

Job Title: Magnet Engineer IO0179

Requisition ID **7224** - 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.

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

As the IO attracts and retains people coming from a vast array of different backgrounds and cultures, bias and exclusion cannot be tolerated. The 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: 04/02/2024

Department: Machine Construction Department

Division: Ex-Vessel Delivery & Assembly Division

Section: Magnet Section

Group: Superconducting Coils & Assembly

Job Family: Engineering

Job Role: Engineer – 3

Job Grade: P3

Language Requirements: Fluent in English (written & spoken)

Contract Duration: Up to 5 years

Purpose

As a Magnet Engineer, you will develop and qualify cold test facility for superconducting magnets. As the ITER tokamak machine is the largest magnet system ever built in the world, development of these superconducting coils is imperative. This includes the Toroidal Field Coils and Poloidal Field Coils planning to be cold-tested.

You will develop and qualify the detailed procedures for the cold test, and develop specific mock-ups. In your role as Magnet Engineer, you will issue procedures, and design as needed mock-ups to qualify the process. Additionally, you will perform and report structural and thermal assessments to justify the cold test procedure to fulfil the requirements.

Key Duties, Scope, and Level of Accountability

- Develops the cold test facility and its components to implement their commissioning;
- Develops local techniques to check Paschen and leak tightness of the magnets and its components;
- Oversees operation of the cold test facility and in the magnet tests;
- Supports the definition of the commissioning strategy for the tokamak;
- Issues magnet assembly procedures as part of the engineering work packages (EWP);
- Designs dedicated mockups to qualify as needed cold test, magnet assembly and commissioning procedures;
- Performs requested structural and thermal assessment to justify the mockup design, or reviews the mockup structural assessment performed by the contractor;
- Completes structural assessment(s) to justify assembly procedures are fulfilling requirements, and reviews the structural assessments performed by contractor(s);
- Follows the proper implementation of the cold test, assembly, and commissioning procedures on field;
- May be requested 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.

Measures of Effectiveness

- Ensures the issuance of the cold test procedures and their qualification within defined timelines;
- Reports structural and thermal assessment analysis according to ITER standards per the defined schedule;
- Delivers, designs and procures needed mockup according to procurement plan;
- Ensures that deliverables meet safety, quality, schedule and cost requirements;
- Executes assembly procedures according to plan, communicating issues as needed.

Experience & Profile

- **Professional Experience:**
 - Minimum 8 years' experience in mechanical engineering or structural analysis in the field of magnet assembly within complex 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:**
 - Mechanical fabrication and testing techniques (welding and machining); understanding of engineering manufacturing drawings and tolerance specification;
 - Large scale mechanical assembly procedures, including experience supervising fabrication of large superconducting coils;
 - Developing and interpreting structural design and assessment codes such as ISO or ASME;
 - Superconductor electrical insulation procedure and experiences in its high voltage test, including under Paschen condition;
 - Design and engineering: planning design input, development, change control, verification and validation;
 - Interface management: identify, maintain, and / or resolve technical and functional interfaces to reach Project goals;
 - Tokamak superconducting magnet procurement management and execution: define needs and requirements, perform sourcing activities, and manage delivery including

managing external parties to ensure implementation according to contractual agreements;

- Assembly of superconducting coil for Tokamak;
- Finite element codes, ANSYS in particular;
- CAD systems, particularly CATIA V5.

- ***IO Core 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/define 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:

- 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;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, and ITER Values (Trust; Integrity; Excellence; Team mind set; Diversity and Inclusiveness);
- 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 Control & 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 be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General or Department 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.