

Job Title: Vacuum Engineer IO0238

Requisition ID **7928** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems - New Posting**

Fusion, the nuclear reaction that powers the sun and the stars, is a promising long-term option for a sustainable, non-carbon emitting global energy supply.

The ITER Organization (IO), based in the southern France, welcomes best talents who can together prepare the way to this new energy in a truly multi-cultural work environment.

We offer challenging assignments in a wide range of areas and encourage applications from candidates with all levels of experience. Applications from under-represented ITER Members' nations and women candidates are strongly encouraged, as IO strongly believes that a diversified, equitable, and inclusive workplace is crucial in solving one of the most complex scientific and engineering projects in the world today.

As the IO attracts and retains people coming from a vast array of different backgrounds and cultures, discrimination and exclusion cannot be tolerated. The IO believes it is our diverse perspectives and background that gives unique strength and value to the ITER mission, regardless of race, member nation, gender, religion, status, sexual orientation, or disability - all are welcome and respected at ITER. The IO is committed to fostering a fair and equitable environment across all areas of the project, including compensation and benefits.

ITER CARE Values (Collaboration / Accountability / Respect / Excellence):

We perform our work with care, we care for the well-being of colleagues, our families and ourselves, and we care about the health of the planet for generations to come. CARE drives our work and our behaviors at ITER.

To see why ITER is a great place to work, please look at this [video](#)

Application Deadline: 29/06/2025

Department: Engineering Services Department

Division / Program: Plant & Process Engineering Division

Job Grade: P1/P2

Language Requirements: Fluent in English (written & spoken)

Contract Duration: Initial Employment Contract up to five years with possibility for extension

Overview

Are you looking for an exciting opportunity at the heart of an ambitious fusion energy project? Join our Plant & Process Engineering Division (PPED), within the Engineering Service Department (ESD) as a Vacuum Engineer.

As a **Vacuum Engineer**, your goals will include:

- Collaborating on the final design of the ITER vacuum systems in preparation for the manufacture and subsequent installation.
- Producing documentation and plans for operational and commissioning stages of the vacuum systems.
- Participating onsite for the installation and commissioning activities of the vacuum systems.
- Ensuring deliverables are produced according to project schedule and budget, within a quality-assured environment that requires rigor and a systematic way of working.
- Developing, under the leadership of your discipline manager, your skills and experience for the benefit of the Project.

The ESD provides the required skilled engineering resources or services, which are necessary for the successful completion of the ITER Project.

The Plant & Process Engineering Division (PPED) provides technical support to the ITER project in the field of Vacuum Engineering. Being a member of the PPED Division, you will have the opportunity to share and develop your expertise with other colleagues working in the same discipline on different ITER units.

Key Duties and Responsibilities

Primary Responsibilities:

- Participates in the final design and interface management of ITER vacuum systems including mechanical roughing pump systems, diagnostics high vacuum pumping systems and plasma heating systems high vacuum pumping systems.
- Produces documentation and plans for the installation, operational and commissioning stages of the vacuum systems.
- Participates onsite of installation and commissioning activities related to vacuum systems.

Additional Responsibilities:

- Prepares cost estimates required for the installation of ITER vacuum systems.
- Prepares detailed technical specifications for the supply of vacuum equipment/systems.
- Provides assistance to the Domestic Agencies, contractors and ITER groups to carry-out engineering, R&D, interface control and procurement work as required.

Experience & Competencies

Essential:

- Proven experience in the design lifecycle of rough and high vacuum systems, preferably for a fusion or accelerator type of device.
- **Vacuum Systems Engineering:** Engineering of vacuum systems, including their validation, qualification and testing.
- Production of documentation related to the specification, design, testing, assembly, installation, operation and maintenance of vacuum components, systems and interfaces.
- **Vacuum Process Engineering:** Production of vacuum system Process Flow Diagrams (PFDs) and associate Piping and Instrumentation Diagrams (P&IDs).
- **Continuous Improvement:** proposing changes to processes and systems to enhance efficiency, quality, and productivity over time.
- **Quality Management Systems (QMS):** apply the applicable procedures related to your field of activity.

Desirable:

- Knowledge of welding technologies, non-destructive inspections of the steel structures, welding processes, high vacuum systems and processes.
- Familiarity of the design and operation of cryogenic vacuum systems.
- Familiarity of piping codes and standards such as ASME.
- Supporting the production of 2D and 3D drawings including process definitions through P&IDs (etc.).
- Preparation of installation documentation (technical Specifications, Bills of Materials, etc).
- Knowledge of VacTran or other similar software commonly used in vacuum design.
- Knowledge of vacuum leak testing methodologies.
- **Organizational Savvy:** maneuvering comfortably through complex policy, process, and people related organizational dynamics.
- **Optimizes Work Processes:** knowing or identifying the most effective and efficient processes to get things done, with a focus on continuous improvement.

Qualifications

Essential:

- Master's degree or equivalent in Engineering, Vacuum field or other relevant discipline.

Desirable:

- Certifications in project management.

- *The required education degree(s) may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.*

The following items apply to all jobs and job holders for the duration of tenure at ITER Organization:

- **The CARE Values are a framework of principles that guide our actions and define the culture and spirit of the ITER Project:**

Collaboration: We collaborate with commitment and flexibility using the power of teamwork, building partnerships, and working with others to reach shared objectives;

Accountability: We are accountable for the whole project - we take responsibility for our specific actions and are transparent in our daily work, holding self (ourselves) and others accountable to meet commitments;

Respect: We treat each other with respect and dignity at all times, knowing that all of us belong here. We appreciate the value that our multicultural and diverse community brings to the ITER Project;

Excellence: We are driven by excellence; we are agile and innovative while maintaining the highest standards of safety, quality and integrity;

- **ITER Core Technical Competencies:**

1) **Nuclear Safety, Environment, Radioprotection and Pressured Equipment**

2) **Occupational Health, Safety & Security**

3) **Quality Control & Quality Assurance Processes**

- **Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;**
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to perform other duties in support of the project as defined by your line manager, and when relevant upon the request of the matrix manager;
- May be requested to work outside the ITER Organization reference working hours, including nights, weekends and public holidays, due to business needs - this may include on-call, shift work, etc.
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- For staff expected to perform on-call, shift hours, or other work outside ITER Organization reference working hours, including nights, weekends, and public holidays, **the possession of a driving license valid in France is required. no commuting vehicle will be provided by the ITER Organization.**
- Informs management of any important and urgent issues that cannot be handled by line or matrix management and that may jeopardize the achievement of the Project's objectives;

The ITER Organization (IO) is an Equal Opportunity organization committed to diversity and inclusive in the workplace.