

# Job Title: Ion Cyclotron Mechanical Engineer TED-170

Req ID **844** - Posted **17/10/2019** - (France, 13067 St Paul Lez Duranc) - **Engineering support - 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.

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 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.

**Application deadline:** 24/11/2019

**Domain:** Engineering

**Department:** Engineering Design

**Division:** Heating & Current Drive

**Section:** Ion Cyclotron

**Job Family:** Project Engineering

**Job Role:** Engineer - 1

**Job Grade:** P2

**Language requirements:** Fluent in English (written & spoken)

**Contract duration:** Up to 5 years

## **Purpose**

To prepare the integration of the Ion Cyclotron Heating (ICH) & Current Drive (CD) system in the different buildings and rooms dedicated to its equipment;

To develop interface details of ICH equipment in collaboration with Technical Responsible Officers (TROs);

To prepare and check the installation and commissioning plan of ICH subsystems in collaboration with TROs;

To develop technical specifications for contracts of R&D or installation work;

To support ICH component development, in aspects related to mechanical engineering, installation, maintenance commissioning and safety.

## **Background**

The ICH&CD system main goal is to provide plasma heating in the range of Ion cyclotron frequencies (40 – 55 MHz). This system is composed of high voltage power supplies, Radio-frequency power sources, transmission lines and matching systems, high power antennas and plant control system. This position is to focus on physical integration and preparation of installation on site.

## **Major Duties/Roles & Responsibilities**

- Provides support to the ICH team, throughout ICH components design development and system integration activities to ensure the system meets ITER specifications;
- Prepares specifications of R&D contracts to support design development and qualification;

- Defines interface data of IC system packages with a specific focus on physical integration;
- Assesses design justifications provided by contributing Domestic agencies and external contractors;
- Participates in relevant ICH procurement arrangements and communicates developments in ICH design integration;
- Ensures installation and maintenance requirements are detailed and expressed in design inputs;
- Formulates installation sequences, performs clash analysis and actively contributes to the ICH construction process;
- Liaises with ICH TROs, as well as with the relevant engineers to write Engineering Work Packages (EWPs) whilst ensuring that the engineering technical inputs are compatible with constructability from a technical perspective;
- Prepares specifications of installation contracts for ICH equipment;
- Organizes meetings/workflows, contributions and assessment of ICH installation and commissioning;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- *May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.*

*Note: May be requested to work on beryllium-containing components. In this case, 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.*

## Measure of Effectiveness

---

- Produces high quality technical specifications in a timely manner;
- Collaborates and communicates well with all stakeholders;
- Identifies properly and manages accordingly all interfaces of IC system packages;
- Produces and maintains up to date high quality documentation;
- When necessary after acceptance tests, undertakes efficiently corrective actions and monitors their implementation;
- Ensures that EWPs are of a high quality to minimize risks associated with installation/construction.

## Experience & Profile

---

- **Professional Experience:**
  - At least 5 years' experience in mechanical design, engineering, integration and manufacturing of large complex system.
- **Education:**
  - Master's degree in Mechanical Engineering/Design 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 in:**
  - Applying quality assurance procedures and international and/or French industrial codes and standards (RCC-MR, ASME);
  - Writing and reviewing high standard progress reports and technical specifications;
  - Mechanical engineering in areas relevant to the ITER environment (e.g. Remote handling, Ultra High Vacuum (UHV) environment, nuclear environment, high heat flux components, auxiliary or plasma heating systems) is required;
  - Use of CATIA for mechanical design development and integration is required

- Manufacturing follow up is required;
- Identifying, analyzing and proposing proper solutions to the technical issues;
- Technical design of Ion Cyclotron Resonance Heating (ICRH) antennae or tokamak components is an advantage.
- ***Behavioral Competencies:***
  - Collaborate: Ability to 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/solutions.
  - 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 of 1) Nuclear Safety, environment, radioprotection and pressured equipment 2) Occupational Health, safety & security 3) 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 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.