

EUROPEAN METROLOGY RESEARCH PROGRAMME PROJECT ENV 54: METROLOGY
FOR DECOMMISSIONING NUCLEAR FACILITIES

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Abstract

Europe is facing an immediate and major challenge: the enormous costs of decommissioning many old nuclear facilities. Nuclear decommissioning is the final step in the lifecycle of a nuclear installation, and it covers all activities from shutdown and removal of fissile material to the environmental restoration of the site. There are 89 power reactors, 46 research reactors and 31 fuel facilities in the EU that are shut down and in some phase of decommissioning. Also, there are 137 power reactors, 61 research reactors and 76 fuel facilities in the EU that are still operational, some of which will be closed by 2025. It is estimated that the EU commercial nuclear decommissioning market value stands at more than €60,000 million and so it is imperative to make cost savings by the adoption of best practice. Millions of tons of waste containing recyclable materials must be either released into the environment or stored in radioactive waste repositories and the clearance of sites and the release and disposal of wastes must be performed in a manner which is both safe and cost-effective. The project objectives and corresponding working packages cover radioactive waste metrology at all stages of the post-operational cycle, from the characterization of solid wastes, to pre-selection, free release, and monitoring within the waste repository.

- WP1 will develop methods for characterisation of materials at decommissioning sites;
- WP 2 will result in the design of a measurement facility for segregating waste into streams and the operational and calibration procedures necessary for its operation;
- WP 3 will develop and implement free release measurement technologies for use at decommissioning sites;
- WP 4 will develop methods for measurements and monitoring in radioactive waste repositories;
- WP 5 will develop reference materials and standard sources for the calibration, validation, and testing of the devices and procedures to be developed in WP 1 to WP 4; and
- WP6 will maximize the impact for the JRP by dissemination of WP outputs and the creation of links to stakeholders and end-users;

This poster will provide details the individual work packages.