

Job Description for Professional Posts

Position and Grade:	Associate Nuclear Engineer (P2)
Organizational Unit:	SMR team Nuclear Power Technology Development Section Division of Nuclear Power Department of Nuclear Energy
Duty Station:	VIC-Vienna, Austria
Type/Duration of Appointment:	FT – JPO, 2 year

Organizational Setting

The objective of the Department of Nuclear Energy (NE) is to foster the efficient and safe use of nuclear power by supporting interested Member States in: improving the performance of nuclear power plants, the nuclear fuel cycle, and the management of nuclear wastes; catalysing innovation in nuclear power and fuel cycle technologies; developing indigenous capabilities around the world for national energy planning; deploying new nuclear power plants; preserving and disseminating nuclear information and knowledge; and advancing science and industry through improved operation of research reactors.

The department has a dynamic, participative and interactive operating environment with inputs received from the Board of Governors, the General Conference, policy and decision-makers, and technical counterparts in Member States and the international development community.

The Division of Nuclear Power comprises the Nuclear Power Engineering Section, the Nuclear Power Technology Development Section, the Nuclear Infrastructure Development Section and the INPRO (International Project on Innovative Nuclear Reactors and Fuel Cycles) Section. The Division provides core engineering, technological, human resource development and management support to interested Member States in the field of nuclear power.

The Nuclear Power Technology Development Section (NPTDS) assists Member States in developing safe, environmentally benign, economically viable, proliferation resistant and sustainable innovative solutions for all civil reactor technologies, including water-cooled reactors, gas-cooled reactors, fast neutron systems (both critical and sub-critical) as well as small, medium-sized and modular reactors. The section fosters international collaboration on technology development for advanced nuclear systems and non-electric uses of nuclear power, including their integration with renewable energy sources, by facilitating coordinated research projects, technical meetings, and training courses, and publishing different technical documents. The section also maintains the Advanced Reactor Information System (ARIS) and the Nuclear Graphite Knowledge base database, and publishes the SMR booklet on Advances in the SMR Technology Development.

Main Purpose

To assist NPTDS and specifically the Small and Medium Sized and Modular Reactor (SMR) Team in their activities on advanced nuclear energy technologies, by supporting on-going and planned IAEA's

projects on SMR technology development and deployment, including preparation and finalization of technical publications, application of the reactor technology assessment methodology for SMR, support to the Team Leader as far as implementation of CRPs, training courses and the work of the TWG-SMR.

Role

The incumbent fulfils the role of a project member to contribute to technical publications, organization of technical meetings and the on-going CRPs: *Design and Performance Assessment of Passive Engineered Safety Features in Small Modular Reactors*; and *Development of Approaches, Methods and Criteria for Determining Technical Basis for EPZ for SMR Deployment*. The work will also include the implementation of the methodology and tool for the technology assessment of different SMRs.

Partnerships

The incumbent works closely with members of the SMR Team and NPTDS staff, as well as with the counterparts from other divisions in the agency, Member States and international institutions participating in the SMR activities.

Functions / Key Results Expected

- Assist in organizing and conducting IAEA Coordinated Research Projects and Training Courses managed by the SMR Team within NPTDS
- Identify recent work and relevant information on passive safety systems in SMRs, its developmental status, available experimental validation and testing and harmonise it with the contributions made by the CRP participants. Fulfil a similar role on the latest activities and outcomes of methodologies and approaches to determine the size (and need for) the emergency planning zone (EPZ) of SMRs.
- Technical Support: Aid the team leader in the ongoing technical activities of the project, gain an overall understanding of the project outputs/outcomes and support in preparation of technical reports and documents.
- Provide analysis on integration of SMRs in new sustainable energy systems to address climate change mitigation, in liaison with other divisions of the department as relevant.
- Training material: Develop basic training material (to be converted to eLearning material) on the two topics to be studied (Passive safety systems and EPZ for SMRs).
- Prepare end-of-term report and presentation demonstrating experience and results obtained during the term.

Competencies and Expertise **(do not revise or edit)**

Core Competencies		
Competence	Occupational Role	Behavioural Indicator
Communication	Individual Contributor	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen and understand the perspective of others

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		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		
Competence	Occupational Role	Behavioural Indicator
Analytical thinking	Associate	Gathers and analyses information, identifying critical relationships and patterns among data and proposes workable solutions.
Commitment to continuous process improvement	Associate	Identifies opportunities for process, system and structural improvement as well as improving current practices, increasing effectiveness and achieving efficiency gains. Actively supports the application of sound quality management standards and process improvement.
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.
Knowledge sharing and learning	Associate	Actively seeks learning opportunities and actively shares knowledge and information with others; shares specialized knowledge, skills and learning from experience across different situations and contexts effectively.

Expertise	
Expertise	Description
Nuclear Engineering	Knowledge of SMR nuclear reactor design, safety and technology

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Nuclear Engineering and Technology	assessment, as well as associated modelling and simulation. Experience on multiple SMR technologies (also non-water cooled) and their integration with renewables and non-electric applications will be a benefit.
Nuclear Engineering Advanced Nuclear Power Systems	Some experience in research and technology development in the field of advanced nuclear power systems.

Education, Experience and Language Skills

- Bachelor/Master degree in nuclear engineering, or reactor physics.
- Minimum two years of relevant experience in national or international organizations and some familiarity with reactor modelling (neutronics, thermal-fluid analysis, accident analysis, public dose assessment).
- Fluency in English language is required