

Job Description for Professional Posts

Reference: NE2025/11

| | |
|--------------------------------------|---|
| Position and Grade: | Associate Nuclear Engineer (Fusion), P2 |
| Organizational Unit: | Nuclear Power Technology Development Section Division of Nuclear Power |
| Duty Station: | Vienna, Austria |
| 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

Under the direct supervision of the Team Leader of Fusion Technology Development Team, the Associate Nuclear Engineer (Fusion) develops professional competence and works as a collaborative team member supporting NPTDS and the Fusion Technology Team in their activities on fusion energy technologies, including but not limited to preparing, verifying, finalising, and distributing information and technical documents on fusion technology development.

Role

The Associate Nuclear Engineer (Fusion) fulfils the role of a technical expert by providing assistance in managing the on-going activities on tritium breeding blankets and fusion power plant development and deployment framework. She/he will also assist the team in preparing, organizing and conducting conferences.

Partnerships

The Associate Nuclear Engineer (Fusion) works closely with members of the Fusion 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

- Support the implementation of the ongoing technical activities of the fusion technology project and prepare technical reports and documents as planned.
- Support the ongoing activities in the organization of the Technical and Consultants Meetings on fusion technologies.
- Develop basic training materials on fusion technology development, status and challenges to be converted to eLearning module.
- Support development of a part-task simulator/s on fusion subsystems as a part of the IAEA HOPS platform.
- Participate in launching the new IAEA Coordinated Research Projects on fusion technology within NPTDS.
- 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 |
| Analytical Thinking | Associate | Gathers and analyses information, identifying critical relationships and patterns among data and proposes workable solutions |
| 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 | Expertise in research and technology development in the field of fusion engineering and fusion systems. Understanding of fission-fusion synergies. |
| Nuclear Engineering Nuclear Engineering and Technology | Knowledge of fusion technologies and fusion energy principles, fusion systems' designs, technology challenges, current state-of-the-art development, tools for relevant simulation and modelling. |

Education, Experience and Language Skills

- University degree in nuclear engineering, mechanical engineering, physics, or a related field with a focus on fusion technology. Advanced coursework or research in fusion science and engineering is highly desirable.
- Minimum two years of working experience in fusion technology with solid understanding of fusion energy principles, including plasma physics, magnetic confinement, inertial confinement, and reactor technology.
- Experience with software used for fusion simulations, such as ANSYS, COMSOL, or other specialized tools is desirable.
- Published relevant papers is an asset.
- Commitment to staying updated with the latest advancements in fusion technology through continuous learning and professional development.
- Experience presenting research findings and technical information at meetings, workshops, and conferences.
- Excellent oral and written command of English. Knowledge of other official IAEA languages

(Arabic, Chinese, French, Russian and Spanish) is an asset.