

Job Description for Professional Posts

Reference:NE2024/07

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

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 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 and medium-sized reactors. The section fosters international collaboration on technology development for reactor plants and for non-electric uses of nuclear power by facilitating coordinated research projects, technical meetings, and training courses. The section also maintains the Advanced Reactor Information System (ARIS) and Thermophysical Properties of Nuclear Materials (THERPRO) databases.

Main Purpose

Under direct supervision of the Technical Lead (SMR Technology Development) and general guidance from the Section Head (Nuclear Power Technology Development), the Associate Nuclear Engineer (SMR-TD) will work on advanced nuclear reactor technologies, by supporting the on-going and planned activities within the IAEA's project on SMR Technology Development and by preparing, verifying, finalizing and distributing information and technical documents on SMR designs and related ongoing projects. The activities also cover technology developments of modular high temperature gas-cooled reactors, molten salt reactors, microreactors and Generation IV reactor designs.

Role

The Associate Nuclear Engineer is: (i) a team member, participating in and contributing to the revision of IAEA Nuclear Energy Series No. NR-T-1.18 Technology Roadmap for Small Modular Reactor Deployment; and launching a Coordinated Research Project on Experiments for Validation of Design and Safety Analysis Tools for Developments of SMRs; and (ii) a collaborator, contributing to implementation of other events including that of Technical Cooperation programme in the development of SMRs, HTGRs, MSR and Microreactors – for near term deployment.

Partnerships

Under the supervision of the Technical Lead (SMR Technology Development), the Associate Nuclear Engineer works closely with other NPTDS staff members, as well as with the counterparts from other divisions, Member States and international organizations participating in the Consultancy and Technical Meetings for the development of publications and in CRPs through Research Coordination Meetings.

Functions / Key Results Expected

- Assist in organizing and conducting Consultancy and Technical Meetings on updating the IAEA's Technology Roadmap for SMR Deployment.
- Assist in organizing and conducting Research Coordination Meetings for Coordinated Research Projects on SMRs and modular HTGRs.
- Assist in monitoring Member States activities on advanced reactors' developments, in particularly SMRs, HTGRs and Microreactors through medias and literature surveys.
- Support the ongoing technical activities of the SMR project, gain an overall understanding of the project outputs/outcomes and support in preparation of technical reports and documents.
- Support the ongoing project activities on e-learning modules for modular HTGRs and SMRs, as well as other Knowledge Preservation Portals on advanced reactors.
- 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 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.

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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
Judgement/decision making	Associate	Consults with supervisor/manager and makes decisions in full compliance with the Agency's regulations and rules.
Partnership building	Associate	Develops and maintains partnerships needed for his/her work. Establishes and nurtures positive relations with partners and stakeholders.
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	
Expertise	Description
Nuclear Engineering Advanced Nuclear Power Systems	Knowledge of SMR designs and technologies, nuclear industries activities on licensing and nuclear new builds activities, and safety assessment. Experience for multiple SMR technologies will be a benefit.
Nuclear Engineering Nuclear Engineering and Technology	Some experience in research and technology development in the field of advanced nuclear power systems.

Education, Experience and Language Skills

- University degree in nuclear engineering or mechanical/electrical engineering and/or reactor physics and thermal hydraulics.
- Minimum two years of relevant experience in national or international organizations and some familiarity with reactor technology development, safety analysis for licensing, and/or reactor modelling (neutronics, thermal-fluid analysis, accident analysis, public dose assessment).
- Excellent oral and written command of English. Knowledge of other official IAEA languages (Arabic, Chinese, French, Russian and Spanish) is an asset.

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