

CONSULTANCY

Cyclife Assets

Cyclife is leading Europe in nuclear waste management and decommissioning. As well as its three Nuclear Licensed facilities in Europe, the subsidiary of EDF Group has a wealth of experience through the entire waste management and decommissioning lifecycle. Its business model engages early with the customer and drives extra value by implementing waste-led decommissioning approaches that support treatment and optimizes waste diversion including free release when possible.

Thanks to its team of highly-skilled consultants in waste treatment technologies and R&D capabilities, Cyclife supports the customer to:

- Understand the waste inventory,
- Recommend the Best Available Techniques (BAT),
- Deploy cost-effective solutions for waste generating operations,
- Plan alternative treatments with clearance.

On-site, Cyclife is able to provide a team of project specialists to facilitate waste removal and deplan-ting: studies and site works for the feasibility of waste characterization, packaging identification, waste handling, transport, and Waste Acceptance Criteria (WAC) compliance.



Problem Gone Solutions
Cyclife's waste-led decommissioning approach
enables you to turn your waste problem into solutions

Adding Value to Customer

Tailored Consultancy

- Turn-key solutions to remove waste for size reduction and treatment in Cyclife's purpose-built facilities
- Accelerate decommissioning enabling significant cost savings
- Optimize the risks and contingencies for cost estimates

Fully Integrated Services

- Examine the waste management lifecycle: from generation during normal operation or decommissioning through to final retirement of Becquerels
- Review regularly on the technologies and services to assess the BAT in compliance with safety and prevailing regulatory requirements
- Engineering solutions for the design of waste treatment facilities and innovative processes
- 3D modelling and simulation studies to anticipate waste retrieval and decommissioning operation for dose savings



A Unique Business Model

- As a prime contractor or through strategic partnerships, Cyclife delivers fully waste-led decommissioning projects
- Radioactive waste management and technical solutions for domestic and international markets
- Strategic studies for major nuclear decommissioning authorities to understand the risks and opportunities involved with radioactive waste management and disposal
- Cost-effective solutions to manage nuclear legacy

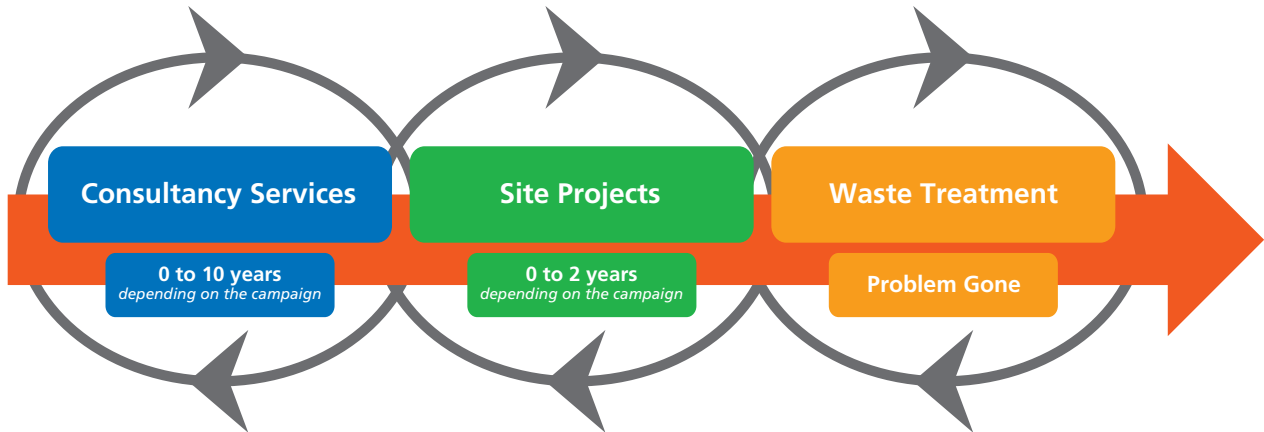
Cyclife at your service

- Waste management and treatment
- Clearance and recycling
- Decommissioning services, such as strategy development and implementation
- On-site waste retrieval, packaging and transport
- Radiological protection
- Waste characterization and inventory assessment
- Sampling plans and strategies
- Permit compliance, transport and packaging
- Environmental impact assessments
- BAT assessments, optioneering

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Cyclife Consultancy Process

A fully integrated service supporting you with your waste prior to treatment or disposal



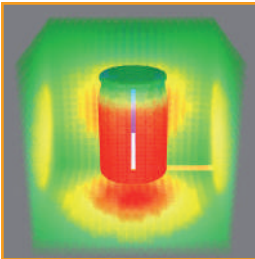
- > Waste strategy
- > BAT assessments
- > Feasibility studies
- > Waste engineering
- > DGSA consignment
- > Radiation Protection Advisers
- > Waste characterization
- > Dose modelling (DEMplus®)
- > LLWR Services
- > Architect engineering

- > Sort and segregation
- > Feasibility extension
- > Minor decommissioning
- > Site waste preparation
- > In-situ clearance
- > Decommissioning strategy
- > Special projects
- > Programme and site management
- > Transport of radioactive material

- > Sort and segregation
- > LLW Metal decontamination
- > RPA/assay/characterization
- > Secondary waste management
- > Metal melting
- > Clearance and recycling
- > Special projects (e.g. large components)
- > Incineration (supply chain)
- > Landfill (supply chain)

A Selection of References

SOGIN, the Italian State-owned company responsible for the decommissioning of Italian nuclear power plants and the management of radioactive waste, needed to treat approximately 1,800 tons of LL-ILW of metal scrap from Garigliano, Latina and Trino nuclear power plants (NPP). Thanks to the robust waste management consultancy campaign proposed by Cyclife Sweden AB, SOGIN got the green light from the Italian State to proceed firstly with the metal scrap of Garigliano NPP.



As part of the project to dispose of Treated Radwaste Store (TRS) drums at LLW Repository Ltd, dose rate calculations were needed to estimate the dose accrual from their emplacement in the LLWR vault. Cyclife used the DEMplus® 3D simulation software package designed for nuclear projects as a method to cross check the primary dose rate calculation performed in MCNP6 (a Monte Carlo method). DEMplus® produced dose rate contour plots overlaying CAD models, giving instant, superior quality output compared to other methods. Simulations could be rapidly performed and adapted in accordance with project ALARA/ALARP requirements.



The Dounreay Waste Pilot Study demonstrated the waste route and transfer of knowledge to support a culture change on-site. Diversion of several large waste items from the LLWDF saving valuable disposal space and recycling resources.

