IAEA
International Atomic Energy Agency

Job Description for Professional Posts

Reference: NE2024/05

Position and Grade:	Associate Nuclear Engineer (Fast Reactor), P2
Organizational Unit:	Nuclear Power Technology Development Section Division of Nuclear Power
Duty Station:	Vienna
Type/Duration of Appointment:	FT – JPO, 1 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 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

The Associate Nuclear Engineer (Fast Reactor) assists NPTDS and the Fast Reactor (FR) Team in their activities on advanced nuclear energy technologies, by supporting on-going and planned IAEA's projects on Fast Reactor Technology Development and by preparing, verifying, finalising, and distributing information and technical documents on innovative fast reactor designs. She/he reports to the Team Leader of Fast Reactors Technology Development Team.

Role

The Associate Nuclear Engineer (Fast Reactor) fulfils the role of a technical expert by providing assistance in managing the on-going and newly launched CRPs on: Benchmark Analysis of CEFR Physics Start-Up Experiments; Benchmark Analysis of FFTF Unprotected Loss of Flow Test; and Benchmark of Transition from Forced to Natural Circulation Experiment with Heavy Liquid Metal Loop (NACIE).

Partnerships

The Associate Nuclear Engineer (Fast Reactor) works closely with members of the FR Team and the NPTDS, as well as with the counterparts from Member States and international institutions for data collection and methodological discussions.

Functions / Key Results Expected

- Participate in organizing and conducting IAEA Coordinated Research Projects managed by the Fast Reactor Team within NPTDS.
- Technical Support: Provide assistance to 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.
- Project implementation: Support the ongoing activities in the organization of the Technical and Consultants Meetings organized by the FR Team in 2019 and 2020. Both technical and managerial assistance is required.
- Training material: Develop basic training material (to be converted to eLearning material) on fast reactor science and technology.
- Knowledge Management: Contribute to ongoing project on Fast Reactor Knowledge Preservation Portal.
- 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.
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**
Nuclear Engineering|Advanced Nuclear Power Systems	Associate	Knowledge in the field of nuclear engineering, advanced and innovative reactors, and in particular fast reactors.

Expertise	
Expertise	**Description**
Nuclear Engineering|Advanced Nuclear Power Systems	Expertise in research and technology development in the field of innovative fast neutron systems. Experience in modelling and simulation of the fast reactors: neutronics, thermal hydraulics, coupled simulations, severe accident analysis.
Nuclear Engineering|Nuclear Engineering and Technology	Knowledge of fast reactor technology, such as fast reactor designs, simulation and modelling under steady-state and transient conditions

Education, Experience and Language Skills

- University degree in nuclear engineering, mechanical engineering or reactor physics.
- Minimum two years of experience in using and developing computer codes for reactor simulation and modelling (either neutronics, thermal hydraulic or/and coupled) at national or international level.
- Familiarity with innovative nuclear reactor concepts.
- Published papers on nuclear engineering will be an asset.
- Excellent oral and written command of English. Knowledge of other official IAEA languages (Arabic, Chinese, French, Russian and Spanish) is an asset.