Job Title: Vacuum Engineer IO0674

Requisition ID **6999** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Construction and Installation** - **New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full-time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

ITER Organization (IO) is an Equal Opportunity/Inclusive organization committed to diversity in the workplace, with diversity and Inclusiveness being one of the ITER Values.

As IO attracts and retains people coming from a vast array of different backgrounds and cultures, bias and exclusion cannot be tolerated. IO believes it is our diverse perspectives and backgrounds 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.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as a reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure, and cultural opportunity.

To see why ITER is a great place to work, please look at this video

Application deadline: 18/05/2023
Domain: Construction Domain
Department: Machine Construction Department
Division: Tokamak Complex Division
Section: Vacuum Delivery & Installation Section
Group: Vacuum Transverse Activities
Job Family: Construction
Job Role: Engineer – 3
Job Grade: P3
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

As a Vacuum Engineer, you will support the design, procurement and prepare the installation and commissioning of the ITER mechanical and cryogenic rough pumping systems. You will also support the implementation and propagation of the necessary vacuum standards project wide.

Background

The ITER vacuum systems are of unprecedented size and complexity consisting of a large number of large volume vessel systems including the Cryostat (~ 8500 m3), the Torus (~1330 m3), the Neutral Beam injectors (~180 m3 each) and a large number of lower volume systems. The vacuums of ITER are achieved and sustained with more than 400 custom and commercial pumps. The successful construction of ITER is

dependent on excellent vacuum engineering. Many of the vacuum components are under construction or have been delivered and installation of the said components has commenced. This position will oversee the design, procurement, installation, commissioning and operation of the mechanical roughing systems of ITER.

Key Duties, Scope, and Level of Accountability

- Oversees Procurement Arrangements for the manufacture of the mechanical and cryogenic rough pumping systems;
- Manages contracts for mechanical and cryogenic pump development and validation;
- Coordinates mechanical pump testing and validation programs;
- Identifies and surveys critical activities in the manufacturing and installation of the ITER vacuum systems;
- Controls interfaces and provides system integration in the dedicated vacuum pumping rooms;
- Prepares schemes and procedures for the installation of systems within the vacuum pumping rooms;
- Develops and coordinates the production of commissioning procedures, operational schemes and maintenance scenarios for the mechanical and cryogenic pumping systems;
- Contributes with vacuum expertise to the progress through the design, manufacture, installation, commissioning and operation phases of the complete vacuum system;
- Prepares operational and safety documentation for the operations of the roughing system;
- Promotes vacuum standards and quality transversally across the ITER project;
- May be required to work outside ITER Organization reference working hours, including nights, week-ends and public holidays.

Measure of Effectiveness

- Monitors and follows up on contracts, ensuring they are on schedule and in line with requirements;
- Supports the achievement of components fabrication, installation and testing in line with ITER planning and costs;
- Identifies critical activities or issues throughout the manufacturing of the mechanical and cryogenic rough pumping systems which may impact the quality or schedule;
- Interfaces with the ITER divisions and Domestic Agencies, maintains good communication and relations and issues reports on progress;
- Works effectively in teams transversally and contributes to the overall success of the ITER project;

Experience & Profile

- ***Professional Experience:***
  - Minimum 8 years' experience in vacuum and/or cryogenics within complex international environments or projects;
- ***Education:***
  - Masters' degree or equivalent in Mechanical Engineering field or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- ***Language requirements:***
  - Fluent in English (written and spoken).
- ***Technical competencies and demonstrated experience in:***
  - Specialized domains of work and technical experience: vacuum and mechanical vacuum pump design, gas dynamics and light gas pumping, cryogenic pumping and distribution;
  - Mechanical vacuum pump development or other relevant experience with rotating machines;
  - Custom mechanical design ideally in cryogenic or vacuum field;
  - Vacuum Standards and Pressure Codes (eg. EN 13445, ASME 8);
  - Procurement and Contracts Management of manufacturing contracts for complex fabrications;
  - Problem solving: assess problems, identify root causes, and reach practical solutions in a consistent way to reach project objectives;

- Quality Control: Verifying the compliance of complex systems during supply completion, through design and up to operation;
- CAD tools and capability to understand drawings;
- Welding techniques and NDT for stainless steel would be advantageous;
- Engineering in harsh and nuclear environments, in addition to handling hydrogen or other hazardous gasses would be advantageous.

- ***Behavioral competencies:***
  - Collaborate: Ability to facilitate dialogue with a wide variety of contributors and stakeholders;
  - Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
  - Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
  - Manage Complexity: Ability to analyze multiple and diverse sources of information to understand problems accurately before moving to proposals;
  - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

The following important information shall apply to all jobs at ITER Organization:

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;
- ITER Core Technical Competencies (Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members) :
  1) Nuclear Safety, Environment, Radioprotection and Pressured Equipment
  2) Occupational Health, Safety & Security
  3) Quality Assurance Processes
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by line management and that may jeopardize the achievement of the Project’s objectives.
- 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.