Job Title: Assembly & Analysis Engineer IO0129

Requisition ID **4962** - 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: 09/01/2022
Domain: Construction
Department: Machine Construction
Division: Ex-Vessel Delivery & Assembly
Section: Magnet
Job Family: Engineering
Job Role: Engineer – 3
Job Grade: P3
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

In this role, you will coordinate the structural, electro-magnetic and thermo-hydraulic analyses on tokamak components under Ex-Vessel Delivery & Assembly Division (EVDA) responsibility, including integrated analysis with tools.
Additionally, you will support development of engineering and construction work packages for in-cryostat and in-vessel components for handover to Tokamak Assembly Contractors, in close collaboration with engineering teams and “Construction Management as Agent” (CMA).

Background

Analysis of the components of the tokamak is required throughout the construction of the tokamak. Analyses may be driven by updated input loads, revised or new operational scenarii, assessment of possible component modifications due to non-conformances, deviation requests, field change requests or alternative assembly processes including different interfaces to assembly tools. The components under the responsibility of EVDA include poloidal field coils, correction coils, central solenoid, the feeders for all magnets systems as well as the complete cryostat including its support system and interfaces to the tokamak building.
This position is assigned to the In-Vessel Coils & Performance Group.

Major Duties/Responsibilities

- Develops and maintains a resource-loaded plan, including both internal and external resources as required, to meet the analysis needs of EVDA;
- Proposes analyses tasks for outsourcing and oversees the tender, contract placement and execution for analyses contracts;
- Develops and maintains the input data, boundary conditions and analysis results, in line with applicable ITER Organization (IO) processes;
- Reviews and approves analyses reports prepared by contractors;
- Establishes and maintains computer based analysis data libraries for analyses related to tokamak components under EVDA responsibility, ensuring the traceability of analyses through the component lifecycle;
- Performs and oversees finite element structural, electro-magnetic and / or thermo-hydraulic analyses, including definition of the input data and boundary conditions, and preparation of reports;
- Performs assessment of deviation requests / non-conformities, based on all required justifications, including proposal and follow-up of corrective actions where appropriate;
- Reviews construction processes for in-cryostat components, ensuring consistency of analysis with assembly, lifting and handling processes;
- Supports preparation of engineering and construction work packages for tokamak components on the basis of system engineering input:
    - Confirms relevant assembly strategies for the installation process;
    - Documents assembly process inputs for cost and schedule development;
    - Identifies and resolves open points in the construction process;
    - Fixes process interfaces between components or systems and tools;
    - Proposes approaches to improve quality, and / or optimize cost and schedule;
    - Controls and confirms input data to Tokamak Construction Contractors with CMA.
- May be required to survey and monitor construction work execution, including as a member of the IO–CMA Integrated Team, anticipating and resolving difficulties to ensure construction progress to schedule;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;

Measures of Effectiveness

- Preparation of work plans and budget estimates, including for external contracts within defined timelines;
- Preparation of accurate documentation and input data for analysis contracts as requested;
- Timely preparation, execution, review and approval of external analyses contracts;
- Provides an efficient and high quality analysis service to the division members and other stakeholders;
- Assesses deviation requests and non-conformities in a timely manner and follows up corrective actions as necessary.

Qualifications and Experience

- ***Professional Experience:***
    - At least 8 years' experience managing engineering analysis systems for multidisciplinary technical or construction projects.
- ***Education*:**
    - Master's degree or equivalent in 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:***
  - Analysis requirements: Demonstrated ability to use analysis data to propose design or process solutions, improvements and optimisations including using ANSYS to perform structural, thermal and electromagnetic analysis of large welded or bolted components and assessing performance against defined design criteria, in addition to elasto-plastic stress and thermal fatigue analysis with ANSYS and/or ABAQUS; LEFM fatigue/fracture assessment would be an advantage;
  - Coordination, with demonstrated ability to set priorities and meet deadlines;
  - Contract management: including requirements definition, and management of external parties to ensure execution and implementation according to contractual agreements;
  - International codes and standards such as ISO, EN, RCC-MR, ASTM and ASME for construction of pressure equipment and/or nuclear equipment would be an advantage.
  - Quality Management: knowledge of requirements for international quality standards (both management and product), methods and practices, QA/QC implementation for industrial production;
  - Experience in specifying or supervising construction work in accordance with requirements would be a definite advantage;
  - Experience with the use of CAD systems. Specific experience with CATIA/Enovia would be an asset.
- ***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.

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.