



2018-IPR-G-000-9869

Ultrasonic Cask Integrity Verifier

Position for:

Trainee

As the science and knowledge service of the Commission, the mission of Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle.

The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: <http://www.jrc.ec.europa.eu>

Short description of activity:

The trainee position is available at the Nuclear Security Unit. The unit focus is on state of the art enabling research, the use of specific technology, development of instruments and methods, delivering technical services and training in the domain of nuclear safeguards, non-proliferation and nuclear security. In this way, the unit supports the verification of international treaties and agreements related to nuclear safeguards and non-proliferation.

The Nuclear Security Unit develops Sealing and Identification Techniques for nuclear safeguards, especially underwater and dry storage casks. In particular, the aim of this traineeship is the preliminary design of an ultrasonic system able to verify the integrity of a cask before installation of a sealing bolt.

The main part of the work concerns development of the ultrasonic part of this prototype, using simulation software available in the laboratory called CIVA, the trainee will define the best ultrasonic transducer and the geometry of the reader. The prototype will be tested on a mock up of dry storage cask. The trainee will be part of a small team of specialists and will be guided through the various aspects of the project. The planned contributions of the trainee are suitable for presentation as a thesis project at MSc level.

	<p><u>Qualifications:</u></p> <p><u>Essential:</u></p> <ul style="list-style-type: none"> • 3rd or 4th year university student in engineering. (in this case the thesis has to be registered and the subject has to match with the project itself) • Knowledge of electronics, wave propagation, ultrasonic techniques and computer science is required. • English knowledge level B2. <p><u>Advantage:</u></p> <ul style="list-style-type: none"> • Knowledge of CIVA ultrasonic simulation software and CAD SolidWorks software. • Italian speaking <p><u>For general eligibility requirements, please read the rules governing the traineeship scheme of the JRC:</u></p> <p>https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/jrc-trainees</p>
Unit /Directorate	<p>Unit G.II.7 – Nuclear Security Directorate G – Nuclear Safety and Security</p> <p>Further information: https://ec.europa.eu/jrc/en/research-topic/nuclear-safeguards-and-security</p>
Indicative duration	5 months
Preferred starting date	As soon as possible
JRC Site	Ispra
Country	Italy
<u>JRC contact details</u>	<p>For any technical problems with your application, please contact: HR-AMC8-RECRUITMENT-TOOLS-SUPPORT@ec.europa.eu</p>