Job Title: Microwave Engineer IO0779

Requisition ID **7546** - 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 will 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.

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: 15/09/2024
Department: ITER Construction Project
Division / Program: Heating & Current Drive Program
Section / Project: Electron Cyclotron Project
Group: Not applicable
Job Family: Engineering
Job Role: Engineer – 2
Job Grade: P2
Language Requirements: Fluent in English (written & spoken)
Contract Duration: Up to 5 years

Overview

Do you have an interest in microwave engineering*? Join our Electron Cyclotron Project (ECRH), focused on providing an ECRH plant that can launch up to 67 MW of power into the ITER plasma, enabling heating, current drive, and stability control. This ECRH plant will be based on the provision of up to 80 1MW CW gyrotrons operating at 170GHz, being launched through waveguides to 6 launchers, 4 upper and 2 equatorial launcher into the ITER plasma.*

As a Microwave Engineer, your goals include:

- Microwave engineering activities for the design, manufacturing, testing, installation and commissioning phases related to different components of the Electron Cyclotron (EC) system, including modelling, processing experimental data and troubleshooting on site;
- Participating in the preparation of technical specifications, supervision of contractors, initiating and following up procurement activities, and follow-up manufacturing of EC components for different systems with subsequent support for installation and commissioning.

Success in this role includes:

- Executing the required microwave engineering activities for the design finalization, procurement, manufacturing, installation and commissioning activities related to specific EC components such as launchers, transmission lines and RF sources;
- Proactively providing engineering support to the EC systems Technical Responsible Officer (TRO) and domestic agencies (DA) for the development of the EC system design, installation, commissioning, and operation, including deviation and non-conformity reports.

Key Duties, Scope, and Level of Accountability

- **Primary Responsibilities:**
- Develops the design and integration of EC system of specific instrumentation or any other related equipment required for commissioning and operation;
- Performs analysis to support EC system such as polarization tracking, losses, mode conversion;
- Executes commissioning tests on RF components and gyrotron operation;
- **Additional Responsibilities:**
- Documents the design requirements, load specifications, operation manuals and interlock functions, as required;
- Contributes to the installation, operation and maintenance plans for the EC system.

- This position is shift-[and/or on-call-] based, and crucial to maintaining continuous operations and ensuring the highest level of service for our stakeholders. This requires shift rotation [and/or availability] including day, evening, and night shifts, as well as weekends and holidays, depending upon project or team needs;

Experience & Profile

- ***Demonstrated experience and technical competencies in:***
  - **Minimum** 5 years' experience in radiofrequency / microwave engineering preferably in high-frequency domains in the field of complex installations, construction, projects or environments;
  - **Essential competencies and experience** required for success in the role**:**
    - Microwave Engineering: designing, analyzing, and applying devices and systems that operate at microwave frequencies, typically ranging from 300 MHz to 300 GHz;
    - Radiofrequency Engineering: designing, engineering, manufacturing, testing, commissioning and operation of high-power RF systems;
    - Experimental testing, commissioning and operation of radiofrequency/ microwave equipment (or equivalent);
    - Designing, modelling, and manufacturing electron cyclotron components
  - **Advantageous competencies and experience:** .
    - Optical Engineering: designing, developing, and applying optical systems and devices;
    - Management of procurement contracts for components, including the ability to define technical specifications, monitoring their execution in line with the rules and regulations in place, ensuring adherence to contractual terms and conditions.
- ***Education:***
  - **Essential:** Masters' degree or equivalent in radiofrequency, electrical engineering or other relevant discipline;
  - **Advantageous:** PhD degree or equivalent in microwave, or RF engineering fields or other relevant discipline
  - *The required education degree(s) 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).

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.