

# Job Title: Rotating Cryogenic Machinery Engineer IO0603

Requisition ID **5602** - 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:** 23/01/2022

**Domain:** Construction

**Department:** Plant Construction

**Division:** Mechanical Implementation

**Section:** Cryogenics

**Job Family:** Construction

**Job Role:** Engineer – 3

**Job Grade:** P3

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

**Contract duration:** Up to 5 years

## **Purpose**

In this role as a Rotating Cryogenic Machinery Engineer, you will provide expertise and technically manage the end of engineering phase, the preparation of commissioning, operation and maintenance activities of the ITER Cryogenic System, aiming to demonstrate the plant performances during operational acceptance testing and to guarantee its reliability and availability in operation.

## **Background**

*The cryogenic system (plant and distribution boxes) is providing the cold flows to cool the magnet, vacuum and thermal shield system of the ITER machine. The cryogenic plant and*

*distribution system is composed by industrial equipment's such as, screw and centrifugal compressors, Expansion turbines, refrigeration and distribution cold boxes and sets of other industrial machines driven and monitored by a complex Instrumentation and control architecture system. The plant is currently in the commissioning stage for the next 2 years, and will be in operation thereafter, while the distribution system in the tokamak building is ongoing and will enter the testing phase during the coming 4 years. The selected candidate will be part of a group of 4 to 6 engineers and technicians involved in supporting the integration and installation of the cryogenic distribution system.*

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

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- Ensures that all the engineering documentation required for the commissioning and operational testing of rotating machinery is available, properly maintained and recorded during the manufacturing and construction phases;
- Evaluates and consolidates the rotating machines manufacturers files to develop the maintenance plan and prepare the technical plan and specifications for maintenance contracts of the defined scope;
- Leads and manages the definition of the acceptance testing package for all compressors and associated processes (oil lubrication, Oil removal system, gas management panel);
- Is responsible for the Vibration and acceleration machine monitoring system testing and commissioning with the support of the manufacturer representative, and develops the machine monitoring strategy for operation;
- Performs diagnostic and issues technical analyses related to rotating equipment, to propose solutions with external contractors' support, and issue Work Packages, that will trigger the successful and safe commissioning of the Cryogenic plant;
- Provides process/equipment expertise during pre-commissioning, start-up and tuning;
- Prepares cryogenic plant tests reports to get plant acceptance certificate;
- Participates in the preparation the operational procedure and training plan of the shift operators for the defined scope of responsibilities;
- Ensures the interfaces with compressor and motors manufacturers during Pre Commissioning and Testing phase to ensure that machines and coupling are aligned and prepared according to the defined standards and manufacturer recommendations;
- 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.

### **Measures of Effectiveness**

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- Assures that overall Commissioning and operational procedures are established and implemented;
- Ensures that contracts are managed and delivered according to the defined timeline, quality and cost;
- Identifies and manages efficiently interfaces and solves technical issues with stakeholders;
- Manages Commissioning activities and associated accurate documentation in compliance with existing procedures;
- Maintains high level expertise technical competencies in mechanical, rotating equipment and cryogenic process within the ITER Organization;
- Demonstrates high level expertise for rotating machinery work packages issuance related to a large power refrigeration plant;

- Collaborate successfully with technical partners, suppliers, Domestic Agencies and other units within ITER organization.

## Experience & Profile

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- **Professional Experience:**
  - Minimum 8 years' experience in the design, commissioning, and preferably in maintenance expertise and management of a large power, refrigeration or process plant, with associated Rotating equipment.
- **Education/ Know-How :**
  - Master's degree or equivalent in mechanical or process engineering;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in the relevant domains.
- **Language requirements:**
  - Fluent in English (written and spoken).
- **Technical competencies and demonstrated experience in:**
  - **Specialized Domains of Work (Rotating Equipment):**
    - Extensive experience of large power oil injected screw compressors, vacuum pumping and oil lubrication systems; machine alignments as well as diagnoses issue related to this type of machine;
    - Helium and/or Nitrogen centrifugal compressors, Cryogenic circulators, Turbo expanders;
    - Vibration and monitoring system exploitation and diagnostic Proven Experience in industrial maintenance management.
  - **Engineering management/coordination of activities:** including interactions with experts of different technical disciplines, preferably in a nuclear industry environment;
  - **Interface Management:** Identifying, resolving and maintaining technical and functional interfaces;
  - **Project Management (including procurement and contracts):** Planning, measuring progress of project work, managing risks/costs and reporting on progress;
  - **Quality assurance, quality control, and safety codes and standards** for rotating equipment would be advantageous;
  - **Using MS Office and in Bently Nevada MMS system 1** would be advantageous.
- **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.