



CAPTECH
EXPERTISE NUCLEAIRE



Your Expert in Nuclear Measurement, Waste Management and Radiation Protection

RESEARCH - INDUSTRY - MEDICAL - ENVIRONMENT



System Design



Studies and
Modeling



Radiation
Protection



On site
Measurements



Waste
Management



Maintenance



SYSTEM DESIGN

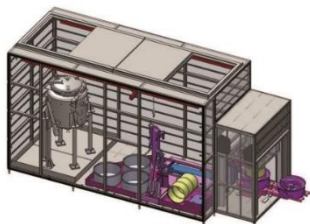
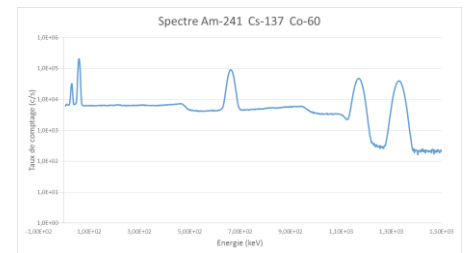
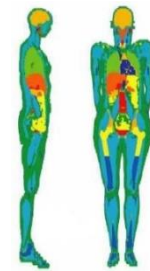
We work on both upstream and downstream aspects of the design of radiological measurement systems. The systems produced can be standard or specific and use market technologies (gamma spectroscopy, dose rate probes, ionization chamber, etc.). The services provided can be of different nature, up to the complete design of turnkey systems:

- Normative and regulatory analyzes and requirements definition
- Choice of suitable technologies (Germanium, NaI, plastic scintillator, neutron tubes, etc.)
- Writing of specifications and technical specifications (material aspect, software, mechanics, etc.)
- Validation of calculation algorithms
- Complete systems and software qualification, writing of associated documentation (qualification plans, test report, etc.)

STUDIES AND MODELING

CAPTECH's expertise is based on in-depth theoretical knowledge (physical phenomena, statistics and uncertainties, regulations, etc.) as well as on the mastery of existing calculation codes / modeling software (MCNP, MERCURE, MERCURAD, RayXpert, Microshield, etc.). Many types of studies can be carried out, for example:

- Technical and economic studies for the design and performance optimization of radiological measurement systems
- Nuclear expertise: analysis and interpretation of measurement results with associated uncertainties (gamma spectroscopy, neutron counting, alpha spectroscopy, etc.)
- Analysis of measurement methodologies and writing of associated procedures
- Various analyzes: typical spectrum, calculation algorithms, etc.
- Regulatory compliance checks (waste, transport, etc.)
- Modeling: dose and dose rate calculations, dose mapping, analyses of various detectors response (transfer function, efficiency, etc.), obtaining gamma spectra, neutron flux, etc.

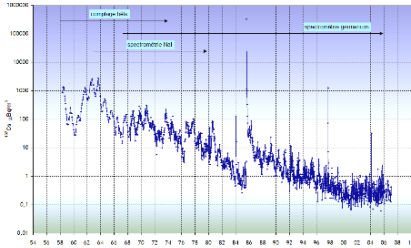


RADIATION PROTECTION

Among the various studies that we carry out, Radiation Protection studies constitute an important part and are supplemented by field knowledge. Indeed, we also perform on site interventions to carry out various Radiation Protection checks :

- Design of radiological protections at workstations or for a complete installation (modeling)
- Job analysis
- Zoning
- ALARA analysis
- On-site dose rate readings
- Mapping and non-contamination checks on site

ON SITE MEASUREMENTS



We intervene on site to provide characterization services for various radioactive objects such as waste packages, nuclear material, environmental samples, radioactive sources, etc. The operations of identifying and quantifying the radioactive elements involved include:

- A good knowledge of current techniques and technologies: gamma spectroscopy, alpha spectroscopy, dose rate measurement, contamination measurement, neutron measurement, etc.
- A good knowledge of measurement devices: HPGe, NaI, CZT, LaBr3 detectors, alpha chambers, passive neutron counters (3He, BF3, etc.), ionization chamber, radiation meters, contamination meters,
- Good software skills: spectroscopy software (VisuGamma, Génie 2000, Maestro, etc.), isotopy (MGA, MGA-U, IGA) and calculation codes
- Results analysis: spectra analysis, measurement results (dose rate, count rate, ...), mastery of the associated uncertainties, compliance checks, definition of actions to be implemented if necessary (packaging, signs, etc.)

WASTE MANAGEMENT

CAPTECH assists you in the waste treatment analysis and the compliance controls of your radioactive waste packages. In particular, we offer a complete service for non-nuclear industries (Nuclear medicine, laboratories, universities, Oil and Gas, ...) integrating the following aspects:

- Specific interventions for research, segregation and management of radioactive sources or objects (radiation portal monitor trigger for example)
- Carrying out sorting and packaging operations in accordance with local requirements
- Waste packages characterization
- Writing of support files
- Assistance with waste removal



MAINTENANCE

In order to ensure the maintenance of operational conditions and a maximum availability rate of your measurement equipment, CAPTECH defines preventive and corrective maintenance programmes adapted to your usage constraints and carries out maintenance operations.

We work on complete fixed measurement stations (gamma spectroscopy chains, neutron counters, alpha chambers, etc.) as well as on hand held devices (radiation meters, contamination meters, etc.).



CAPTECH
EXPERTISE NUCLEAIRE



Almost 10 years of experience in the field of **Nuclear Measurement, Waste Management and Radiation Protection.**

For the sectors of **Research and Industry, Medical, Environment.**

We work for a wide variety of players in nuclear:

IRSN, CEA, ORANO, EDF, Safe Technologies, BERTIN Technologies, VEOLIA, Hospitals, Universities, Landfill centers, Water networks, etc ...

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