

# Job Title: Mechanical Design Engineer IO1021

Requisition ID **4201** - Posted - (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:** 08/08/2021

**Domain:** Construction

**Department:** Plant Construction

**Division:** Mechanical Implementation

**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**

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As a Mechanical Design Engineer, you will produce and review the equipment design for Vacuum Vessel Pressure Suppression System (VVPSS) and Hydrogen Mitigation System (HMS), namely the Rupture Disc & Bleed Valve, Wet recombiner, Passive Autocatalytic Recombiner (PAR), Cooler condenser and Inertial separators.

Additionally, you will write the technical specification for procurement of the equipment for development/procurement

## **Background**

The VVPSS is a hard core safety system that protects the Vacuum Vessel of the ITER Tokamak from overpressure and maintains dynamic confinement of radiation in the event of a significant leak from the Vacuum Vessel.

The VVPSS:

- Provides a steam condensation capacity for Loss of Coolant Accidents
- Maintains a pressure cascade into the VV in the event of Loss of Vacuum Accidents
- Protects the Detritiation System from hydrogen explosion
- Provides a barrier against the release of tritium, ACPs and beryllium into the environment

This position is assigned to the VVPSS Group.

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

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- Produces, contributes to, and reviews the mechanical design of the Rupture Disc and Bleed Valve assembly of the VVPSS system;
- Produces the mechanical design of the Wet recombiner, PAR, Cooler condenser and Inertial separators for the HMS;
- Performs the Structural analysis of the equipment for the Rupture Disc & Bleed Valve, Wet recombiner, Passive Autocatalytic Recombiner (PAR), Cooler condenser and Inertial separators;
- Participates in the Mechanical equipment analysis with the VVPSS team;
- Ensures the defense during the final design reviews;
- Participates in verifying the equipment loads on the buildings;
- Prepares the technical specifications of the equipment following completion of design as per the specified codes according to the best quality engineering as well as industrial standards and ensure release as per defined schedule
- Participates in call for tenders as Technical Responsible voting member to award contracts for the components/equipment, and follows-up on contracts, in collaboration with Procurement & Contracts Division;
- Ensures that deliverables are supported by high quality documentation according the ITER standards and quality requirements;
- Reviews the equipment development interfaces between the VVPSS and HMS design teams;
- 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.

Note: 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.

### Measure of Effectiveness

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- Develops efficiently the design of VVPSS & HSM equipment within the defined cost, quality and schedule;
- Implements on time preparation of the technical specification according the baseline schedule;
- Ensures on time and high quality delivery for the equipment under the defined scope of responsibilities, in compliance with quality and safety requirements.

### Experience & Profile

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- **Professional Experience:**
  - At least 5 years' experience as equipment design engineer in a highly regulated environment such as Nuclear Power Plant or other oil & gas, pharmaceutical or aerospace industries.
- **Education:**
  - Master's degree or equivalent in Nuclear Engineering, Mechanical Engineering or other relevant similar 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:**
  - Equipment design and analysis in regulated environment such as nuclear industry;
  - Writing technical specifications, in particular complying with American or European Nuclear Safety Codes & Standards requirements;
  - Procurement of components and equipment (i.e. pipes, fittings & flanges etc.) is required: knowledge and practice of procurement procedures, delivery, management of external parties, and implementation within contractual requirements;
  - Experience in fabrication, Construction as well as welding is desirable;

- Quality Assurance and Quality Control: knowledge of requirements for international quality standards (for both management and product), methods, and practices;
  - ANSYS and multi-CAD system (AVEVA E3D/CATIA/ENNOVIA).
  - **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.