

ONR GUIDE			
Duty Holder Management of Records			
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1. INTRODUCTION

- 1.1. ONR has established its Safety Assessment Principles (SAPs) which apply to the assessment by ONR specialist inspectors of nuclear facilities that may be operated by potential or existing licensees. The principles presented in the SAPs are supported by a suite of guides [\[1\]](#) to further assist ONR's inspectors in their technical assessment work in support of making regulatory judgements and decisions. This technical assessment guide is one of these guides.

2. PURPOSE AND SCOPE

- 2.1. The purpose of this Technical Assessment Guide (TAG) is to provide further guidance for ONR inspectors when exercising professional regulatory judgment on the adequacy of a licensee's records management arrangements made under Licence Conditions (LC) 6 & 25.
- 2.2. Management of records is an important topic and a large amount of information is available in standards and guidance. There are also rapidly developing technologies which can be applied to records management. This TAG discusses the basic principles which are applicable to any records management system.
- 2.3. The TAG describes the general management arrangements required for an effective records management system. It also provides a series of appendices which provide supporting detail on particular aspects of the system. A short form assessment guide to assist specialist inspectors during an intervention is presented at appendix 6. This guide complements NS-INSP-GD-006 "LC6 Documents, Records, Authorities and Certificates" & NS-INSP-GD-025 "LC26 Control and Supervision of Operations" which provide inspection guidance for site inspectors. Site Inspectors should consider seeking Quality Management specialist inspector support when carrying out inspections against LC6 & LC25.
- 2.4. The TAG covers the establishment and administration of a records management process, the physical nature of records and the conditions of storage. It does not deal with the specific records that licence conditions require. It should be noted that there will be records which will require keeping for longer periods than the 30 years referred to in LC6 (2). The licensee's arrangements should define the retention period for records and storage.

3. RELATIONSHIP TO LICENCE AND OTHER RELEVANT LEGISLATION

- 3.1. The legal framework relating to management of records is made up of numerous pieces of legislation; however the key legislation applicable is the Health and Safety at Work Act 1974, NIA65, TEA2013, RSA93, EPR10 and IRR99. Legislation which gives access to records includes the Public Records Act 58 (PRA58) and the Freedom of Information Act (FOI2000). Other safety related legislation requiring records includes the Management of Health and Safety at Work Regulations 1999 and the Lifting Operations and Lifting Equipment Regulations 1998.
- 3.2. LC6 - Documents, Records, Authorities and Certificates - requires that the licensee makes adequate records to demonstrate compliance with the conditions attached to the Licence and that there are adequate arrangements to preserve records for a period of 30 years or such other periods as the executive may approve. It should be noted that LC5 (3) includes a specific requirement for a retention period of 50 years for records of stolen, lost, jettisoned or abandoned nuclear matter from the date of such theft, loss, jettisoning or abandoning.
- 3.3. Licensees should take account of relevant legislative and statutory requirements when identifying the records to be retained and the retention periods. Records that are generated

to satisfy the requirements of Licence Conditions are subject to the controls developed under LC6.

3.4. LC17 requires that adequate quality management arrangements are developed and implemented by the licensee. An essential part of these arrangements is the development of procedures which detail the generation and control of records. These procedures should, as a minimum, detail:

- responsibilities for the identification (normally through record schedules) and control of records
- methods, conditions and monitoring of storage/retention commensurate with the nature of the record and the media used
- means of retrieval and update
- levels of security to protect from corruption, unauthorised access, loss or damage
- duration of storage
- arrangements for the review and disposition of records
- arrangements for the periodic auditing of the control and storage of records

3.5. LC25 expects the Licensee to establish procedures which identify operational records to be kept.

3.6. Where licensees wish to change their record keeping arrangements, particularly when this involves significant changes in media type and management, this should be discussed with ONR.

3.7. Civil nuclear security arrangements should be considered against the requirements of Nuclear Industries Security (Amended) Regulations 2017 and other related guidance. Licensees must have arrangements in place to manage documents which are compatible with the protective marking; this consideration is particularly relevant in the defence sector.

4. **RELATIONSHIP TO SAPS, WENRA REFERENCE LEVELS AND IAEA SAFETY STANDARDS ADDRESSED**

4.1. The [Safety Assessment Principles for Nuclear Facilities](#)  (SAPs) [2] provides a framework to guide regulatory decision-making in the nuclear permissioning process. It is supported by Technical Assessment Guides (TAGs) which further aid the decision-making process. This TAG provides supporting information to SAP MS.2 paragraph 68.

4.2. WENRA reference levels [3] do not reference records directly; however there are requirements to maintain records of the activities undertaken.

The applicable IAEA standard is safety requirements document GSR PART 2 , 'Leadership and Management for Safety'

4.3. [4] and the supporting safety guide GS-G-3.1, 'Application of the Management System for Facilities and Activities' [5] . The guidance presented in this TAG is consistent with GS-G-3.1.

4.4. There are a number of codes and standards which provide advice and guidance on records systems, however there are three British Standards which provide core information for a records system:

- BS ISO 15489-1:2016 Information and documentation – Records management Part 1 General

- BS ISO15489-2:2001 Information and documentation – Records management Part 2 Guidelines
 - PD5454:2012 Guide for the storage and exhibition of archival materials
- 4.5. BS ISO 15489 Parts 1 and 2 are suitable for records kept up to 30 years, beyond this PD5454:2012 should be used. PD5454 requires environmental controls to be put in place to preserve records.
- 4.6. A selection of relevant information, standards and links is provided in [Appendix 5](#).

5. ADVICE TO INSPECTORS

Establishing a records management process

- 5.1. Licensee arrangements should reflect a clear commitment from senior management and from staff at all levels to records management. The licensee should have a clear appreciation of the totality of the records required and how they are managed, especially during periods of organisational change.
- 5.2. A record provides objective evidence of an activity performed or results achieved and can be a document or a physical item. Records are of strategic importance to a licensee and are an asset that needs to be properly managed. Records should enable a licensee to demonstrate how it has acted and how it has complied with the requirements of the licence condition and other regulatory requirements.
- 5.3. An effective records management system is dependent on having an adequately resourced infrastructure with an adequate number of suitably qualified and experienced personnel available at all times to manage, maintain and operate it. The licensee should have mechanisms in place to check that arrangements are being effectively implemented. The licensee will need to consider appropriate and adequate records management arrangements for the organisation which may include a central processing resource with interfaces to the facilities that are generating the records. These arrangements will need to consider the physical assets [building, machinery, location] that will be used for processing the records prior to archiving and whether they are fit for purpose. The organisation should provide effective training in records management where appropriate.
- 5.4. The licensee must ensure that adequate records are held for a period necessary to ensure that the safety case for operation is available at all times, that design and construction information is available for decommissioning, that operational records are available to assist investigations in the event of an accident or incident and operational records are available for the statutory number of years after cessation of operations for the purpose of assisting any claims of damage to health as a result of exposure to ionising radiation.
- 5.5. The licensee should have a process, described by documented procedures, for dealing with records management which covers responsibilities, document control, document identification, generation, indexing, media type, number of copies and archiving arrangements. Process documentation should specify what records are required.

- 5.6. The licensee should have a Records Retention Schedule which details the type of records to be kept and their retention and review periods. The Record Retention Schedule should cover the whole lifecycle of the facility from the design phase through to the decommissioning programme. The Records Retention Schedule should be used by facility managers to draw up a facility specific schedule which itemises the records that are being generated by their facility. The Record Retention Schedules should provide the licensee with the means to determine the extent of its records and the means of controlling those records.
- 5.7. The Record Retention Schedule should identify the legislation requiring records to be retained; however three key pieces of legislation are the Health and Safety at Work Act 1974, the Nuclear Installations Act 1965 (as amended), The Energy Act 2013 and the Ionising Radiation Regulations (IRR17).
- 5.8. Contracts awarded to suppliers of plant and equipment or services should state the records to be provided. An appropriate monitoring regime should be put in place to check that contractors are retaining the records in accordance with the contract and are supplying the records required by the customer. This can create particular concerns when different organisations are involved during the different lifecycle phases of the facility. The key points to consider are the ownership and the need for adequate management arrangements for the long term integrity and stewardship of the records. In cases where a contractor is permitted to interact directly with a licensee's electronic document and records management system (EDRMS) suitable protocols should be developed for managing this interaction.
- 5.9. Occasions may arise when an organisation is updating its records management arrangements or undergoing organisational changes which may include a change of ownership. When this situation arises an effective and robust link is required between the new arrangements and the records that have been generated under previous arrangements. A transition plan should be put in place to cover any organisational change affecting records in support of LC36 submissions.
- 5.10. The licensee's procedures should identify what records are required; the relationship with the record keeping process and how long records should be kept.
- 5.11. The requirements for the management and retention of records, such as statutory obligations, codes and standards, and customer expectations, should be identified and understood, to ensure that they are addressed by the licensee's management processes.
- 5.12. Responsibilities for maintaining and operating the records' process and the facilities for the storage of records should be clearly defined and documented. Responsibilities for records should be assigned to personnel who have the knowledge and authority to review and sentence them.
- 5.13. The legal ownership of records and the responsibilities for managing them for all lifecycle phases should be clearly established. The licensee is ultimately responsible for ensuring that there are adequate arrangements for managing and storing records associated with the licence conditions from the design phase through to the decommissioning programme.
- 5.14. The records management process should ensure that records are specified, prepared, authenticated and maintained as required by the applicable codes, standards and specifications. Records should be legible and prior to acceptance into the record storage facility, records packages should be inspected for legibility and, if necessary, quarantined pending obtaining better copies from the source. Records that cannot be improved should be marked as best available copy.

5.15. The records management process should also ensure that records:

- are [categorised](#)
- are [registered](#) upon [receipt](#)
- are readily [retrievable](#)
- are [indexed](#) and placed in their proper locations relevant to their use which may be at a number of locations with the retention times clearly specified
- are [stored](#) in a controlled and secure environment
- are stored in appropriate storage media ([Appendix 2](#))
- are [disposed of](#) in a controlled manner
- remain unchanged under normal circumstances

The key points for a records management system are provided in the [summary](#) section.

5.16. If it becomes necessary to correct errors, any revisions to records should be adequately controlled and tracked.

5.17. Storage facilities for records should be maintained to prevent damage from causes such as fire, water, air, rodents, insects, earthquakes and the actions of visitors without admission rights. The licensee should actively consider recovery of records contingency plans and back up to mitigate any such loss.

5.18. Record storage facilities may be operated by the licensee, or the licensee may choose to contract records storage to a specialist service provider. The interface between the licensee and the service provider will need to ensure that storage and retrieval arrangements are adequate. The licensee should also consider arrangements for storing duplicate sets of records; note that this might not be a complete set. These duplicate records may be important for managing emergencies or for business continuity and may be located at another equivalent records storage facility at a different location. The existence of the duplicate set of records should be identified on the appropriate record schedules.

5.19. Records that need special processing and control, such as computer codes and software, and information stored on high density media or optical disks, should be maintained and controlled to ensure that they are readily retrievable and usable, recognising changes in technology. Contingency planning should consider obsolescence of equipment to read and present data.

5.20. The facilities for control of emergencies should hold appropriate information and records [or have secure access to them] for responding to an emergency.

Categorisation of records

5.21. The organisation should establish appropriate criteria to enable it to draw up a Record Retention Schedule to identify the type and category of records it will be keeping. Record Schedules will identify the particular records to be retained. The process developed by the licensee will identify the strategy for each category of record including copying and archiving and how it will be stored i.e. a combination of hard copy, microfiche and electronic media. The importance of the records to the organisation will influence the level of control exercised on them, including the retention period, the amount of copying, the media type and the number of locations used to retain them.

5.22. The licensee should have appropriate criteria for categorising records and apportioning retention periods. These criteria should take account of applicable statutory and legislative requirements, licensee organisational requirements and national and international best practice. The licensee should make adequate arrangements for retaining records commensurate with the categorisation and retention period of the records and the lifecycle phases of the nuclear facility generating the records. Note also the comments in paragraph 5.4 above regarding the licensee's responsibilities for ensuring adequate records are kept. The record package associated with the decommissioning programme for a nuclear facility

should contain sufficient information to enable succeeding generations to safely manage and discharge the ongoing nuclear and radiation liabilities. [Appendix 4](#) provides guidance on retention periods.

Administration of records

- 5.23. All records should be readable, complete and identifiable with the product or process involved.
- 5.24. To prevent the deterioration of records during the retention period, it may be necessary to transfer records to a different medium. The transfer process should include control, and verification that the information has been transferred accurately. If any copying is necessary to maintain image quality during the retention period, this should also be controlled and verified.
- 5.25. Records should be logged and registered in an index prior to receipt into storage. The methods of logging and indexing to be used should be established before the receipt of records. The index should include:
- the title or unique identification of the record and the item, service or process it is related to;
 - nuclear facility code, plant and system code or building/level/room ID (if not a plant item)
 - the organisation or person generating the record;
 - the retention time of the record;
 - the location of the record in the storage facility;
 - revision dates and the persons approving the revisions
- 5.26. The administration of records, from creation and capture in the facilities, through to central processing and output as a delivery to the archive can be regarded as the document and records management process. This process will require adequate human and physical resources for all elements of the process. There are benefits from having a means of measuring the effectiveness and efficiency of the process and its implementation so that areas for improvement can be identified. This is normally achieved through self-assessment, auditing and review processes.
- 5.27. The licensee should have a due process for correcting or supplementing records. This process should be of the same standard as that used for the approval of the original record.
- 5.28. The correction or supplement should include the date and the identification of the person making the correction or supplement.

Electronic (Document and) Records Management System

- 5.29. Electronic (Document and) Records Management Systems (EDRMS) have many advantages particular with regard to access and the ability to readily interrogate documents and records. Licensees operating EDRMS will need to make adequate arrangements for the long term retention of electronic records, which include administration and refreshment of system architecture. A licensee will need to have an appropriate IT strategy in place to manage and maintain electronic records and databases. The management arrangements for the system will need to include appropriate access control protocols. [Appendix 1](#) provides more detail on the approach to Electronic Records Management Systems.

Receipt of records

- 5.30. The licensee should have written instructions for the preparation, despatching and receipt of records to the records storage facility. Records entering the record storage facility should be complete, legible and in a form suitable for storage. EDRMS should incorporate management protocols which enable differentiation and transition from documents in use to those which are accepted as records.

Retrieval and accessibility

- 5.31. The licensee should ensure that records are indexed, filed, stored and maintained in records storage facilities that allow their retrieval when necessary. The records should be accessible at all times during the specified retention periods. Access to locations where records are retained should be controlled. Consideration should be given to storing documents that may be necessary in emergency conditions in a records storage facility at a location away from the nuclear facility. The EDRMS should have essential back up arrangements which guarantee its functionality in emergency scenarios.
- 5.32. Records need to be properly identified to facilitate future knowledge of what they are. This will require careful design and consistent application of the 'metadata'. The arrangements for retrieval and access to records will need to be commensurate with the retention periods.
- 5.33. Management arrangements need to provide for adequate access and retrieval of records from service providers and for the safe return of records to the archive if they are removed. Records removed from archival storage should be recorded to identify them, identify the reason why and to record their return. Consideration should be given to a secure area including inspection or observation of what has been changed if anything. Formal authorisation should be given by a responsible manager to change a record preserving the legibility of all data originally recorded i.e. use of a single line to cross out incorrect data. All changes to be authorised.

Storage requirements

- 5.34. The licensee should establish a suitable records storage facility for the maintenance, preservation and protection of records, be they paper, physical items or electronic, from the time of their receipt until the time of their disposal. [Appendix 3](#) provides supplementary guidance on storage facilities.
- 5.35. If the necessary record storage conditions are unattainable, consideration should be given to the provision of a duplicate set of records stored in a separate facility at a different site. In such cases, the location and construction features of both facilities should be such that the probability of the simultaneous destruction, loss or deterioration of both facilities is sufficiently low.
- 5.36. Records shall be stored in such a manner as to prevent deterioration. Examples of storage considerations for different storage media are given in [Appendix 3](#).
- 5.37. Consideration should be given to segregating records in the storage facility associated with different facilities or projects to facilitate ease of 'batch transfer' at some future date.
- 5.38. Electronic storage media should be robust and adequate arrangements developed to 'future proof' the records held in this medium. The licensee will need to allocate sufficient physical and human resources to refresh electronic storage media to take account of advances in technology and obsolescence.
- 5.39. The records storage facility must be able to cope with the type and nature of the records being sent to it. If the licensee decides to outsource storage to a specialist service provider the service provider should be vetted to ensure that it is capable of handling the records that are to be sent to it. This will include retrievability and security requirements and, if appropriate, processes for handling hazardous material. A robust specification needs to be placed on the specialist service provider and periodic checks, by both the service provider and the licensee, made to ensure that key parameters of the storage service are being adhered to.
- 5.40. Some records may be physical items which will require different considerations for storage from paper or electronic records and there is a potential contamination issue to consider.
- 5.41. Record storage facilities must take into account the potential contamination of records with hazardous substances, including radioactive contamination.
- 5.42. Records belonging to different organisations which are stored in the same records storage facility need to be clearly identified.

Disposal

5.43. The licensee should identify who is responsible for the transfer or disposal of records. Authorisation to transfer or dispose of records should only be given by a specifically identified responsible manager who should record this decision and identify by unique reference the records involved. This authorisation should be documented and retained. The records system should be designed to provide adequate prompts to identify when a record reaches its review point prior to consideration for disposal. There should be adequate arrangements in place for reviewing records that have reached the end of their retention period. Before final disposal an appropriate review should be undertaken and approval for destruction or continued retention given by the licensee. Arrangements will need to reflect the involvement of contractors where they are used to store the records.

Summary

5.44. The following summary points should be considered:

- Effective management of records requires senior management support and commitment.
- An effective records management system has to be adequately resourced with responsibilities clearly identified.
- The records system must comply with appropriate legislation.
- When more than one organisation is involved in record keeping during the various lifecycle phases of a facility the responsibilities and interfaces should be clearly defined.
- The records management system should be designed to enable managers to easily sort and sentence records.
- The ownership of records during storage should be identified.
- Due consideration should be given to storage location.
- Human Factors should be considered carefully when designing a records management system for effectiveness and ease of use.
- The records management system should identify what records should be kept and for how long.
- Consideration should be given to storing records on a project/facility basis to facilitate easier retrieval and providing an adequate description of what they are.
- The design of the record keeping arrangements should be able to cope with technological and organisational changes.
- Consideration should be given to the management of records generated electronically as part of an operational activity (e.g. data logger)
- The records management system should cover the full lifecycle of the facility from design through to de-licensing

6. REFERENCES

- 1 *ONR How2 Business Management System. Guidance: Technical Assessment Guides.*
http://www.hse.gov.uk/nuclear/operational/tech_asst_guides/index.htm
- 2 *Safety Assessment Principles for Nuclear Facilities 2014 Edition* [Safety Assessment Principles for Nuclear Facilities](#) 
- 3 *Western European Nuclear Regulators' Association Reactor Harmonization Group. (WENRA) Reactor Reference Safety Levels.* WENRA. January 2008. www.wenra.org.
- 4 *IAEA Requirements Document GSR PART 2 'Leadership and Management for Safety*
<http://www-ns.iaea.org/standards/documents/default.asp?s=11&l=90&sub=10&vw=1#sf>
- 5 *IAEA Guidance Document GS-G-3.1 'Application of the Management System for Facilities and Activities'*
<http://www-ns.iaea.org/standards/documents/default.asp?s=11&l=90&sub=10&vw=2#sf>

Note 1: ONR staff should access the above internal ONR references via the How2 Business Management System.

Note 2: International Atomic Energy Agency (IAEA) documentation
A listing of IAEA documents, showing current status may be found at:
<http://www-ns.iaea.org/committees/files/CSS/205/status.pdf>

7. GLOSSARY AND ABBREVIATIONS

ONR	Office for Nuclear Regulation
PRO	Public Records Office
NIA65	Nuclear Installations Act 65
IRR17	Ionising Radiation Regulations 2017
FOI 2000	Freedom of Information Act 2000
HSE	Health and Safety Executive
HSWA74	The Health and Safety at Work etc Act 1974
IAEA	International Atomic Energy Agency
RSA93	Radioactive Substances Act 93
SAP	Safety Assessment Principle(s)
TAG	Technical Assessment Guide(s)
TEA	The Energy Act 2013
WENRA	Western European Nuclear Regulators' Association

8. APPENDICES

APPENDIX 1: ELECTRONIC RECORD MANAGEMENT SYSTEM

- A1.1. So far as LC6 & 25 are concerned, the requirement is for documents and records required, issued or made in pursuance of the conditions to be preserved. How the licensees do this is ultimately a matter for them. This appendix provides some help in identifying what ONR would expect from a prudent licensee. The retention of records in electronic form is consistent with the requirements of the licence condition. It has been held that computer records are "documents" for such purposes.
- A1.2. Another important aspect is that personnel inputting data into such systems will be required to verify that the information entered was an accurate representation of the input data. The underlying principle here is that first-hand knowledge (or provenance) of the information used to establish the record is essential to personnel inputting the data.
- A1.3. The possibility of technology becoming obsolete with the attendant possibility of records not being retrievable is an important consideration for an electronic records management system.
- A1.4. Detailed guidance on the preparation of electronic images of documents that may be required as evidence is given in relevant British Standards (see [Appendix 5](#)). There are some practical safeguards that must be considered when dealing with the storage of records by electronic means. These include:
- i) The continued ability to read the data must be assured taking into account the technological changes that may occur between making the record and its subsequent retrieval. (This may mean periodically upgrading the record in line with new technology).
 - ii) The integrity of the computer program should be confirmed. (e.g. Is it a proprietary product? Has it been adequately tested and de-bugged?).
 - iii) Evidence of maintenance of the system hardware and the continuing availability of software to read the electronic record.
 - iv) Assurance of the security of the system including the use of passwords and control of software amendment must be available.
 - v) Sufficient back-up of recorded data to guarantee preservation of the information so that records can be regenerated in the event of loss/deterioration of the original. Alternative locations for record storage should be used.
 - vi) A system for recording and storing data must prevent the degradation of data.
 - vii) Readily obtainable data from the storage system by "authorised persons".
 - viii) Copies (in whatever medium is being used) must be (or be able to produce) an exact representation of the original record. Controls must be in place to ensure that the transfer is accurate. Quality control checks of the image to be stored e.g. immediately following scanning must be an integral part of the system.
- A1.5. There is an ever increasing use of electronic means to generate and store records. In many instances records generated electronically do not exist in other forms. Records stored electronically or photographically are usually effectively indexed and as such are readily retrievable. BS 10008: 2014 Evidential weight and legal admissibility of electronic information together with BIP 0008-1-3: 2014 – Evidential weight and legal admissibility of information stored electronically. Code of practice for implementation of BS10008.
- A1.6. The management of records in the nuclear industry is a considerable task, not least due to the volume and diversity of them. This may make the transfer from paper to electronic form very attractive. There are no legal barriers to this provided that the above safeguards can be met, particularly with respect to the quality and accuracy of images.
- A1.7. In essence licensees have to decide what the risks are from both the legal and commercial aspects, particularly regarding the disposition of original records. It would be unlikely for a company to conclude that all its documents were suitable for imaging and destruction or that none were. It is unlikely that licensees will wish to destroy all original records following imaging.

Documents such as consents, approvals, licence instruments, the licence itself and safety cases, for example, should be kept as original documents.

A1.8. Admissibility and weight are two factors that must be considered with respect to evidence in court. It is the accepted view that electronic records will be admissible, particularly if they have been properly managed and controlled. Copies of documents, photographs and microfiche have been admissible for years. It is the weight that the court gives to the evidence that is uncertain and where an original document is available this should be produced.

A1.9. Generic IAEA guidance on an EDMS can be found in IAEA Safety Guide GS-G-3.1 Annex I.

APPENDIX 2: MEDIA FOR RECORD STORAGE

A2.1. Examples of media which may be used to store records are:

- paper with a pH (acidity level) of between 6 and 9;
- film, 35 mm roll;
- silver–gelatin type microfilm or X ray film;
- microfiche;
- magnetic tape or disc;
- optical laser disc;
- hardware such as graphite samples, weld samples or other materials which have been or are able to be subjected to qualification testing;
- electronic firmware (computer or component) such as thermal luminescent dosimeters (short term use only);
- media for records that need special processing and control, such as computer codes and software and information stored on high density media or optical discs, which will need to be maintained and controlled to ensure that the records are readily retrievable and usable

A2.2. For retention periods of up to 50 years, as required by LC 5(3) the requirements of PD5454:2012 Guide for the storage and exhibition of archival materials should be examined.

A2.3. The following media are considered to be acceptable for records with retention periods of up to 30 years:

- Paper copy retained in a controlled environment with an indexing system to allow retrieval in a reasonable time, for example, one working day;
- Microfilm or other microforms prepared appropriately and stored in adequate conditions;
- Punched paper tape or cards where the information is stored as physical artefacts on a paper/card medium. Such media will need to be stored in equivalent environmental conditions to hard paper copy;
- Magnetic media stored and maintained appropriately, such as disc packs, storage modules or disk cartridges and magnetic tape on open spool.

A2.4. The following media are considered to be acceptable for records with retention times of up to five years:

- Any of those media considered acceptable for retention times of up to 30 years, plus optical discs. Records using optical disc media may be held for periods beyond five years provided that periodic checks are made to check for any deterioration in image quality. The record will need to be copied onto a new optical disc if any deterioration in image quality is found. This may be before the manufacturer's certified lifetime of the original disc is exceeded.

A2.5. The following media are considered to be acceptable for records with retention times of up to three years:

- Any of those media with retention times of five years or 30 years, plus flexible disk cartridges (floppy disks) and magnetic tape cartridges stored and maintained appropriately.

A2.6. The preparation and storage requirements for the different media should reflect the manufacturer's guidance for the media.

APPENDIX 3: DOCUMENT AND RECORD STORAGE FACILITIES

A3.1. General

A3.1.1 All quality documents and records should be securely stored and maintained in such a way that they are readily retrievable in facilities that provide a suitable environment to minimise deterioration or damage and to prevent loss.

A3.1.2 The type of record storage facilities required depends on factors such as the records media, environmental conditions (including insect or fungal infestation), safety significance (duplication of copies in diverse locations), duration of retention, security. Records received will have to be retained in an appropriate facility prior to acceptance into an archive store or prior to processing into another media, for example; hard copy to scanned copy.

A3.1.3 Records should be retained in facilities appropriate to the media. Care should be taken to ensure that record media requiring different storage environments are not stored in the same area. In particular, cellulose nitrate film should be stored in a separate facility.

A3.1.4 Unsuitable environments can cause more damage to records than any other single factor. A dry or polluted atmosphere may lead to embrittlement of documents, dampness and poor ventilation may cause the growth of mould; excess heat may accelerate chemical damage. All three conditions can lead to irreparable damage to records. Contingency actions should be identified by the licensee if conditions monitored reach and exceed set values. Careful control and observation of temperature, humidity and ventilation within the records facility is therefore essential. In general, low temperatures with adequate air movement are preferable.

A3.1.5 Fire precautions, including limitations on the distance to travel to reach means of escape and the physical dimensions of the storage facility, are the subject of national legislation and local by-laws. The fire precautions adopted, however, should be designed to protect the contents and structure of the facility from damage caused by fire fighting operations, as well as to ensure the safety of staff and limit the fire to its source. The possibility of fires or explosions in adjacent facilities and the proposed type of fire fighting chemicals to be employed to counter such events should be taken into account when the facility is chosen.

A3.1.6 Loose material should not be permitted and smoking and accumulation of food matter should be prohibited at all times in and around the records storage facility. When siting storage areas consideration should be given to the store being away from highly flammable and corrosive materials and proofed from the potential for flooding from the sea and other water sources.

A3.1.7 Precautions should be taken during the storage and handling of records to avoid finger marks, dust or scratching on microfilm records (by the provision of suitable hand covering), unnecessary bending or cracking of paper (by the suitable positioning on adequately designed shelving) and failure of components due to static discharge (by the provision of static handling precautions).

A3.1.8 Records entering the records storage facility should be registered. To protect the integrity of the records, the facility should be secure, and wherever possible copies of archived records should be used for reference purposes rather than permitting the removal of the master record.

A3.2. Microfilm storage facilities for up to ten years

A3.2.1 The following storage conditions are considered suitable for the storage of microfilm records for a time not longer than that sufficient for general business purposes. Such a time might be ten years, but could vary depending on specific conditions.

Relative humidity and temperature requirements for the storage of microfilm

A3.2.2 The relative humidity of the storage facility should not exceed 60% and the temperature should not rise above 25°C. Rapid changes of humidity and temperature should be avoided.

Protection of microfilms against fire and water

A3.2.3 Microfilms using safety film are difficult to ignite and combustion speed is low. To provide effective protection of microfilms against fire, as much attention should be paid to the presence of steam as to high temperatures. The protection available in a given room should take into consideration conditions special to that room and also the following general conditions.

A3.2.4 Microfilm stored at 40% relative humidity can withstand a dry heat of 120°C for a time of 24 hr without appreciable loss of legibility and printability. At a dry heat of 150°C some distortion may take place after 6 hr but individual microfilms of texts or figures are still printable. The action of dry heat of 180°C for at least 6 hr causes deformation of microfilms and reproduction generally becomes impossible.

A3.2.5 In the presence of water vapour, temperatures of 90–110°C produce serious distortions and cause adhesion of coils or surfaces in contact; prolonged action or condensation will make the emulsion melt. Fireproof cabinets and safes thermally insulated by water vapour production are therefore not suitable for storing microcopies unless they have an inner moisture-proof chamber or the films are placed inside suitably sealed airtight containers. To obtain complete protection from fire, safes or cabinets should be placed in premises which are themselves fireproof. Microfilms should be protected from the action of water resulting from leaks, fire sprinklers or flooding, by being stored above basement levels on shelves at least 150 mm from the ground. If films are immersed in water, allowing them to dry, even partially, will cause the layers to stick together. The films should be placed in water filled containers until they can be washed and dried properly.

Chemical contamination

A3.2.6 Various noxious emanations can cause slow deterioration and a gradual fading of the image on film. Danger is presented by peroxides which may originate from bleaching agents, glues, varnishes and other products used in manufacturing storage cabinets for film containers. Hydrogen sulphide, ozone, sulphur dioxide, sulphur trioxide, ammonia and oxides of nitrogen are the most common, but not the only, atmospheric gases which harm film. Such fumes should be eliminated or an alternative store found.

A3.2.7 Chemical products in the immediate vicinity of the films may also cause the presence of other impurities in the atmosphere. If dust and liquid particles suspended in the air are deposited on the microfilm they may impair its legibility and cause permanent scratching. Microcopies on silver image film should be kept neither with other photographic records which do not conform to these recommendations, nor with those films explicitly excluded, such as microfilm on a nitrate film base. Cross contamination between microcopies can occur by the transfer of free thiosulphate to sodium (or ammonium) thiosulphate free film if they are stored with the emulsion sides in contact. Radiographs and other photographic media should be stored in chemically benign envelopes. Multiple films stored in envelopes should be separated by benign sleeves or separators.

A3.3. Additional recommendations for archival of microfilms in excess of ten years

Air purification

A3.3.1 Air should be filtered to remove dust, purified of noxious gases and circulated by means of forced draught.

Relative humidity

A3.3.2 If sealed airtight containers are not used, the air in the archival storage facility should be conditioned to maintain the relative humidity at a level between 20 and 40%. If air conditioning is used, dehumidifiers using calcium chloride or other chemical desiccants should not be used. An electrical dehumidifier is recommended. If dehumidifiers are used, they should be of a type that does not produce rapid changes in the relative humidity.

Temperature of the archival premises

A3.3.3 The temperature in the archival storage area should be maintained between 15 and 25°C, but preferably should not exceed 20°C. If film which has been stored at a low temperature is handled in a room where the temperature or relative humidity is comparatively high, condensation will occur on the cold film surfaces. In these

circumstances the film should not be removed from its closed container or the place where it is stored until the storage temperature has been brought up to the approximate temperature of the room where the film is to be handled.

Containers

A3.3.4 The following two types of container are recommended:

- (1) The closed non-airtight container.
- (2) The sealed airtight container.

A3.3.5 If the recommendations for relative humidity and temperature of the archives are observed, containers for storage of microfilm can be of the closed non-airtight type. Sealed airtight containers should be used if there are no other means of protection against the danger of an ambient atmosphere of which the relative humidity or temperature goes beyond the limits recommended in this appendix or which contains chemical impurities or dust. The containers used should be made from materials meeting the requirements below. These containers may be placed in boxes of paper or board, but such boxes should not be used alone.

General precautions for the long term protection of microfilm records

A3.3.6 The use of non-corroding materials for containers is recommended but whatever the materials used for the containers, their corrosion resistance coating and their airtight seals should not melt, ignite, decompose, develop fumes, distort or be subject to excessive dimensional changes when subjected to a temperature of 150°C for 4 hr.

A3.3.7 Care should be taken to avoid the deterioration or damage which may result from the rust, rubber joints, rubber bands and gum on certain types of envelope, and of lignin and other peroxide forming substances contained in certain wooden materials.

A3.3.8 Microcopies stored in roll form may be mounted either on reels or on cores. Rolls more than 30 mm long wound on cores should be laid flat unless the core itself is carried on a horizontal spindle which prevents the lower part of the film from supporting the load of the core and its contents.

A3.4. Additional precautions for sealed airtight film containers

Fire

A3.4.1 The container should be of a type which will prevent steam reaching the film in the event of fire. Containers with a high resistance to corrosion are recommended. The container and its airtight seal should withstand an excess pressure inside the container of 70 kPa without rupture of the seal or other injurious effects.

Relative humidity

A3.4.2 The relative humidity inside a sealed airtight container should be within 20 to 40% at the storage temperature. Relative humidity exceeding 60% encourages the formation of mould which, in time, can completely destroy the image. Below 15% the film tends to curl and become more brittle as the relative humidity decreases.

A3.5. Storage facilities for paper

Relative humidity and temperature requirements for the storage of paper

A3.5.1 The relative humidity of the storage facility for paper should be within the range 55 to 65% and the temperature should be within the range 13 to 18°C. However, if the paper is in bound volumes and is little used, it may be stored at a relative humidity of 40%.

A3.6. Storage facilities for magnetic tape or disc, optical laser disc, hardware, electronic firmware

A3.6.1 Magnetic tapes or discs, optical laser discs, electronic firmware and general hardware records should be archived in accordance with the manufacturer's requirements or the component media. The retention requirements should be consistent with the life expectancy of the media and should provide for rejuvenation and backup.

APPENDIX 4: RECORD RETENTION AND STORAGE

A4.1. The licensee will need to have criteria for determining the records to be retained and the retention period for the different lifecycle phases of the facility including the record package associated with the decommissioning programme. Licensees should take account of relevant legislative and statutory requirements when identifying the records to be retained and the retention periods. The retention time for records is normally 30 years (or more for radiological records) unless approval is given for shorter periods. Licence Condition 6 (2) states a preservation period of ‘...30 years or such other periods as the Executive may approve.’ Whilst LC5 (3) refers to a record preservation of 30 years and 50 years depending on the circumstances. The licensee may standardise the record scheme as follows:

- (a) greater than 30 years;
- (b) 30 years;
- (c) 5 years;
- (d) 3 years.

A4.2. Senior management will need to establish storage and location requirements for the maintenance, preservation and protection of records and associated test materials and specimens from the time of their receipt and their disposal. A record storage process will need to include the following:

- a description of the document or record storage facility;
- a description of the filing system to be used;
- a method for verifying that the records received are in agreement with the transmittal document and that the records are in good condition;
- a method that the records agree with the records index;
- rules governing access to and control of the files;
- a method for filing corrected or supplemental information and disposing of records that have been superseded;
- periodic checking to ensure that the records are not damaged, deteriorating or missing.

A4.3. Continued ability to read the data will need to be ensured, with account taken of any technological changes that occur. Any changes in reading equipment and technology should only be made after consideration of how the capability to access and read existing recorded data will be maintained. This may necessitate transferring data to new media. In such cases checks will need to be carried out to ensure that the data are readable and accessible and that they are an exact copy of the original.

A4.4. Paper records will need to be firmly attached in binders or placed in folders or envelopes for storage on shelves or in containers. Steel file cabinets or safes are preferred.

A4.5. Records that are processed by special methods will need to be packaged and stored as recommended in the manufacturer’s instructions and in line with applicable standards. Examples are: radiographs, photographs, microfilm, magnetic tapes, microdiskettes, laser discs and those records that might be sensitive to light, pressure, humidity, magnetic fields, dust and temperature.

A4.6. Where appropriate record storage facilities may need to accommodate contaminated records and physical specimens. The requirements for storing physical samples should be clearly defined and consideration given to preservation, storage environment, contamination (from the sample itself and cross-contamination from other materials and samples), identifying and marking items with a unique identification and periodic inspection checks.

A4.7. Record storage facilities will need to protect the contents from possible damage or destruction by such causes as fire, flooding, insects and rodents and from possible deterioration under adverse environmental conditions of light, temperature and humidity.

A4.8. The following factors among others will need to be considered in the construction of a storage facility:

- location and security

- type of construction, including structural features and internal surface treatment
- pipework layout and drainage
- control of ventilation, temperature and humidity
- prevention, detection and fighting of fires
- protection against electromagnetic radiation

APPENDIX 5: SELECTION OF RELEVANT INFORMATION

Selection of Relevant Information

- NS-INSP-GD-006: Documents, records, authorities and certificates
- NS-INSP-GD-025: Operational Records.
- ISO 15489-1:2016 Information and documentation - records management. Part 1: General (currently under review).
- ISO/TR 15489-2:2001. Information and documentation - records management. Part 2: Guidelines
- BIP 0025-1:2002. Effective records management. A management guide to the value of BS ISO 15489-1.
- BIP 0025-2:2002. Effective records management. Practical implementation of BS ISO 15489-1.
- PD5454:2012 Guide for the storage and exhibition of archival materials
- BS ISO/IEC 27001:2013. Information technology. Security techniques. Information security management systems: Requirements.
- BS 10008: 2014. Evidential weight and legal admissibility of electronic information.
- BIP 0008-1-3:2014 – Evidential weight and legal admissibility of information stored electronically. Code of practice for implementation of BS10008.
- BS 1153: 1992: Processing and storage of silver-gelatine-type microfilm.
- Requirements for the Approval of Dosimetry Services Under the Ionising Radiations Regulations 2017. Part 3 - Co-ordination and Record Keeping.
- IAEA Safety Requirements No GSR PART 2 Leadership and Management for Safety
- IAEA Safety Guide No. GS-G-3.1 Application of the Management System for Facilities and Activities
- BS EN ISO 9001: 2015 Quality management systems – Requirements

Useful Links

- [BSI Group Shop](#) (Document search site)
- [USNRC Records Management](#)
- [National Archives](#)
- [IAEA Home Page](#)
- [IMG 02 NDA Record Retentions Schedule](#)
- [IAEA – GS-G-3.1, 'Application of the Management System for Facilities and Activities'](#) (http://www-pub.iaea.org/MTCD/publications/PDF/Pub1253_web.pdf)
- [Nuclear Quality Knowledge](#) – published by Chartered Quality Institute
- Additional guidance when considering records of radioactive material:
 - <http://www.onr.org.uk/safeguards/accountancy.pdf>
Guidance on International Safeguards and Nuclear Material Accountancy at Nuclear Sites in the UK

- <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32005R0302&from=EN>
The legal setting for Safeguards records keeping/systems and reporting as stipulated by the European Commission (the safeguards regulator)
- <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006H0040&from=EN>
EC recommendations on the implementation of the regulation above
- NS-INSP-GD-032 Accumulation of Radioactive Waste

APPENDIX 6: SHORT-FORM GUIDANCE ON ASSESSING THE ADEQUACY OF A LICENSEE'S ARRANGEMENTS FOR MANAGEMENT OF RECORDS

The following "short-form" assessment guidance is provided to assist specialist Inspectors judge the adequacy of a licensee's arrangements for managing records during an intervention. The appendix extracts the key points from the more detailed guidance in the main body of the TAG and identifies links back to the relevant paragraphs.

This short form guidance is complementary to the inspection guidance for site inspectors contained in NS-INSP-GD-006.

	Key Points (referenced to main body of the TAG)	Supporting Considerations (referenced to main body of the TAG)	RAG
PEOPLE	<p>Management Commitment (5.1) There is demonstrable commitment from senior managers to the records system (5.1) Staff are aware and motivated to maintaining adequate records (5.1) Process owners believe in, offer support to and have adopted the system effectively (5.1)</p> <p>Responsibilities (5.5, 5.12, 5.13) The responsibilities for management and staff are clearly defined Document and records management responsibilities are identified in job profiles and descriptions Document and records management responsibilities are reflected in controlling procedures Work specifications include specific mention of considerations relating to document and records management</p> <p>Resources (5.3, 5.26) The organisational structure for document and records management has been systematically designed to meet operational demands The numbers of SQEP deployed match the demands of the organisational structure Physical resources and infrastructure have been systematically designed to satisfy operational demands</p>	<p>Management Commitment (5.1)</p> <ul style="list-style-type: none"> Evidence of management behaviours and actions that confirm tangible support for the records management process; Evidence of management time being prioritised to accommodate records issues; Evidence of staff awareness of records as a consideration and the process for dealing with them; <p>Responsibilities (5.5, 5.12, 5.13)</p> <ul style="list-style-type: none"> Roles and responsibilities clearly defined; (5.12) Formal job descriptions incorporating records responsibilities <p>Resources (5.3, 5.26)</p> <ul style="list-style-type: none"> A systematic analysis of the staff needed to manage and operate the system has been undertaken Sufficient numbers of SQEP staff; Appropriate training packages; Adequate physical resources for generation, management and retention of records; Physical infrastructure is capable of maintaining the integrity of document and records throughout the retention period: 	
	<p>Process Design (5.14, 5.15) The process is clearly defined and documented (5.5) The design of the process incorporate the essential features of a document and records management system (4.5) There is a clear definition of what records are required (5.10) Relevant legislation and compliance arrangements are identified? (5.11) There is a 'golden thread' from LC compliance to working level documentation The longevity of the records is assured (4.13) The long term management and stewardship arrangements for the records clear (5.13) The facilities for control of emergencies have the necessary speed of access to retained documents and records (4.20)</p> <p>Interfaces (5.3, 5.13) Interfaces are clearly defined, understood and well managed The ownership of records is clearly defined (5.13) Transitional arrangements are clearly defined (5.9)</p> <p>Documentation (5.5) The controlling documentation is complete and appropriate There is a clear definition of what records are required and why (5.4, 5.6)</p> <p>Implementation (5.26) There is clear evidence of effective implementation and review of the system The system has clear and appropriate operational and performance requirements The system is subject to self assessment, audit and independent review against documented procedures and performance criteria</p>	<p>Process Design (5.14, 5.15)</p> <ul style="list-style-type: none"> Categorisation; (5.21, 5.22) Administration of records; (5.23 to 5.29) Registration on receipt; (5.30) Retrievability and accessibility; (5.31 to 5.33) Indexed and in their proper locations relevant to use; (5.25) Identification of 'Metadata'; (5.25) Storage in a controlled and secure environment; (5.34 to 5.42) Storage Media; (Appendix 2) Remain unchanged under normal circumstances; Ownership and transfer of ownership; (5.13) Disposal: (5.43) <p>Interfaces (5.3, 5.13)</p> <ul style="list-style-type: none"> Organisation interfaces; Document controllers and process owners; Licensee and contractors (Contractor mgt of records); (5.8) Site and office; Design, Manufacture, Construction and Operation: <p>Documentation (5.5)</p> <ul style="list-style-type: none"> Controlling procedures; (5.10) Record retention schedule (5.6, 5.7, 5.22) (Appendix 4) Record schedules (Process owners) (5.22) Stakeholders - Office, site, operations Contractors: <p>Implementation (5.26)</p> <ul style="list-style-type: none"> Effective and comprehensive roll out of the system; Widespread adoption of the system by the process owners; Evidence of audit and surveillance of the implementation; Evidence of review and confirmation of the system; Evidence of independent review of the system: 	
	<p>Infrastructure Electronic (Appendix 1) The electronic document platform is fit for purpose and has appropriate features to future proof it There is adequate software support for the system to meet the operational performance requirements Electronic records requirements are specified for contractors and there are effective human and physical interfaces to deal with this There are training packages available for the range of users of the system</p> <p>Paper and Physical Samples (Appendix 2) The physical infrastructure is capable of handling both paper and physical records The system design is appropriate (e.g. central final repository, local arrangements prior to incorporation into final repository) There are arrangements to manage the transition between the project phases (e.g. design, manufacture, construction, operation) There are clear arrangements for managing interfaces with contractor systems</p>	<p>Electronic (Appendix 1)</p> <ul style="list-style-type: none"> Capacity and capability of electronic platform; (5.38) Long term viability and future proofing of electronic records; (5.19) Security and access rights to the system: <p>Paper and Physical Samples (Appendix 2)</p> <ul style="list-style-type: none"> Extent of paper records; (Appendix 2) Physical samples (5.41) (Appendix 2) Storage facilities (Design, Manufacture, Construction, Operation, long term) (Appendix 3) Design of storage facilities (resistance to fire, water, air, rodents, insects, earthquakes); (5.17, 5.39)) Operation of storage facilities; (5.18) Maintenance arrangements for facilities; (5.17) Capacity and capability of storage facilities to maintain records (including potentially contaminated items); (5.40) Security and access protocols and admission rights to facilities; Arrangements for maintaining integrity of records: (5.16, 5.18) 	
PLANT			



Supplementary Considerations

- Other Regulatory Bodies records identified
- Consistent terminology used
- Integrated records management system for all records and identification of what is driving the retention of the records
- Forward work planning
- Self-assessment and internal regulatory challenge
- 30 year period refers to liability in the Nuclear Installations Act (NIA65) - retention times for lifetime records may extend well beyond 30 years and should be designed to meet statutory and legislative requirements
- Communication and dissemination of document and records management information
- Full scope of records associated with each Licence Condition
- Records schedule for each LC
- Overall document map to explain the extent and interrelationship of processes and procedures
- Key processes and procedures complete
- Arrangements/considerations for 'Operational Records' LC25