

# Job Title: Mechanical Engineer IO1090

Requisition ID **6569** - 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:** 18/09/2022

**Domain:** Construction Domain

**Department:** Plant Construction Department

**Division:** Mechanical Implementation Division

**Section:** Cooling Mechanical & Welding Section

**Group:** Mechanical Design Implementation

**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 for the ITER Cooling Water Systems (CWSs), you will perform thermo-mechanical analyses of piping systems and relevant supporting structures for the Cooling Water System (CWS), as well as assess and justify the structural loads from the CWS systems to the interfaces with buildings and steel frames.

This role is also involved in the procurement of equipment for the Safety Important Circuit (SIC) Chilled Water Systems (CHWS), and for nuclear buildings.

Additionally, you will prepare and follow up the qualification of the CHWS-H1 equipment (example: chillers and pumps) according to the rigid design constraints (e.g. seismic load, fire risk etc.).

## **Background**

The Cooling, Mechanical and Welding Section (CMW) is responsible of the design and procurement of the ITER secondary loop Component Cooling Water System (CCWS) Chilled Water Systems (CHWS) and ITER tertiary loop Heat Rejection System (HRS). This role contributes to the completion of these activities through collaboration with engineers, analysts, and designers across ITER Organization (IO) to ensure the design and manufacturing is finalized according to quality, engineering, and industrial standards.

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

- Develops the design, and performs stress analyses, of CWS piping systems;

- Performs structural analyses of CWS piping supporting structures in order to assess and/or to justify the loads on civil structures, including beam joints verification, and preliminary structural analyses of anchor plates of the CWS piping supporting structures for both Embedded Plates and Post Drilled Plates;
- As Technical Responsible Officer (TRO), and Contract Responsible Officer (CRO), develops Technical Specifications for the procurement, fabrication, qualification and testing of the CHWS equipment, prepare relevant tenders, and updates documents as needed;
- Follows up on the manufacturing of the CHWS equipment (e.g. chillers, pumps, heat exchangers, pressurizer, any other rotating units and water polishing unit) including qualification tests, and the final acceptance tests (FATs);
- Prepares and monitors the qualification of the CHWS equipment according to the rigid design constraints (e.g. seismic load, fire risk etc.);
- 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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- Performs the piping, supports and equipment stress analyses for the CWS within defined timeline;
- Prepares technical specifications, plans and procedures for the procurement of the CHWS within defined schedule;
- Delivers documents required to launch tenders for the CHWS-H1, procurements according to the required time schedule and available budget;
- Ensures contracts are executed within required time schedule and available budget, in good collaboration with Procurement and Contracts Division;
- Efficiently monitor/follow up the manufacturing and testing activities for the CHWS-H1;
- Ensures that data, reports and documents are produced accurately, in the correct format, and within defined timelines.

### Experience & Profile

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- **Professional Experience:**
  - Minimum 8 years' experience in managing the procurement of equipment for Cooling Water Systems in the field of nuclear installations, within complex international environments or projects.
- **Education:**
  - Master's degree or equivalent in Mechanical, Nuclear 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 design and sizing of piping and equipment for plant industrial systems, nuclear facilities etc;
  - CAESAR II, STAAD PRO and other similar computer software commonly used for design of CWS systems;
  - Procurement of components/equipment for CWS complex systems, qualification and FATs as well as for the relevant commissioning (e.g. for chillers, pumps, any other rotating machines and heat exchanges);
  - Project Management: planning, measuring progress, managing risks and costs, and reporting on progress to manage programs or initiatives within the constraints of human and financial constraints;

- Contract, procurement management and execution: defining needs and requirements, performing sourcing activities, and managing delivery including managing external parties to ensure implementation according to contractual agreements;
- International standards for designing CWS equipment (e.g. ASME, API and TEMA for Heat Exchangers) as well as PED for pressure vessel conformity assessment in EU;
- Quality Management: knowledge of product and/or management requirements for international quality standards, methods, and practices;
- Interface management: identify, maintain, and / or resolve technical and functional interfaces to reach Project goals;
- Knowledge in ASME B31.1, ASME B31.3, Eurocodes 0, 1, 2, 3 and 8, MSS SP 058, ASME section III NC and French ESP Decree PED 2014/68/UE are recommended;
- Knowledge of 2D and 3D CAD (e.g. AVEVA Diagrams and E3D, CATIA/ENOVIA, AutoCAD) is considered 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.