

Job Title: Electrical Engineering Officer IO1079

Requisition ID **6081** - 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: 29/05/2022

Domain: Construction Domain

Department: Plant Construction Department

Division: Electrical Implementation Division

Section: I&C Infrastructure Section

Job Family: Construction

Job Role: Engineer – 2

Job Grade: P2

Language requirements: Fluent in English (written & spoken)

Contract duration: Up to 5 years

Purpose

As an Electrical Engineering Officer, you will contribute to the cable tray design and cable routing in ITER, and perform electrical calculations. You will collaborate with different stake holders, such as engineers, designers and construction teams to ensure the location of electrical enclosures (Distribution boards, Instrumentation & Control Cabinets, Motor Control Centers, Variable Frequency Drives) according with the Systems designs and the layout constraints (space availability, building openings, etc.). You will also collaborate in the bonding of the electrical and mechanical components in ITER by issuing the corresponding Engineering Work Packages (EWP) on time for the electrical enclosure installation and the equipment bonding.

Background

ITER Instrumentation and Control Infrastructure Section (ICIS) inside the Electrical Implementation Division (EID) is responsible for the design of the cable tray System network, cable routing and electrical power distribution system. It is also responsible of creating and releasing of the corresponding Engineering Work Packages for the construction of ITER plant systems inside the Tokamak Building and non-nuclear or associated buildings.

The current position is related to the allocation of electrical enclosures in the Tokamak complex, according with the Systems electrical design. You will need to analyze the requests from the Plant Systems for additional electrical enclosures, and to find the most suitable allocation. The location of new electrical

enclosures may require to re-shuffle existing ones. The layout of electrical enclosures shall be compatible with the Systems electrical design, cable tray network and overall layout constraints. The design process includes: Collection of Single Line Diagrams and electrical Cabling Diagrams, modelling the cable trays and conduits in 3D using specified software, and cable routing with automatic tools. The design activities requires close co-ordination with the design office in terms of development of the proper component catalogues and many utilities to provide correct parameters. Also, it's required to have close co-ordination with the electrical engineers of Plant Systems.

Major Duties/Roles & Responsibilities

- Manages the positioning of electrical enclosures in the Tokamak complex for all the Plant Systems by replying to the requests of the Plant Systems for new electrical enclosures;
- Harmonizes the work between CAD and engineering inputs and works with relevant stakeholders to:
 - Take the documentation of the cable database and existing cable tray network as input, with the new request of electrical enclosures and prepare the updates on cable routing;
 - Perform quality checks;
 - Review the CAD deliverables resulting (including drawings).
- Reviews the location of the electrical enclosures according with the environmental conditions (normal and accidental operation);
- Reviews the Plant Systems Single Line Diagrams and Cabling Diagrams and proposes updates on the layout and/or architecture to optimize the cable routing;
- Prepares the drawing and manufacturing documentation for electrical enclosures installation
- Designs bonding for electrical and mechanical Systems;
- Prepares 2D installation drawings and Bill of Materials for bonding for electrical and mechanical Systems;
- Calculates cable sizing for the electrical loads, according to the applicable standards and installation methods, in addition to Load flow in the electrical network and circuit breakers/design of electrical boards;
- Prepares technical work instructions for the production of EWPs and ensures their propagation to all stake holders;
- Provides support to the team in resolving engineering related issues that may arise during the execution of the work, mainly related with electrical systems;
- Produces progress reports, outlining problems areas and proposing corrective measures;
- Monitors, guides on and implements nuclear safety requirements in the engineering outputs;
- Monitors change management during construction and provides support to the mechanical engineering teams to resolve the construction issues, including Request for Information (RFI) from the contractors;
- Supports the line management on material procurement for construction based on the engineering work packages;
- 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 shifts, nights, weekends and public holidays.

Measure of Effectiveness

- Efficiently implements actions to move forward the project specifically related to industrial quality engineering drawings for the release of engineering work packages;
- Fixes efficiently technical issues related to engineering drawings promptly and in line with relevant codes & standards;
- Ensures consistency in the engineering design by efficiently communicating and integrating with the ITER construction engineers during the construction phase and future operation phase;
- Alerts line management promptly on possible risk areas with appropriate preventive and corrective action plan(s);

- Proactively follows and actions multi-CAD activities, so that all the catalogues have been developed before the start of the 3D design work;
- Ensures that lessons learned and engineering solutions are well propagated within the team and implemented to mitigate future issues;
- Ensures compliance and traceability and records of all relevant documents as per nuclear safety requirements and quality standards.

Experience & Profile

- **Professional Experience:**
 - Minimum 5 years' experience in electrical engineering design in the field of large nuclear installations within complex international environments or projects.
- **Education:**
 - Master's degree or equivalent in Electrical Engineering or equivalent;
 - 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:**
 - Specialized Domains of Work & Technical Expertise: Cable engineering (cable diagram production, cable routing, cable tray design), including bonding electrical and/or mechanical systems;
 - Integrated Management of Construction and Engineering: In-field supervision of cable pulling or cable tray installation;
 - Design (creating technical design based on project requirements) of cable sizing, circuit breaker ratings and boards design; Contributing or leading design review; developing models and calculation; Experience in a remote design collaboration environment;
 - Software tools to perform electrical calculations (eg PowerFactory, Caneco BT, ETAP)
 - Systems Engineering and Design Control (Design Input and Change Control, Design Development and Interface Control, Design Verification and Validation); Experience of CAD software (e.g. SSD, Autocad, AVEVA E3D, CATIA/ENOVIA);
 - Interface Management (identifying, resolving and maintaining technical and functional interfaces): Knowledge and skills needed to work independently in the specific domain of work; Analyzing and proposing solutions for interface or challenging technical issues problems, drawing on experience and expertise.
- **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.