

# Job Title: Superconductor Engineer IO0636

Req ID **2080** - Posted **30/10/2020** - (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.

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:** 13/12/2020

**Domain:** Construction

**Department:** Machine Construction

**Division:** Ex-Vessel Delivery & Assembly

**Section:** Magnet

**Job Family:** Project Engineering

**Job Role:** Engineer - 2

**Job Grade:** P3

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

**Contract duration:** Up to 5 years

## Purpose

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As a Superconductor Engineer, you will be the Technical Responsible Officer (TRO) for the Central Solenoid (CS) System, covering the design and performance assessment, procurement the on-site stacking of the individual coil modules, their installation into the cryostat and the commissioning of the system.

## Background

The ITER magnet system consists of 4 main magnet systems, the Toroidal Field (TF) coils, the Poloidal Field (PF) coils, the Correction Coils (CC) and the Central Solenoid (CS) coils. The CS is a stack of 6 coil modules at the center of the machine, using Nb3Sn superconductor operating at fields up to 13T and with a total weight of 1000t.

## Major Duties/Roles & Responsibilities

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- Manages the CS, CS pre-compression Structure and CS assembly tooling manufacture:
  - Ensures that quality controls are properly implemented;
  - Takes effective action where quality problems are found;
  - Follows up work under the Procurement Arrangement with US Domestic Agency and their suppliers.
- Processes deviation requests and Non-Conformance Reports, and provides performance impact predictions (structural, superconducting, electrical);

- Oversees the on-site stacking of the CS coil modules and the pre-compression structure by contractors, the preparation and qualification of special assembly procedures and drawings, the preparation of the Engineering Work Package and handing over to the contractors;
- Follows up the on-site stacking of the CS, especially for quality monitoring and supervision of special processes;
- Ensures that the CS and pre-compression structure design, manufacturing and assembly processes, materials and tools are fully qualified;
- Ensures the CS performance is maintained during ongoing testing and verification, based on the design assumptions and criteria, and implements corrective actions if needed;
- Provides strategic options for ITER operations of the CS stack during the assembly phase;
- Defines and manages interfaces between the CS coil/structure system and power supplies, cryoplant, feeders, instrumentation, vacuum as well as the construction organization;
- Prepares and monitors the budget for the CS work program;
- 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.

## Measure of Effectiveness

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- Monitors efficiently the procurement activities as per the ITER quality, cost and schedule requirements for delivery, as well as meeting intermediate ITER milestones;
- Maintains the performance requirements of the CS coil system;
- Manages interfaces efficiently and where possible, anticipates and solves issues to minimize any impact on schedule or cost;
- Meets the construction schedule requirements for stacking and pre-compressing the CS on-site;
- Maintains budget control of the CS construction work by efficiently tracking and planning all associated work;
- Meets the quality requirements for the CS system for the recording of manufacturing data, non-conformances and deviation requests.

## Experience & Profile

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- **Professional Experience:**
  - At least 8 years' experience working as engineer, managing superconducting coil & conductor design, analysis, testing, manufacturing, commissioning and operation.
- **Education:**
  - Master Degree or equivalent in an Engineering (Mechanical or Electrical) 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:**
  - Providing superconductor expertise in the field of superconducting magnets (with a good record of publications in respected journals being an advantage);
  - Anticipating complex and challenging technical issues or problems, drawing on experience and expertise;
  - Formulating a technical strategy and presenting it to senior managers and stakeholders;
  - Identifying, resolving and maintaining technical and functional interfaces;
  - Planning verification of compliance of the products with all applicable requirements and formulating and executing recovery plans.
- **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.
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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.