



Job Description Template

Position Review

Position Number		Position Type	Ongoing	Subject to Radiation	Yes
Hyperion Position Number		Fund Type		Parent Position	007407 Team Leader (SGTS-Scientific Projects)
Organization	SGTS Section for Projects & Engineering Scientific Projects Team	FTE			
Grade	P2	Duty Station	Vienna, Austria		
		Position Title	Associate Scientific Methods Engineer		

Job Description Review

Organization Settings

The Department of Safeguards carries out the IAEA's duties and responsibilities as the world's nuclear inspectorate, supporting global efforts to stop the spread of nuclear weapons. The primary role of the Department is to develop and implement IAEA safeguards to ensure that there is no diversion of declared nuclear material from peaceful activities and no indications of undeclared nuclear material or activities in a State as a whole.

The Department comprises nuclear safeguards inspectors, responsible for carrying out inspections and verifications of all-safeguards relevant information for nuclear facilities in over 180 States; and technical staff responsible for a wide range of activities including: developing concepts and approaches for implementing safeguards; developing and maintaining safeguards equipment; providing analytical and laboratory services for sample analysis; collecting, evaluating and analysing safeguards-relevant information; providing information and communication technology infrastructure and services; and providing programme coordination support.

The Division of Technical and Scientific Services ensures the provision of state-of-the-art equipment and related expertise for the accomplishment of the Department of Safeguards activities. Within this mandate, the Division is responsible for procurement, testing, provision, inventory control, performance monitoring and maintenance of safeguards equipment and supplies required by SGO Divisions; management of equipment development and engineering activities to meet quality and safeguards requirements; development and provision of documentation, procedures, instrumentation methods and techniques; provision of specialized technical and scientific support to inspectors and inspection activities in the field and at headquarters; and, radiation contamination monitoring of returned equipment and timely write-off of obsolete or contaminated equipment. The Division also coordinates departmental health and safety activities.

Main Purpose

Reporting to the Team Leader, the Associate Scientific Methods Engineer contributes to the development of scientific methodologies and procedures, field test of methods and techniques, and supports the development of new instruments and equipment in the context of safeguards verification activities. The Associate Scientific Methods Engineer is further responsible for supporting advanced measurements of nuclear material and non-routine and complex verification tasks as well as providing knowledge and guidance to the Division including for numerical simulation.

Role

The Associate Scientific Methods Engineer is: (1) a scientist, supporting the development of methodologies and techniques for nuclear material verification; (2) a technical contributor, supporting the Operations Divisions and other SGTS staff with the selection and use of safeguards instruments for the measurement of nuclear materials; (3) an

engineer, contributing to the adaptation and deployment of non-destructive assay (NDA) systems in the field for non-routine and complex applications, troubleshooting and calibrating NDA equipment through numerical simulations and supporting the development of new instruments; and (4) a technical writer, drafting and/or reviewing development requirements for safeguards instrumentation, specifications, procedures and other reports.

Partnership

The Associate Scientific Methods Engineer collaborates with other staff within the Section and the Division, contributing to the implementation of nuclear measurement techniques and providing subject matter knowledge for the development of new methodologies and equipment, under the technical guidance of the Team Leader. In addition, the Associate Scientific Methods Engineer establishes links and engages with staff throughout the Department of Safeguards to determine the needs and requirements of the Operations Divisions and the internal needs of SGTS, as well as with other stakeholders internal and external to the IAEA.

Functions / Key results Expected

- Contribute to the execution of non-routine, complex tasks requiring the development of methodologies and techniques for nuclear material verification.
- Support the provision of technical assistance, including analytical support for data interpretation and infield verification support, for advanced nuclear materials measurement techniques.
- Employ the developed methodologies and techniques to enhance the functionality of safeguards equipment.
- Contribute technical knowledge to the definition of user requirements, and for other elements related to the development and deployment of innovative instruments and measurement techniques, fulfilling needs requested by Operations Divisions or other SGTS Teams and as agreed at the departmental level.
- Support the development of NDA equipment in coordination with the assigned development project managers.
- Prepare quality controlled technical documents, testing and calibration procedures for equipment, and trip reports that detail the deployment, repair, design or calibration of instruments and related nuclear material measurement techniques.
- Provide training related to the implementation of advanced nuclear materials measurement techniques.

The incumbent may perform his/her work in areas involving exposure to radioactive materials. Therefore, as an Occupationally Exposed Worker, he/she must be medically cleared by VIC Medical Service and is subject to an appropriate radiation and health monitoring programme, in accordance with the IAEA's Radiation Safety Regulations.

Generic JD Remarks

Competencies

Core Competencies *(To be automatically generated based on the CCOG code once the JD is approved)*

Competency	Occupational Role	Definition
Communication	Individual Contributor	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen to and understand the perspectives of others and proposes solutions.
Achieving Results	Individual Contributor	Takes initiative in defining realistic outputs and clarifying roles, responsibilities and expected results in the context of the Department/Division's programme. Evaluates his/her results realistically, drawing conclusions from lessons learned.
Teamwork	Individual Contributor	Actively contributes to achieving team results. Supports team decisions.
Planning and Organizing	Individual Contributor	Plans and organizes his/her own work in support of achieving the team or Section's priorities. Takes into account potential changes and proposes contingency plans.

Functional Competencies *(To be automatically generated based on the CCOG code once the JD is approved)*

Competency	Occupational Role	Definition
Client orientation	Associate	Establishes effective relationships with clients to understand and meet or exceed their needs. Finds ways to ensure client satisfaction.
Judgement/decision making	Associate	Consults with supervisor/manager and takes decisions in full compliance with the Agency's regulations and rules.
Technical/scientific credibility	Associate	Acquires and applies new skills to remain up to date in his/her area of expertise. Reliably applies knowledge of basic technical/scientific methods and concepts.
Expertise <i>(Specify skills and expertise necessary to undertake the work, including use of specialised tools or equipment)</i>		
Expertise	Description	Asset
Safeguards Non-destructive Assay	Ability to contribute to the design, development and implementation of methodologies and techniques used to verify the presence, absence, amount and unique characteristics of plutonium, uranium and spent fuel with an emphasis on gamma spectrometry and neutron coincidence counting	N
Other Technical Engineering Mechanical Engineering	Ability to recommend sound technical solutions for the optimal implementation of instrumentation in safeguards approaches	Y
Safeguards Nuclear Fuel Cycle/Nuclear Facilities	Knowledge of the nuclear fuel cycle.	Y
Physics Nuclear Instrumentation	Knowledge of the application of nuclear instrumentation for the specific purpose characterization of nuclear material.	Y
Nuclear Engineering Simulation and Modelling	Demonstrated skills and experience in the use of nuclear fuel depletion codes.	Y
Position Specific Expertise	Description	Asset
Nuclear Engineering Simulation and Modelling	Demonstrated skills and experience in computerized simulations of the transport of radiation, such as Monte Carlo simulations, applied to the design and calibration of NDA instruments.	Y
Nuclear Chemistry	Practical experience in the preparation of samples for nuclear measurements	Y
Languages <i>(List both essential and desirable language necessary to undertake the work)</i>		
Languages	Asset Languages	
English	Arabic Chinese French Russian Spanish	
Qualification <i>(Specify the required educational level and professional qualifications that are required to undertake the work)</i>		
Qualification Title	Description	
Bachelor's Degree	University degree in nuclear engineering, applied physics, physics, mathematics, electrical engineering or a similar technical area.	
Experience <i>(Specify the standard number years of experience in [specific field].)</i>		
Minimum of two years of relevant work experience in the development, deployment, production and/or use of nuclear NDA instrumentation including demonstrated experience		

- in:
- nuclear coincidence counting and/or gamma spectrometry;
 - designing, implementing, calibrating and/or maintaining NDA systems for radioactive material characterization.

Travel up to 30%