Job Title: Mechanical Engineer IO0954

Requisition ID **6584** - 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: 02/10/2022
Domain: Engineering Domain
Department: Engineering Design Department
Division: Fuel Cycle Division
Section: Tritium Plant Section
Group: Atmospheric Detritiation System
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 Mechanical Engineer, you will perform and/or oversee detailed design and analysis of selected Tritium Plant sub-systems of ITER.
Additionally, you will ensure mechanical engineering solutions are comprehensively verified and validated to meet the performance, lifecycle and safety (defined) requirements.

Background

The Tritium Plant comprises the tokamak fuel cycle processing systems, as well as tritium confinement and detritiation systems. The equipment ranges from ultra clean small bore tubing inside gloveboxes to more industrial scale piping and HVAC equipment. The majority of the plant is at preliminary design stage, though some equipment is in final design and some equipment is undergoing installation. As such there is a need for an experienced mechanical engineer to support the Section to deliver and oversee the design and realization of the Tritium Plant.

Major Duties/Responsibilities

- Performs and reviews Tritium Plant sub-systems mechanical designs including system design, component selection, material selection, analysis (e.g. loads) and layout;
- Performs mechanical analysis (i.e. stress, structural, pressure retention for vessels) of the Tritium Plant sub-systems to check that the design fulfils the requirements of full plant lifecycle including

testing, commissioning, operation, maintenance and decommissioning;
- Performs mechanical piping analysis to check that the design fulfils the requirements of full plant lifecycle
- Reviews technical specifications for Tritium Plant sub-systems equipment, in accordance with the requirements;
- Prepares and maintains design and analysis documents, in addition to communicating them with relevant stakeholders and interfaces including System Integration, Safety Responsible Officers, Design Integration and Domestic Agencies;
- Follows-up and reviews the detailed design and plans for manufacturing, testing, installation and commissioning activities of Tritium Plant sub-systems including those performed by contractors;
- Ensures that work is performed in accordance with quality assurance procedures and quality control is performed effectively for equipment supply and installation;
- May be requested to be part of any of project/construction teams and to perform other duties in support of the project schedule;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays;

Measures of Effectiveness

- Demonstrates that analysis of design solutions are compliant with quality & safety requirements and implemented with the overall ITER schedule;
- Produces high quality, clear and thorough analysis and documents within the defined schedule;
- Produces sub-systems designs to quality and in a timely manner;
- Produces, maintains and records up to date documentation;
- Anticipates and/or proposes practical, cost-effective, manageable and efficient solutions to solve issues;
- Communicates efficiently with all stakeholders associated with interfacing systems and management;
- Works effectively in teams and contributes to the overall success of the Fuel Cycle design/build project.

Qualifications and Experience

- ***Professional Experience:***
  - At least 8 years' experience in performing mechanical design and analysis of complex gas/liquid process systems in the field of nuclear or hazardous environments;
- ***Education:***
  - Master's degree or equivalent in nuclear, mechanical engineering or other relevant discipline;
  - Extensive experience in similar jobs (involving similar work responsibilities) and/or additional training certificates in relevant domains may be considered a reasonable substitute for the required educational degree.
- ***Language Requirements:***
  - Fluent in English (written and spoken).
- ***Technical Competencies and demonstrated experience in:***
  - Piping design and stress analysis following ASME B31 codes;
  - Design and analysis of supports and structures following Eurocodes or ANSI/AISC codes;
  - Pressure vessel design and analysis following ASME VIII code;
  - Design and analysis of piping penetrations;
  - Layout design accounting for all lifecycle requirements including operations, maintenance, installation, off normal events (e.g. escape routes) and decommissioning;
  - Manufacturing, testing, qualification and construction of process plant;
  - Quality control: verifying compliance of analysis with applicable requirements;
  - Problem Solving: assesses problems, identifies root causes and reaches practical solutions in a consistent way to reach project objectives;

- Capability in using software to perform mechanical and structural analysis, including finite element analysis (e.g. GT Strudl, ANSYS and CAESAR II).

- ***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.

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.