

# Job Title: Systems Testing Engineer IO0697

Requisition ID **6321** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems - 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 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:** 03/07/2022

**Domain:** Engineering Domain

**Department:** Engineering Design Department

**Division:** Heating & Current Drive Division

**Section:** Electron Cyclotron Section

**Job Family:** Engineering

**Job Role:** Engineer – 3

**Job Grade:** P3

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

**Contract duration:** Up to 5 years

## **Purpose**

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As a Systems Testing Engineer, you will be responsible for the coordination of the commissioning of the Electron Cyclotron (EC) system (integrated testing of EC subsystems) together with the implementation of the required instrumentation. Within this role you will also provide engineering support to the Electron Cyclotron Section to ensure the finalization of the EC system component's designs, by managing the procurement, follow up of mm-wave components manufacturing, factory acceptance testing, on-site installation, on-site acceptance tests, commissioning and operations (including maintenance).

## **Background**

The EC system will be used at ITER for Heating and Current Drive (H&CD) in a number of plasma

operating scenarios. The EC system aims to deliver up to 20MW for plasma H&CD applications, with a potential upgrade for an additional 20MW (40MW in total) of delivered power. In order to achieve 20MW of delivered power, the EC system has an installed power of 24MW (sources located outside of the ITER tokamak building). Transmission lines and EW are integrated in the tokamak building guiding the power to the launchers, mounted in the vacuum vessel.

The EC system is also a First Plasma system, where approx. 8MW of power needs to be installed to accommodate plasma breakdown.

## **Key Duties, Scope, and Level of Accountability**

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- Coordinates the integrated commissioning of the different EC subsystems with the different Technical Responsible Officers (TROs) and associated domestic agencies;

- Develops the design and integration of EC system instrumentation and specific mm-wave diagnostics for the EC system components;
- Develops the procurement strategy and manages the process for instrumentation or any other related equipment required for commissioning;
- Manages EC system interfaces with the plant systems and components;
- Prepares associated documentation including technical specifications, interface documentation, commissioning plans, test procedures, maintenance plans, etc. as required.
- Supervise the installation and commissioning of EC subsystems when being executed;
- Ensures compliance of testing and commissioning plans with quality procedures and with the EC system subcomponent suppliers;
- Supports the component TROs in the oversight of the design finalization, manufacturing, installation and commissioning of the ECRH subsystems (Upper Launcher, Transmission Lines, Gyrotrons etc.);
- 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, week-ends and public holidays.

## **Measure of Effectiveness**

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- Manages the development and procurement of the associated instrumentation/components required for the EC component testing and commissioning within cost and schedule;
- Generates accurate documentation for the installation, testing and commissioning and effectively supports the preparation of these activities of the EC sub system components;
- Ensures that the quality of the testing and commissioning programs developed meet the project needs and are compliant with the subsystem suppliers;

- Assures that above mentioned objectives are achieved in a timely and effective manner, which meets safety, quality, cost and schedule targets;
- Alerts line management promptly on possible risk areas with appropriate preventive and corrective action plan(s).

## **Experience & Profile**

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- ***Professional Experience:***

- Minimum 8 years' experience in design, testing, commissioning of engineering systems within complex international environments or projects.

- ***Education:***

- Master's degree or equivalent in mechanical, radiofrequency, electrical 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 Expertise related to the development of instrumentation/diagnostics and testing within complex international environments or projects;
- Systems engineering and engineering standards such as regulation compliances (such as European Directives);
- Quality Control: Verifying the compliance of components within nuclear industry with all applicable requirements;
- Interface management: identifying technical, operational, and contractual interfaces to proactively reach resolution of issues, communicates issues and solutions with stakeholders;
- Contract Management and Execution for EC systems;
- Report Writing: Proficient at writing technical reports and design guidelines;
- The development of microwave devices and associated instrumentation in the frequency range of 60 to 200GHz is an advantage;
- Testing, commissioning and operation of high power microwave equipment (or equivalent) is an advantage;
- Metrology and alignment is an advantage;
- Using trouble shooting specialized programs is an advantage.

- ***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.

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***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.