



Environmental Radiological Research, Monitoring and Assessment

CEFAS, for 50 years, has successfully provided research, monitoring and assessment services for radiological environmental protection. We offer a range of tailored services for customers.



ENVIRONMENTAL MONITORING PROGRAMMES

RADIOLOGICAL IMPACT ASSESSMENTS

FOOD SAFETY CERTIFICATION

OPERATIONAL AUDITS

ASSESSMENT OF CONTAMINATED LAND

RADIOLOGICAL EMERGENCY RESPONSE

RADIOANALYTICAL SERVICES

ENVIRONMENTAL RADIONUCLIDE RESEARCH

Environmental monitoring programmes

CEFAS can design and undertake aquatic and terrestrial monitoring programmes for artificial and natural radionuclides in biota, water, sediments, soils and air. We can advise on programme planning, implementation, and data interpretation. We have experience, facilities and expertise in effluent and environmental sample collection, preparation and analysis.

Radiological impact assessment

CEFAS can assess the impact of existing and proposed releases of radionuclide discharges and direct radiation sources. We apply our experience in critical group identification, establishing consumption habits and external exposure, and monitoring discharges to make dose assessments and assess regulatory compliance. A particular strength of CEFAS is in predictive assessments of the effects of radioactive liquid wastes into the sea, rivers and lakes. The complexity of an assessment depends on the source under study. For standardised assessments of pipeline discharges, for example, we apply turnkey models. Where more detailed appraisal is necessary we develop source specific models, drawing on our applied research capability to back up existing data. Where method validation is possible, we compare predictions with observations to test our data and models.



Food safety certification

You may be a supplier to the food industry, perhaps a manufacturer, retailer, wholesaler or exporter, and concerned about consumer confidence in your products. You may be a regulator with responsibilities for ensuring food safety. Or you may be a consumer who is looking for impartial advice about radioactivity in your diet. We can provide fast, high quality determinations of the radionuclide content of food using our extensive portfolio of measurement techniques. We can provide the results in a form to suit your needs, perhaps as a certificate for onward transmission, or with our assessment of what the results mean expressed in a straightforward way.

Operational audits

CEFAS has over 30 years experience of inspecting nuclear sites to assess compliance with statutory legislation. We combine scientific and technical capability with a thorough understanding of relevant regulations to advise customers on their responsibilities and how to meet them. For nuclear site operators, we are now able to offer an operational audit service to assess compliance with relevant waste management and environmental monitoring regulations and authorisations.

Assessment of contaminated land

CEFAS's extensive radiological assessment experience enables us to provide a service of appraising areas of land which could be contaminated due to past events and advising on the application of appropriate criteria for potential remediation.

Radiological emergencies response

CEFAS has experience in preparing and operating emergency plans, particularly in the aquatic environment, in response to both exercise scenarios and actual incidents.

Our personnel, facility and data resource includes:

- Access to an extensive databank containing information on environmental radioactivity levels.
- An experienced impact assessment team.
- Specialist staff and instrumentation for field measurements.
- A well-equipped radioanalytical laboratory staffed by experienced analysts.
- Experience in interpreting regulations and advising policy makers and enforcement agencies.



Radioanalytical services

CEFAS provides a comprehensive radioanalytical service for a wide range of food, effluent and environmental samples. As well as sample preparation facilities, our laboratory is equipped with the latest alpha, beta and gamma radiation counting systems for radionuclide identification and quantitative analysis over a range of activity levels (mBq to MBq). Our operating procedures and quality control programmes, prepared to UKAS standards, ensure high precision and accuracy to traceable international standards.

Environmental radionuclide research

CEFAS carries out an active research programme into processes and mechanisms of radionuclide distribution in, and impacts on, the aquatic environment. We have expertise in researching:

- Binding properties of radionuclides to sediments.
- Radionuclide speciation, migration and modelling.
- Radionuclide particle-water interactions.
- Sedimentary radionuclide processes - deposition, chronology and diagenesis.
- Biological uptake and accumulation of radionuclides.
- Resuspension and remobilisation of deposited sedimentary radionuclides.

For further information about any of our services or to discuss your needs with one of our specialists please contact



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