

Job Title: Instrumentation and Control Engineer IO0706 & IO0281

Requisition ID **7984** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems - 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: 31/08/2025

Department: Engineering Services Department

Division / Program: Fusion Technology - I&C Division

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

Overview

Are you looking for an exciting opportunity at the heart of an ambitious fusion energy project?

Join our Fusion Technology and I&C (FTIC) Division, within the Engineering Service Department (ESD) as an Instrumentation and Control Engineer.

As an **Instrumentation and Control Engineer** your goals will include:

- Performing the entire engineering lifecycle (specification, design, qualification, procurement, installation, integration, commissioning and maintenance) of instrumentation and controls systems (I&C).
- Providing engineering input and technical support for the scope of activity.
- 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 ESD provides the required skilled engineering resources or services, which are necessary for the successful completion of the ITER Project.

Fusion Technology and I&C (FTIC) Division provides technical support to the ITER project in the field of design, analysis, and lifecycle management of critical fusion and I&C systems. Being a member of the FTIC 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 and Responsibilities

Primary Responsibilities:

- Plans, prepares and performs the installation and proactive integration of I&C systems/subsystems to achieve cohesive functionality, optimal performance and safe operation.
- Proposes, develops, and implements solutions to improve, support and maintain both the central I&C functions interfacing with ITER Plant Systems, and the Data Acquisition (DAQ) and/or Real-Time (RT) controllers for the ITER Plant Systems.
- Drafts and reviews testing, integrations and commissioning plans, conducts safety studies, and oversees operational activities of the relevant I&C system(s).
- Specifies and develops the global functional analysis, architecture and process control of the relevant I&C system(s).
- Coordinates with technical stakeholders on design, constructability and commissioning changes and issues relating to I&C system(s) and provides creative and adaptive solutions.
- Defines, reviews and monitors change control of configuration items of I&C system(s) throughout the entire lifecycle including design, manufacturing, installation, commissioning and operation.

Additional Responsibilities:

- Participates in the review of the engineering designs providing guidance on design, installation and maintenance aspects related to the relevant I&C system(s).
- Ensures that the relevant interfaces of the equipment and scope are clearly defined, verifying the constructability and the construction readiness.
- Issues progress reports, monitors and reports variances on all technical, cost and schedule aspects of these project variables.
- Identifies the technical, cost and schedule risks and contributes to risk management.

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:

- **Demonstratable experience (including internships)** in I&C Engineering preferably within complex environments or international projects.
- **I&C Engineering:** Design, procurement, installation and commissioning of I&C systems, ideally including the development and testing of application control software for industrial-type systems.
- **Problem Solving:** Resolving complex and challenging technical issues or problems, drawing on experience and expertise.
- **Interface Management:** identify, resolve and maintain technical and functional interfaces.
- **Courage & Communication:** Raises difficult issues to ensure they are addressed in a professional manner. Offers ideas or opinions without fear of criticism or professional risk, with an 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:

- **Construction Oversight:** Overseeing/participating in installation, assembly, testing of I&C systems.
- **Hardware/Software:**
 - Linux, virtualization environments and real-time operating systems
 - C++ and Field Programmable Gate Array (FPGA) in the context of DAQ and RT control applications
 - EPICS and/or other commercial or open-source SCADA systems
- Procurement and Contract Management including writing technical specifications.
- **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 or equivalent in I&C, Electronics, Electrical Engineering, Physics or Computer Science or other relevant discipline.
- *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.