Metrology for decommissioning nuclear facilities (ENV54 MetroDecom)

sven.boden@sckcen.be, Belgian Nuclear Research Centre (SCK•CEN)

The MetroDecom project is part of the The European Metrology Research Programme (EMRP), a metrology-focused European programme of coordinated R&D that facilitates closer integration of national research programmes. The EMRP is jointly supported by the European Commission and the participating countries within the European Association of National Metrology Institutes (EURAMET).

The MetroDecom project delivers research addressing various aspects of the decommissioning process, i.e. the characterisation of solid wastes, pre-selection, free release and repositories' monitoring, measurement of thermal power prior to repository storage, and monitoring of wastes and repositories in the long term. A collaborative multi-disciplinary approach ensures that regulators' and industrial stakeholders' requirements across Europe are met, guaranteeing the integrity and cost-effectiveness of the clearance and disposal processes and improving safety and accuracy. The project addresses the needs of the decommissioning process by the development and implementation of new measurement techniques, instruments, standards and reference materials, and by ensuring knowledge transfer to stakeholders.

The project started on the September 1st, 2014 for the duration of 36 months. The partners are the following: CMI (Czech Republic, coordinator), CEA (France), ENEA (Italy), IFIN-HH (Romania), JRC (European Commission), LNE (France), VTT (Finland), NPL (United Kingdom), PTB (Germany), SCK•CEN (Belgium), STUK (Finland), ANDRA (France), EDF (France) and ENVINET (Czech Republic). The project consists of five technical/scientific work packages (WP):

- WP1: Characterisation of materials present on decommissioning sites (mapping inside nuclear facilities, sampling strategies for radiochemical analyses, radiochemical analysis procedures, scale factors).
- WP2: Measurement facility for waste segregation (design of measurement facility for segregation of materials, measurement software development, measurement and calibration procedures).
- WP3: Implementation of free release measurement facility on a decommissioning site (free release measurement facility implementation, measurement software improvement, scanning of wastes).
- WP4: Radioactive waste repositories monitoring (radioactive gas monitors for waste repositories, on-line on-site measurements of radiocarbon emissions using a mid-infrared spectroscope, sensors for monitoring of repository sites, acoustic thermometry device for temperature measurements, measurement of thermal power of radioactive waste packages before repository).
- WP5: Development of reference materials and standard sources (reference materials and standard sources for segregation of materials and for free release measurement, reference materials and standard sources for radiochemical analysis, gaseous reference materials, reference materials and standard sources for surface contamination monitors).

More information: http://www.decommissioning-emrp.eu/