International Atomic Energy Agency

Decommissioning of Nuclear Facilities

Record keeping

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Lesson Objectives

• Identify issues associated with the establishment of a records management system

• Explain the process for selecting appropriate decommissioning records, the document types and hierarchies

• Describe the various records media types available to users for record keeping purposes

• Describe lessons learned and concerns relevant to record keeping for, during and from the decommissioning process
Introduction

- Records are generated at each step in the design, operation, shutdown and decommissioning of a nuclear facility.
- Many of the records are important to the safety and cost-efficient planning for decommissioning.
- The early development of a systematic approach to records management to support decommissioning is important.
- Numerous lessons learned have been developed that indicate the necessity of an effective records management system.

RMS - The Record Management System

- Comprehensive
- Flexibility for future subsystems
- Ease of use
- Efficiency
- Redundancy
- Documented
- Future use
- Compliant with regulatory requirements
RMS - Management Responsibilities

- Establish records management requirements
  - Define relationships
  - Assign responsibility and authority
  - Assure regulatory requirements are met
- Manage and maintain the RMS
- Decide what records to maintain
- Control access to the RMS
- Provide quality assurance of records
- Determine specific technical approaches to the RMS
  - Records storage and retrieval
  - Backup and secondary methods

RMS - Typical Organization

Corporate → Quality Management → Site Manager

Audit → RMS → Technical Mgt → Execution

Record keeping → Archive
RMS - Transfer of Ownership

• At the end of useful operating life
• Industry consolidation
• Economic incentives
• At the end of a decommissioning cycle

Document Hierarchy

• Standards - international and national
• Laws and legislation
• Regulations and directives
• Policy statements
• Requirements
• Program manuals
• Technical basis documents
• Procedures
• Work directives
Document Types

- Contracts
- Transmittals and Submittals
- Information documents, Safety bulletins
- Engineering documents
  - Design and changes
- Reports
  - Production
  - Maintenance
  - Quality Assurance
- Change notices
- Personnel actions
- Monitoring data (ES&H, QA/QC)

Documents – Example Filing System

- Organization
- Subject
- Purpose
  - Submittal
  - Letter (external or internal)
- Type
  - Procedure
  - Drawing
  - Memo
- Work breakdown structure
  - Safety, engineering, administration
  - Planning, construction, operation, closure
Documents - Change Control

- Change number
- Type change
- Purpose and basis for the change
- File reference and revision number
- Document preparation
  - Draft, publication, changes
- Review and approval
  - Calculations
  - Drawings

Documents - Distribution Control

- Controlled copies
  - No duplication of controlled copies
  - Sign for each revision
  - Return original or document its destruction
- Post record of changes at the front of the document
- Effective date on each change
  - Allow time to post
  - Allow time to train
Decommissioning Records - Storage

- Protection versus availability
- Environmental controls
- Backups
- Information systems
- Replacement
- Archive standards

Decommissioning Records - Criteria

- Is record needed to support continued safe operation?
- Is record needed as a license requirement?
- Is record needed to quantify/characterize waste?
- Is record needed for future decommissioning tasks?
- Is record needed for long-term care/maintenance?
- Is record needed to preserve exposure information?
- Is the record new data since last records review?
- Is record needed in potential litigation?
- Is record one that should be retained although not directly related to operations or decommissioning?
- Is record considered to be non-permanent?
Records - Design and Construction Data

- Site characterization, geological, background
- As built drawings
- Design calculations
- Construction photographs (detailed captions)
- Construction modifications and drawings
- Construction procurement records
- Engineering codes
- Equipment/ component specifications
- Construction material samples
- Quality certifications
- Preoperational testing and commissioning
- Preliminary decommissioning plans

Records – Before Decommissioning

- Decommissioning strategy selection document
- Decommissioning plan
- Decommissioning project QA Program
- Decommissioning safety assessment and reports
- Work packages
- Manufacturing and as built records
- Initial radiological surveys
- Environmental assessment reports
- Project management plan
- Funding and financial documents
- Licensing documentation
- Decommissioning organization
- Waste management plan
Records – After Decommissioning

- Facility status at end of each phase
- Personnel dose records by activity
- Safety performance records by activity
- Hazardous material waste management records
- Released material records
- Photographs/ movies during decommissioning activities
- Details of abnormal events
- Project progress reports
- Intermediate and final survey reports
- Routine surveillance maintenance and monitoring
- Lessons learned

Decommissioning Records - Considerations

- Legal/ regulatory requirements
- Volume of documentation
- Historical format
- Type of documentation
- Search retrieval requirements
- Security of records
- Cost to implement versus long term management
- Time scale for retention (decommissioning strategy)
- Suitability for future use
Records Media - Examples

- Hard copy
- Microfilm/ microfiche
- Magnetic tape/ disk
- Optical disk/ CD/ DVD
- Scanning/ OCR
- Digital records
  - TIFF
  - PDF
- Photographs and clips

Records Media - Indexes

- Index method
  - Unique number
  - Keywords
  - Date
  - WBS
  - Author
  - Department
  - Type document
  - Document title
- Index fields
  - Size
  - Number
  - Type
Records Media - Photographs and Video

Records Media - Electronic Files

• Control
  • e-mail
  • Changes
  • Filing

• Hardware
• Operating systems
• Programs
Typical Record Keeping Concerns

• Late realization of need to start compiling key decommissioning records

• Avoidable loss of institutional control of records (and institutional knowledge) critical to the success of the decommissioning process

• Inability to access records due to changes in records storage technology

• Duplicate records should be maintained in at least two separate secure locations

Typical Record Keeping Concerns (cont’d)

• Definition of records that will constitute the project data package and that will be available to both operator and regulator staff to document the process used for successfully completing decommissioning. Copies of this package should be readily available for auditing

• If it is not properly and accurately documented, it cannot be expected to be performed properly by others or even accepted by others as having been performed
Lessons Learned in Records Management

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<th>Problem category</th>
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<tr>
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Summary

• Effective records are necessary to support a cost effective decommissioning activity

• Good records require planning

• Records must be easily retrievable to be useful

• Technological changes may cause records retention methods to become obsolete
References

• IAEA WS-R-2
• IAEA Safety Guide WS-G-2.1
• IAEA Safety Guide WS-G-2.2
• IAEA Safety Guide WS-G-2.4
• IAEA DS 332 – Release of Sites from Regulatory Control on Termination of Practices
• IAEA DS 333 – Decommissioning Safety Requirements
• IAEA TRS #411