

RECORD AND ARCHIVAL SYSTEM FOR THE MONITORING PERIOD OF A SURFACE DISPOSAL FACILITY

FO. BOURSIER
ANDRA – Disposal facility Department

ABSTRACT

Within the framework of its missions, the French Radioactive Waste Management Agency (ANDRA) ensures more particularly the disposal of solid short-lived low- and intermediate-level waste in two surface disposal facilities also managed by ANDRA. The *Centre de la Manche* was the first of those facilities, and it remained in operation for 25 years. Shipments of waste packages to the facility stopped in 1994 and approval is pending for the facility's transition into its monitoring period.

ANDRA has set up a structure responsible for identifying all data and documents deemed useful for the knowledge and understanding of the site. Transmitting those data and documents to future generations is the Agency's major objective.

This paper presents that structure, its objectives and associated means. It also provides a detailed description of the constitution of the document collection, including sorting and identifying relevant items over the long term. The transfer of documents and data on a perennial support is also addressed, as well as details concerning archival storage.

The maintenance of industrial "memory" is essential for safety purposes (in case of intervention during the monitoring period) and contributes to the improvement of public acceptance of the long-term waste management carried out at the disposal facility.

ISSUES AT STAKE AND OBJECTIVES

The *Centre de la Manche* Disposal Facility occupies an area of approximately 15 hectares (37 acres) close to the COGEMA reprocessing plant at La Hague.

The facility was authorised by decree in 1969 and remained in operation until June 1994. Some 525 000 m³ of waste have been disposed of there. The Centre was the first French surface disposal facility for short-lived low-level and intermediate-level radioactive waste.



- *Tumulus of waste packages* -

In 1991, work started to install the cover in order to complete the isolation and protection of the waste packages.

The cover represents the last step before the disposal facility may enter the 300-year monitoring period necessary for the radioactive elements disposed of at the facility to undergo radioactive decay.

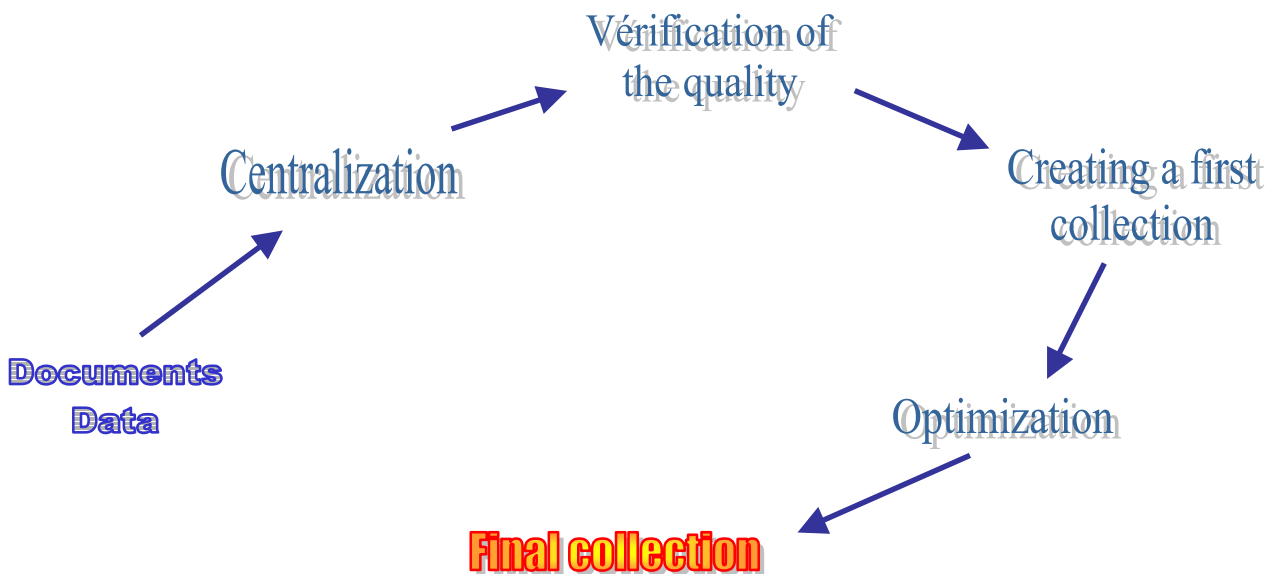
Shipments of waste packages to the facility stopped in 1994, and the cover was completed in 1997.



- Centre de la Manche Disposal Facility -

In July 1996, the Commission, known as the “Turpin Commission”, set up by the government to assess the situation at the facility and its impact on the environment, reached its conclusions. It considered that the facility did not pose any significant health risk to the local population, and that the cover added an essential safety element. Since the Commission felt that it would be impossible to release the facility from institutional control after 300 years, it therefore recommended that the facility be submitted to an initial 5-year period of very intensive monitoring. Beyond that, it advocated the implementation of a very-long-term (several centuries) isolation system capable of protecting the environment and human beings, even if the monitoring were to be interrupted.

That is why it is necessary, during that entire period, to keep at least all useful documents and data concerning the site, in order to ensure prompt and efficient interventions in case of potential problems. Furthermore, those documents and data are an integral part of the proper transmission of the collected information (history of the useful lifetime of the facility) to future generations.



With that purpose in mind, it is necessary for that information to be **centralised** in specific locations, thus saving time in information research.

The information must also be **exhaustive** in order to constitute a complete document collection covering the whole range of activities of the facility during all the phases of its lifetime (design, site search and validation, construction, operation, closure and monitoring).

The documents and data must be **readable**, and those existing on poor-quality, crossed-out and annotated supports (paper, computer printout, microfilm and tracing) must be promptly identified and restored, if possible.

The information selected must be **relevant** and involves both identifying essential data for a good understanding of the site and optimising the size of the collection to prevent useful data from being buried in the overall series of documents.

The entire set of information must be transferred on one or several **perennial** supports, both user-friendly and stable over several centuries.

That information must be **readily accessible** during the whole period in order to allow all actors concerned (public, public authorities, regulatory authorities, industry, researchers and historians) quick and efficient access.

Finally, the final document collection must be established in **multiple copies** and archived safely in several separate locations with a view to being able to reconstitute it if it ever happened to be totally or partly destroyed.

APPROACH

A double approach has been selected to ensure the preservation of the collected information over centuries. It consists in creating both a set of comprehensive archives and an archival summary.

⇒ The first step consists in creating a collection of all documents deemed relevant over the long term. That document collection represents the **COMPREHENSIVE ARCHIVES** of the facility.



- *Comprehensive archives of the Centre de la Manche Disposal Facility* -

It includes all the technical *documents and data* helping to understand the design, operation, closure and monitoring of the facility (descriptive plans of installations, detailed inventory and location of disposed packages, operational guidelines and manuals, monitoring data, etc.); *administrative documents* (building licence, right of way, etc.); *regulatory documents* (impact assessment, creation authorisation, technical specifications, safety reports, etc.), as well as *historical documents* (press file, books or reports explaining the implementation of the facility and political/ strategic choices, etc.).

Once that document collection is established, reproduction and archival-storage activities may start. The whole set will be first reproduced in two copies on a perennial support: one copy will be sent to a competent government institution responsible for archives (French National Archives), while the other will remain on the ANDRA site. Originals will be archived according to conventional archival-storage techniques in order to serve as working documents for consultation purposes.

Reproducing that detailed “memory” in two copies and depositing them in two separate and safe locations help minimise the risk of document destruction.

⇒ The second step consists in creating an **ARCHIVAL SUMMARY** of the site; that summary should all fit in a single archive box.

That document shall contain a brief description of all the major information concerning the lifetime of the facility, including the history of the facility (from its design to its decommissioning), specifications of structures and installations, a brief inventory of the waste involved (nature, physico-chemical and radiological characteristics, generator, disposal location, etc.), and a summary of regulatory documents (safety reports, etc.).

The Archival Summary will be duplicated on a permanent support in multiple copies (about 50).

It will be sent to all local and governmental authorities (supervising minister and regional administrations concerned, such as Regional Council, Departmental Archives, Prefecture, Sub-prefecture, Land Registry, General Council, etc., as well as City Halls and Notary Chambers).

Multiplying the number of copies and disseminating them on a large scale will ensure that the collected information is properly transmitted to future generations.

ORGANISATION AND IMPLEMENTATION

In order to ensure a smooth transition into the monitoring period of the *Centre de la Manche*, ANDRA has implemented a specifically adapted and dedicated Document and Archival Storage Management Unit, that is independent from all other document production units.

An *a posteriori* approach had to be adopted, since we had to start with an already existing document collection. The implementation of such a long-term archival-storage project, once the document production phases are over (recovery of liabilities), is actually the most unfavourable option.

The first phase consisted in identifying all relevant activity fields over the long term.

To achieve that, ANDRA investigated various scenarios described in the Centre de la Manche safety analysis concerning likely situations during and after the monitoring period (loss of repository containment, intrusion and site-recovery scenarios in the context of various worksites, etc.).

Potential documents deemed relevant to provide an answer in case such circumstances occurred had been identified by then.

Moreover, the administrative and regulatory documents that are indispensable for the proper follow-up of the disposal facility were also selected. The same thing applied to historical documents (communication documents, political and strategic choices, etc.) that are also indispensable for a good general understanding of the site.

Once identified and located, those two sets of documents have been centralised to constitute the first document collection. Based on specific sorting rules (quality, readability, relevancy, etc.), the collection will then be optimised in order to become the reference document collection.

The entire set of documents will be transferred on a permanent support, in other words, perennial or intended to last for several centuries.

Once duplicated on a permanent support, those documents will be archived safely in two separate locations.

Recurrent documents generated during the monitoring period (*i.e.*, environmental monitoring data) will be followed up. Those documents will then be integrated into the document collection as soon as they are issued.

Note : Experience feedback shows that implementation of such a project would be enhanced by collecting documents as soon as they are issued. That is called an *a priori* approach and it is the most favourable option.

That approach includes the definition of document preparation (nature of information, implementation on permanent support) and centralisation rules during all the phases of the lifetime of the facility. Those documents are then directly generated on a permanent support and archived over the long term.

However, it is necessary to have enough time, with the benefit of hindsight, to analyse the document collection in its current state.

Once the site is closed, the relevancy of the documents and data selected must consequently be reviewed. That will give rise to a likely optimisation phase (volume reduction) or addition of documents not previously included.

SUPPORT

In the framework of the implementation of a long-term archival-storage system, ANDRA has privileged *permanent paper* as the selected support. It consists of a high-quality product whose main characteristics and applications are described in NF ISO Standard 97 06 (November 1994).

That support benefits from significant experience feed back and has proven to be simple, easy to use and offering direct access to information.

It represents the best adapted support for the long-term archival storage of a reasonably-sized document collection. In fact, shelf space needed for the document collection of the *Centre de la Manche*, once optimised, is in the order of 100 m.

Note: Other supports (microfilms) or mixed solutions (one copy on permanent paper and one copy on microfilm, for example) may be envisaged, notably if the document collection is bulky.

Use of permanent paper



- Handling documents -

Permanent paper implies specific uses and special handling.

First, the “permanent paper” chain (otherwise known as the “all permanent” approach) must be maintained for envelopes, folders and archive boxes.

Documents must not be bound, glued, stapled, and not even folded. Therefore, they exist only on loose leaves. Each document is first archived in a permanent-paper envelope, and then placed in a permanent-cardboard archive box; Finally, documents must not be handled without appropriate protection (gloves to avoid sweat deposits on paper).

Only high-quality inks (Indian inks) and toners must be used.

Finally, once the documents have been duplicated on permanent paper, they must be archived in appropriate premises with controlled temperature and humidity conditions.

CONCLUSION

The implementation of a complete and relevant document collection ensures that the industrial information concerning the site is properly transmitted to future generations.

That industrial “memory” is essential from a safety standpoint, in case of intervention during the monitoring period.

A summary of that collected information is widely distributed and helps to improve public acceptance of the long-term waste management carried out at the disposal facility.