standards e.g. decision making and sharing of information and knowledge.

The Strategic Options Diagram was updated to highlight the preferred option for each area (see Figure 6).



**Figure 6:** Strategic Options Diagram with preferred options highlighted in green





Selection of the preferred option was based upon:

- the outcome of the NDA value assessment (shown in the Appendix);
- the ability of each option to meet the strategic objective and aspirational outcome;
- the current situation and context (section 2).

The preferred option enables NDA to meet its strategic objective and complements NDA's Information Governance Strategy which sets out aspirations for group-wide approaches to managing information and sharing of information by stakeholder communities.

The preferred option:

- Enables the strategic objective to be met;
- Aligns with the Information Governance Strategy;
- Creates a consistent approach to management of materials and samples across the NDA group, including decision making around retaining materials and samples.

The next stage in the strategy development is to explore options for implementation of the preferred option. In addition, the five strategy recommendations identified in this paper require scoping and implementation.



### 13 Conclusions

This paper presents NDA's strategy for the management of materials and samples by the NDA group. The strategic objective is to:

- ensure that appropriate materials and samples are retained and managed by the NDA group;
- ensure that information and knowledge about materials and samples is retained and managed by the NDA group; and
- enable the sharing of materials and samples and their supporting information within the NDA group and, where appropriate, to third parties such as universities.

A number of key areas were identified during strategy development: the scope of materials and samples to be retained and shared, storage location, management approach, information management and the visibility of information. Potential options were developed for each area, with stakeholder input, and the NDA Value Framework was used to screen these options. In addition, the credible options were screened against the strategic objective.

The preferred option for this strategy is to:

- Retain materials and samples that have either a specific value, or a perceived value to the NDA group.
- Regularly assess materials and samples and make an informed decision about their value in particular focussing on legal or regulatory requirements to keep samples, use in underpinning NDA's mission, underpinning safety cases, underpinning strategy or letters of compliance and the cost or burden associated with retention.
- Develop a better understanding of the materials and samples stored by the NDA group by periodic inventory collation.
- Make the inventory accessible to NDA group and, where value has been clearly demonstrated, other SLCs and third parties.
- Safely store and manage materials and samples at appropriate locations across the UK.
- Manage supporting information and records in line with the NDA's Information Governance Strategy.



- Develop a coordinated approach to management of materials and samples whereby best practice is incorporated across the NDA group.
- Enable the transfer of materials and samples to other NDA group sites and, where appropriate to third parties to reduce storage costs and release space for decommissioning activities. Enable transfers via formal approval from NDA through a consistent group-wide procedure.

In addition to the preferred option a number of strategy recommendations were developed. These are key activities to support implementation of this strategy and its longer term aspirations:

Recommendation 1: Appointment of information asset owners for materials and samples at each NDA SLC or subsidiary.

Recommendation 2: Records relating to materials and samples should be collated and stored in the nucleus archive for long term management.

Recommendation 3: International examples where samples have been collated should be researched and learning incorporated during the development of a periodic inventory of NDA-owned materials and samples.

Recommendation 4: Development of a community of practice comprising of key stakeholders who have an interest in NDA materials and samples or who are involved in the management of materials and samples. The community should be used to share best practice in the management of materials and samples, discuss opportunities for sharing of information and/or physical materials and samples and implementation of the materials and samples strategy. Once established invite third party representation.

Recommendation 5: Development a community of practice within the Hub to support sharing of best practice in this field and to enable sharing of information about materials and samples inventory.

The preferred option enables NDA to meet its strategic objective and complements NDA's Information Governance Strategy which sets out aspirations for group-wide approaches to managing information and sharing of information by stakeholder communities.

The next stage is to explore options for the implementation of the preferred option along with the strategy recommendations highlighted in this paper.



### 14 Appendix NDA Value Framework Assessment

NDA Value Framework criteria were screened to identify the criteria that will best distinguish between the potential options and support the development of the strategy. Three criteria were selected and each credible option was assessed against these criteria as summarised in Table 2. The following ratings were applied:

**RED**=Negative impact on criteria or does not meet criteria;

**AMBER**=Neutral impact on criteria or may not meet criteria or there is some risk or uncertainty;

**GREEN**=Positive impact on criteria or meets the criteria.



Table 2: NDA Value Framework screening of credible options

|                               |   | Enabling the mission: Taking the broader view   | Finance: Costs and Return  | Health and safety: Transport                                |
|-------------------------------|---|---|--|---|
| Scope of items to be retained | All materials and samples                                     | Would enable the progression to end states by retaining all samples of value to the mission.  | High unnecessary cost for continued storage of active and inactive items that may not be required by sites. High resource demand. Potential high return on investment. |   |
|                               | Some materials and samples                                    | Would enable the progression to end states. A smaller number of samples may mean further attention is given to maintenance of those items that are of value to the NDA group. | Reduced cost compared to option above. Potential high return on investment.  |   |
|                               | No materials and samples                                      | Would limit opportunities for progression to end state by limiting NDA group research and third party research that could be leveraged.                                       | Would result in a saving to NDA, however this would be offset by the reduced ability to deliver the mission and no return on investment.                               |   |
| Storage location              | NDA SLCs and subsidiaries to determine most suitable location |   | Storage costs are covered as business as usual.  | Would result in minimal transport or materials and samples. |



## Strategy for the Management of Materials and Samples

|                                    |   | Enabling the mission: Taking the broader view   | Finance: Costs and Return   | Health and safety: Transport                                  |
|------------------------------------|---|---|---|---|
|                                    | Strategic consolidation into a smaller number of archives |   | May require large capital investment to build offsite storage or repurpose facilities on site. May not provide a financial benefit. | Would result in increased transfers of material and samples.  |
| Scope of samples to be transferred | All materials and samples                                 | NDA would be vulnerable to the risk that materials and samples that are needed by the group would be transferred inappropriately reducing the opportunity to undertake research to progress end states. | High cost to NDA group supporting transfers and potentially having to reproduce or procure samples.                                 | Would result in increased transport of radioactive materials. |
|                                    | Some materials and samples                                | Could ensure valuable items are retained, but still enable third parties to benefit from items and NDA to leverage research and development.  | Limited cost to NDA group; NDA group would have the ability to determine if a transfer was financially viable.                      | Would result in increased transport of radioactive materials. |
|                                    | No materials and samples                                  | NDA would lose the opportunity to leverage research from third parties. Supply chain capability and skills would not be developed. NDA would retain or dispose of all materials and samples.            | No transfer costs   | No increase in transport                                      |
| Management approach                | No coordinated approach across NDA group                  | Could result in failure to make best use of samples or disposal of valuable samples. Sites with immature management processes may transfer or dispose of samples inappropriately.                       |   |   |



## Strategy for the Management of Materials and Samples

|                           |   | Enabling the mission: Taking the broader view   | Finance: Costs and Return  | Health and safety: Transport |
|---------------------------|---|---|--|------------------------------|
|                           | <b>Coordinated approach across NDA group whereby best practice is incorporated across the group</b> | Increases opportunity for progression of end states. Would improve and align management processes to support decisions about whether to keep, transfer or dispose of samples. Reduces risk that samples would be disposed of if they had a value. |  |                              |
| Information management    | <b>Sites manage information locally</b>   | Information about a material or sample may be lost reducing its value. Information is not visible to NDA group to support opportunities for collaboration to be identified. Lack of awareness of current inventory.                               | Information management costs are covered as business as usual.   |                              |
|                           | <b>Periodic inventory database is collated</b>  | Increases awareness of current inventory. Enables opportunities for collaboration to be identified.   | Would result in increased resource costs and potential upfront cost if new technology was required                                       |                              |
|                           | <b>Live inventory is maintained</b>   | Increases awareness of current inventory. Enables opportunities for collaboration to be identified in real time.  | Would result in increased resource costs and potential upfront cost if new technology was required                                       |                              |
| Visibility of information | <b>Visible to the public</b>  | Enables opportunities for collaboration to be identified by all stakeholders  | Medium resource cost to provide an inventory. High resource costs as all information would need to be unprotectively marked for release. |                              |



## Strategy for the Management of Materials and Samples

|  |  | <b>Enabling the mission: Taking the broader view</b>                               | <b>Finance: Costs and Return</b>   | <b>Health and safety: Transport</b> |
|--|--|--|--|-------------------------------------|
|  | <b>Only visible to NDA</b>   | Will not open up any opportunities for transfer of surplus items or collaboration. | No extra costs associated with this option.  |                                     |
|  | <b>Visible to NDA group, NDA and third parties on a need to know basis</b> | Enables opportunities for collaboration to be identified.                          | Medium resource cost to provide an inventory. Medium resource cost for screening information as only information on a need to know basis would be submitted to external organisations. |                                     |
|  | <b>Only visible to NDA group and NDA</b>                                   | Enables opportunities for collaboration to be identified within the NDA group.     | Medium resource cost to provide an inventory NDA and NDA group.  |                                     |





## 15 References

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<sup>i</sup> NDA (2016) Management of Materials and Samples by the NDA Estate Research and Strategic Case

<sup>ii</sup> NDA (2013), Information Governance Strategy.

<sup>iii</sup> NDA (2018) Managing NDA Information: Requirements.