

Nuclear Power Engineer

Job Req ID: 15211

Closing Date: 26 April 2022

Publication: Internal & External

Vacancy Type: Permanent

Date Posted: 05 April 2022

Vacancy in the Directorate of Technology, Engineering and Quality.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. We therefore welcome applications from all qualified candidates irrespective of gender, sexual orientation, ethnicity, beliefs, age, disability or other characteristics. Applications from women are encouraged.

This post is classified A2-A4 on the Coordinated Organisations' salary scale.

Location

ESTEC, Noordwijk, Netherlands

Description

Nuclear Power Engineer in the Power Systems, EMC and Space Environments Division, Electrical Department, Directorate of Technology, Engineering and Quality.

The ESA nuclear power development programme includes short- and medium-term ambitions in the field of radioisotope heat sources and radioisotope electrical generators. Longer term technology studies will include fission reactor systems for the provision of power and propulsion. This set of technologies calls for associated technical competencies including but not limited to:

- nuclear physics and nuclear process engineering, especially reactor-based isotope generation, fuel reprocessing and actinide chemical separation;
- materials science and engineering in nuclear ceramics, refractory metals and carbon-based refractory composites;
- power conversion (heat to electrical) including thermoelectrics and thermodynamic heat engines (e.g. Stirling);
- nuclear fission reactors, especially high-temperature and compact core variants;
- space systems engineering.

The Power Systems, EMC and Space Environments Division provides functional support to ESA projects and carries out technology research (R&D) required for ESA spacecraft platform and payloads in power systems design and architecture, solar generator design and technology, nuclear power systems, electrical energy storage devices, power management and conditioning systems, electrical harness and EMC modelling, engineering and related testing, analysis and modelling of space environments and their effects on space systems, and design of space environment monitoring hardware.

While the vacancy is open in the Power Systems, EMC and Space Environments Division, you will also work in collaboration with other units in the Directorate of Technology, Engineering and Quality, and with other ESA Directorates, in particular the Directorates of Human and Robotic

Exploration, of Science, and of Space Transportation, to support ESA's nuclear power development programme.

Duties

You will report to the Head of Division and, within the above technical fields, your main tasks and responsibilities in the area of radioisotope and nuclear power systems will include:

- providing expert technical support and consultancy on nuclear and radioisotope power to ESA projects, programmes and general studies throughout all project phases;
- contributing to the definition of technology development requirements and work plans for the Agency's technology programmes;
- fostering multidisciplinary activities, with the emphasis on innovative concepts, cutting-edge technologies and system architectures;
- monitoring applicable scientific and technological trends and maintaining state-of-the-art expertise;
- contributing to dissemination of the results of activities performed and the transfer of knowledge across the Agency;
- providing specialist support to projects in nuclear power systems architecture, feasibility, specification, performance analysis and definition, trade-offs and simulations, interactions with other spacecraft sub-systems and payload, implementation, integration and verification;
- defining, initiating and conducting, as technical officer, R&D/technology development contracts with European space and nuclear industries, covering both long- and short-term needs;
- maintaining a roadmap and technology dossier for radioisotope and nuclear power systems applied to space missions;
- supporting safety and risk analysis for space missions using nuclear sources, in compliance with national and international regulations, policies and procedures.

Your duties may also include supporting other activities within your area of competence.

Technical competencies

General background and specific experience in the technical domains covered by the position

Hands-on hardware experience

Project support experience in a relevant domain

Spacecraft systems knowledge

Experience in the preparation of procurement activities for technology development and innovation (statements of work, proposal evaluation, etc)

Experience in the management and monitoring of industrial activities, including participation in reviews

Behavioural competencies

Result Orientation

Operational Efficiency

Fostering Cooperation

Relationship Management

Continuous Improvement

Forward Thinking

Education

A master's degree in the relevant disciplines is required for this post.

Other information

For behavioural competencies expected from ESA staff in general, please refer to the [ESA Competency Framework](#).

For further information please visit: [Professionals](#), [What we offer](#) and [FAQ](#)

The working languages of the Agency are English and French. A good knowledge of one of these is required. Knowledge of another Member State language would be an asset.

The Agency may require applicants to undergo selection tests.

At the Agency we value diversity and we welcome people with disabilities. Whenever possible, we seek to accommodate individuals with disabilities by providing the necessary support at the workplace. The Human Resources Department can also provide assistance during the recruitment process. If you would like to discuss this further please contact us email contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom and Canada, Latvia, Lithuania and Slovenia.

According to the ESA Convention, the recruitment of staff must take into account an adequate distribution of posts among nationals of the ESA Member States*. When short-listing for an interview, priority will first be given to internal candidates and secondly to external candidates from under-represented or balanced Member States*.

(<https://esamultimedia.esa.int/docs/careers/NationalityTargets.pdf>)

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment conducted by an external background screening service.

Recruitment will normally be at the first grade in the band (A2); however, if the candidate selected has little or no experience, the position may be filled at A1 level.

*Member States, Associate Members or Cooperating States.