

Job Title: Electrical Engineer (Power Distribution / Power Conversion) IO0500 IO0646 IO1000 TCWS-052

Requisition ID **7986** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Construction and Installation - New Posting**

Fusion, the nuclear reaction that powers the sun and the stars, is a promising long-term option for a sustainable, non-carbon emitting global energy supply.

The ITER Organization (IO), based in the southern France, welcomes best talents who can together prepare the way to this new energy in a truly multi-cultural work environment.

We offer challenging assignments in a wide range of areas and encourage applications from candidates with all levels of experience. Applications from under-represented ITER Members' nations and women candidates are strongly encouraged, as IO strongly believes that a diversified, equitable, and inclusive workplace is crucial in solving one of the most complex scientific and engineering projects in the world today.

As the IO attracts and retains people coming from a vast array of different backgrounds and cultures, discrimination and exclusion cannot be tolerated. The IO believes it is our diverse perspectives and background that gives unique strength and value to the ITER mission, regardless of race, member nation, gender, religion, status, sexual orientation, or disability - all are welcome and respected at ITER. The IO is committed to fostering a fair and equitable environment across all areas of the project, including compensation and benefits.

ITER CARE Values (Collaboration / Accountability / Respect / Excellence):

We perform our work with care, we care for the well-being of colleagues, our families and ourselves, and we care about the health of the planet for generations to come. CARE drives our work and our behaviors at ITER.

To see why ITER is a great place to work, please look at this [video](#)

Application Deadline: 07/09/2025

Department: Engineering Services Department

Division / Program: Electrical Engineering Division

Section / Project:

Job Grade: P1/P2 (SALARY SIMULATOR)

Language Requirements: Fluent in English (written & spoken)

Contract Duration: Initial Employment Contract up to five years with possibility for extension

Please note that the entry grade of this position begins at P1 and the final grade offered to the selected candidate is subject to the decision of the IO Director General.

*The selection process will be conducted with the objective of filling **the four vacant positions** with also the purpose of drawing up a reserve list of rostered candidates for future vacant positions. The reserve list initially remains valid for two years, with the possibility of extension at the Director-General's discretion.*

Overview

Are you looking for an exciting opportunity at the heart of an ambitious fusion energy project? Join our Electrical Engineering Division, within the Engineering Service Department (ESD) as an Electrical Engineer.

As an **Electrical Engineer**, your goals will include:

- Contributing to the engineering design, manufacturing supervision, construction, testing, commissioning and system integration of electrical components and systems.

- Ensuring deliverables are produced according to project schedule and budget, within a quality-assured environment that requires rigor and a systematic way of working.
- Developing, under the leadership of your discipline manager, your skills and experience for the benefit of the Project.

The individual “Electrical Engineer” positions covered by this vacancy are for the following two specializations:

Power Distribution: AC power distribution at all voltage levels (400V – 400kV); high-voltage switchyards; emergency diesel generators; AC and DC uninterruptible power supplies, including the associated AC and DC power distribution systems and protective relays. The scope also includes performing analyses and calculations such as load flow, short circuit, cable ampacity, time-overcurrent protection, protection selectivity, and motor starting. The required competencies and qualifications for this area include expertise in both main power components and local instrumentation and control (I&C), including an understanding of the protection and operation of controlled components and systems.

Power Conversion: Power converters (four quadrants, voltage source converters and thyristor converters above 5 MVA/unit), reactive power compensation, and power systems. The scope also includes performing electromagnetic transient (EMT) analyses for both steady-state and transient conditions. The required competencies and qualifications for this area include expertise in main power components, power electronic devices, and the local instrumentation and control (I&C), for protecting and operating the controlled components and systems.

The ESD provides the required skilled engineering resources or services, which are necessary for the successful completion of the ITER Project.

The Electrical Engineering Division provides technical support to the ITER project in the field of engineering design, analyses, manufacturing and commissioning of electrical systems and components. Being a member of the Electrical Engineering Division, you will have the opportunity to share and develop your expertise with other colleagues working in the same discipline on different ITER units.

Key Duties & Responsibilities

Primary Responsibilities:

- Proposes and implements actions required to resolve technical and engineering issues.
- Performs engineering analyses and calculations of components and integrated system engineering and develops the procedures for the required Type and Factory Acceptance Tests.
- Provides engineering support (analyzing system requirements, including managing interfaces, producing study reports, producing conceptual or engineering drawings) for the plan, design and procurement of the electrical components and systems.
- Produces Technical Specifications and documents for procurement contracts.
- Supports in the supervision and engineering support of the components testing and installation, including the development of installation and testing sequences.
- Contributes to operation, troubleshooting and maintenance of components and systems

Additional Responsibilities:

- Implements and ensures consistent application across all processes for Quality Assurance (QA) & Quality Control (QC) requirements and standards for components and systems, in close relation with the Quality Management Division (QMD).
- Monitors and implements the main principles of electrical and nuclear safety requirements in the engineering outputs.
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
- Supports the supervision of the on-site contractor for installation, onsite testing and commissioning activities.
- Ensures that lessons learned and engineering solutions are well propagated within the team and implemented to mitigate future issues.

Please note that job descriptions cannot be exhaustive, and the staff member may be required to undertake other duties, which are broadly in line with the above primary responsibilities.

This position is shift and/or on-call based, and crucial to maintaining continuous operations and ensuring the highest level of service for our stakeholders. This requires shift rotation and/or availability including day, evening, and night shifts, as well as weekends and holidays, depending upon project or team needs.

Experience & Competencies

Essential:

- **Demonstrated experience (including internships)** in elements of design, procurement, installation and onsite troubleshooting in the field of electrical components and systems, within complex projects.
- **Power Distribution:** Design, test and operation of components and systems that distribute and deliver electricity at medium and low and voltage from the main incoming feeders at medium voltage to individual connected loads of rated power up to about 5 MVA/load. Key required competencies also include designing distribution networks, including the main components such as distribution transformers, distribution boards and power cables, analysing the electrical loads, and ensuring reliability and prioritizing safety and standards compliance.
- **Power Conversion:** Design, test and operation of components and systems for high power (above 5 MVA/unit), four quadrants power converters and reactive power compensators based on either voltage source or thyristor technologies. Key required competencies also include design and testing of the local instrumentation and control system, including optimization of open and close loop controls, supervision and protection of the controlled components and systems.
- **Preparing technical documentation** such as design description documents, interface control documents, tender technical specifications and test procedures.
- **Performing engineering analyses:** production of analysis reports and calculation notes.
- **Communicate Effectively:** Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment.
- **Continuous Improvement:** proposing changes to processes and systems to enhance efficiency, quality, and productivity over time.
- **Quality Management Systems (QMS):** apply the applicable procedures related to your field of activity.

Desirable:

- Experience in multi-national and cross-cultural working environments.
- **Organizational Savvy:** maneuvering comfortably through complex policy, process, and people related organizational dynamics.
- **Optimizes Work Processes:** knowing or identifying the most effective and efficient processes to get things done, with a focus on continuous improvement.

Qualifications

Essential:

- Master's degree or equivalent in Electrical Engineering field with specialization as per the scope of activity in either power distribution and/or power conversion.
- *The required education degree(s) may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains*

The following items apply to all jobs and job holders for the duration of tenure at ITER Organization:

- **The CARE Values are a framework of principles that guide our actions and define the culture and spirit of the ITER Project:**

Collaboration: We collaborate with commitment and flexibility using the power of teamwork, building partnerships, and working with others to reach shared objectives;

Accountability: We are accountable for the whole project - we take responsibility for our specific actions and are transparent in our daily work, holding self (ourselves) and others accountable to meet commitments;

Respect: We treat each other with respect and dignity at all times, knowing that all of us belong here. We appreciate the value that our multicultural and diverse community brings to the ITER Project;

Excellence: We are driven by excellence; we are agile and innovative while maintaining the highest standards of safety, quality and integrity;

- **ITER Core Technical Competencies:**

- 1) **Nuclear Safety, Environment, Radioprotection and Pressured Equipment**
- 2) **Occupational Health, Safety & Security**
- 3) **Quality Control & 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 perform other duties in support of the project as defined by your line manager, and when relevant upon the request of the matrix manager;
- May be requested to work outside the ITER Organization reference working hours, including nights, weekends and public holidays, due to business needs - this may include on-call, shift work, etc.
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- For staff expected to perform on-call, shift hours, or other work outside ITER Organization reference working hours, including nights, weekends, and public holidays, **the possession of a driving license valid in France is required. no commuting vehicle will be provided by the ITER Organization.**
- Informs management of any important and urgent issues that cannot be handled by line or matrix management and that may jeopardize the achievement of the Project's objectives;

The ITER Organization (IO) is an Equal Opportunity organization committed to diversity and inclusive in the workplace.