

Job Title: Control Systems Engineer IO0621

Requisition ID **4820** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Control and Data Acquisition - 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: 12/12/2021

Domain: Science & Operation

Department: Science, Controls & Operation

Division: Controls

Section: Facility Control System

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 Control Systems Engineer, you will configure, test and validate Siemens Programmable Logic Controllers (PLCs) for the Central Interlock System (CIS).

You will also participate in the integration of the different plant systems which make up the Interlock Control System (ICS), by implementing interfaces between the CIS and the plant Instrumentation & Control (I&C) systems involved in investment protection functions.

Background:

The Investment Protection System is designed to prevent damage to the ITER Tokamak and support systems due to off normal conditions and/or failures. The Central Interlock System (CIS) is designed to marshal interlocks between the various Plant Systems where inter-system communication is required. Local Plant Interlock systems (PIS) are being developed by the

various Domestic Agencies and suppliers, and once they arrive at the ITER site these systems will be integrated with the CIS, which together will form the Interlock Control System (ICS) in charge of overall investment protection for the I&C system of the ITER facility.

Key Duties, Scope, and Level of Accountability

- Solves complex issues related to Siemens safety PLCs and their associated interfaces to Plant Interlock Systems, CIS and SCADA, based on Siemens WinCC Open Architecture (WinCC- OA);
- Participates in the testing and validation of local and central interlock functions on site to support the integration of Siemens PLCs with the CIS;
- Follows up and verifies the installation and commissioning of the CIS, in accordance to requirements and procedures;
- Manages and participates in the site acceptance tests and commissioning of the Interlock Control System;
- Performs the hardware and functional acceptance tests of the CIS by preparing the procedures, performing the tests and ensuring tests reports are fully documented;
- Solves technical issues related to PLCs and SCADA, performs the relevant verification tests and prepares all the related documentation in order to ensure the proper traceability of modifications;
- Resolves interface issues for the Plant Interlock System's sensors and actuators;
- 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, week-ends and public holidays.

Measure of Effectiveness

- Conducts the preparation of the site acceptance testing and commissioning of the CIS ensuring full compliance to the system requirements, and relevant codes/standards;
- Troubleshoots and provides suitable solutions to issues related Siemens safety PLCs and the associated interfaces to Plant Interlock Systems, CIS and SCADA in a timely manner;
- Maintains effective communication and excellent relations other PLC developers, interfacing teams within ITER and external contractors;
- Ensures the validation, installation and commissioning of the ICS are well prepared and in line with relevant deadlines;
- Generates and maintains coherent, comprehensive and understandable documentation and reports;
- Works in close collaboration with IO-Domestic Agencies and sub-contractors to ensure compliance with the interlock related documentation and requirements identified in the Plant Control Design Handbook (PCDH) and proposes solutions to enable this.

Experience & Profile

- **Professional Experience:**
 - Minimum 8 years' experience in the development of Siemens safety Programmable Logic Controllers or equivalent, preferably implementing investment protection I&C functions in a scientific or industrial environment.
- **Education:**
 - Master degree or equivalent in computer science, automation 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:**
 - **Specialized Domains of Work:** Siemens safety PLC (PLC software development and troubleshooting using Siemens Step-7, TIA Portal and Siemens safety libraries development tools is required);
 - **Interface Management:** Identify, resolve and maintain technical and functional interfaces;
 - **Performing acceptance tests,** writing test procedures and reports related to PLCs and control systems involved in investment protection I&C functions;
 - Commissioning of high integrity I&C systems in large facilities; knowledge of functional safety standards (e.g.: IEC 61511, IEC 61508, ...) is considered an asset;
 - Development and configuration of industrial SCADA is required, practical experience in Siemens WinCC-OA is considered as an advantage;
 - Various sensors and actuators used in harsh environments, including their interfaces with control logic devices.
- **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.