

LEOPARD

Project optimization system

Decontamination and decommissioning (D&D) projects of all sizes require extensive planning and monitoring from planning through execution to ensure all requirements are achieved. To facilitate and streamline this process, Orano developed an in-house decommissioning scenario and benchmarking tool called LEOPARD. LEOPARD is a bottom-up modeling tool Orano has used extensively on major D&D projects in France and the United Kingdom.

LEOPARD combines all aspects of data management into a single, powerful tool that is used across all phases of a D&D project to properly plan, monitor, and optimize the key performance metrics.

Orano experts use LEOPARD to develop D&D project baselines, compare and benchmark scenarios against parametric past performance input, and monitor/optimize D&D progress in real time. At its core, LEOPARD is a centralized data management tool using a single platform which contains all equipment details, characterization data, drawings, and process history. The software uses site-specific information to perform complex modeling and estimating functions that produce detailed reports and projections for planning and estimating purposes. This information can include waste volumes, man hours, schedules, and other

project management functions for ongoing monitoring of the project from beginning to end.

Other benefits of LEOPARD include:

- Reduced risk associated with long-term data storage by the utilization of fewer databases—so project teams can obtain data from a single source of truth
- Live knowledge management to facilitate D&D activities
- A standard database for equipment, cell, area, site, or complex to organize the storage and analysis of data at all levels
- Confidence or sensitivity analysis on the data to identify and evaluate significant knowledge gaps that need targeted investigation or characterization

Continuous baseline updates

LEOPARD has been integral in the waste management program for dismantling the Redundant Active Handling Facility (RAHF) at the British Nuclear Fuels Ltd (BNFL) Sellafield site in England. The RAHF had been used to treat used fuels and housed approximately 100 workshops and hot cells with dose rates up to 300 mSv/h (30 R/hr).



Aerial view of the Sellafield site where LEOPARD was integral in the RAHF D&D project. BNFL, England.
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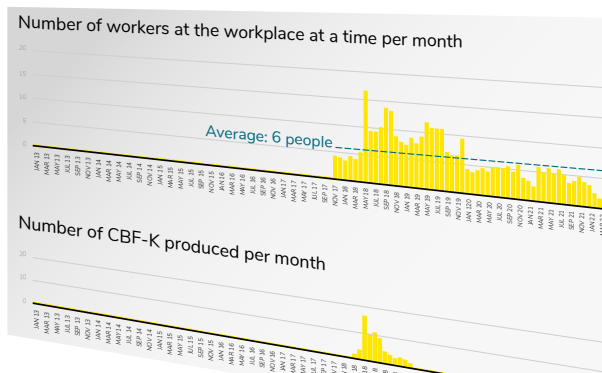
During the project, real-time parametric data was used to update the baselines in the system to show changes to schedules or tasks across the entire site project schedule. Relevant information was added to Orano's current list of baselines, including:

- Standardized decommissioning scope to feed internal and external base at a system level (e.g., ventilation, pipework, specific vessel)
- Standardization of reporting
- Savings of 1.3M£ to date
- 56% more scope previously unidentified—saving costs incurred by contractual claims

Improved waste profiling

The bottom-up approach provides a realistic estimate of how much waste will be produced and when.

- Using these outputs, a work order can be adjusted to prevent peaks and troughs in resource requirements and waste production
- If all plants on a site are using LEOPARD, waste routes can be optimized for the entire site for a more centralized approach



Sample LEOPARD waste profile output

SUCCESS STORY

Fast Reactor Fuel Reprocessing Plant (FRFRP) Decommissioning Project in Dounreay, Scotland

After realizing the benefits of a LEOPARD supported baseline decommissioning strategy that included scopes of work for current and future phases, the Dounreay site doesn't make decisions without modeling the impact in LEOPARD.

Long-term planning

The analytical approach presents the number of hours per task per system, facility, or site. This has the potential to highlight opportunities to reduce:

- Risk to workers
- Man hours spent
- Overall cost

This empowers lead teams to make informed decisions quicker and with a high degree of confidence.

Early D&D planning

A real-time analytical approach to D&D planning using LEOPARD produces detailed plans that can be updated and changed as new data

baselines are introduced or characterization data becomes available.

This is a more substantiated, challengeable vision of how to decommission a facility. It can quickly show the difference in time and resources required depending on the information used for modeling.

An entire site can benefit from using LEOPARD to provide a live plan that helps stakeholders and project teams understand interfaces and constraints, and observe how a change of strategy in one area impacts another.

