Job Title: Systems Engineer CIO-021&204

Req ID **849** - Posted **26/10/2019** - (France, 13067 St Paul Lez Duranc) - **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 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.

Application deadline: 08/12/2019
Domain: Engineering
Department: Central Integration Office
Division: Not Applicable
Section: Integrated Engineering Analyses
Job Family: Project Engineering
Job Role: Engineer - 1
Job Grade: P2
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

Two openings

As Systems Engineer, you will be responsible for the model-based functional integration of Tokamak and Plant Systems, focusing on cryogenic and cooling water loops. Your focus will include accountability for specific Integrated System Functional Analyses and the Transverse Systems Functional Design Integration Reviews. Additionally, this role plans and implements the integrated verification and validation of project requirements and operational scenarios, through model-based approaches.

Background

The Integrated Engineering Analysis Section (IEAS) is a multidisciplinary team of engineers with expertise in structural, seismic, electromagnetic, CFD and systems analyses, as well as materials and codes and standards. Among other tasks, IEAS:

- Coordinates and perform multi-system analyses to define loads and verify that project requirements are properly met.
- Performs engineering analyses to support the licensing application, and design verification of SSCs based on project priorities.
- Oversees the verification and validation of safety and technical requirements within the systems.

Major Duties/Roles & Responsibilities

- Develops and validates models for dynamic simulation of system behavior;

- Charged with preparation and/or review of specific deliverables on systems behavior for verification and validation (commissioning) purposes;
- Commissioning preparation by validating the control logic of systems through model based approach;
- Implements the plan for functional integration of Integrated Systems and Transversal Functions;
- Oversees integrated verification and validation of systems, maintaining alignment with the baseline configuration. This includes Systems Requirements Documents, Interfaces Documents, Data Sheets and Engineering Diagrams;
- Manages contracts as needed;
- Implements the integrated technical, quality and safety requirements, advises on, and/or tracks, corrective actions;
- Develops and provides models for real-time system behavior simulators used for training operators;
- 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, weekends and public holidays.

Measures of Effectiveness

- Produces reporting on ITER System functional integration, and implementation of the model for integrated verification and validation within the defined quality, cost and schedule;
- Maintains alignment of the model with the baseline configuration, and fixes/solves any issues;
- Prepares effectively the functional test of the Integrated Systems based on the Overall Project Schedule and reports timely and acurately;
- Delivers quality work product on time.

Experience & Profile

- *Professional Experience:*
  - At least 5 years' experience in the analysis, manufacturing, installation and testing of large plant systems, preferably in an international environment.
- *Education:*
  - Master's degree or equivalent in mechanical, nuclear, chemical, engineering or other relevant field.
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- *Technical competencies & demonstrated experience in:*
  - Systems engineering and design control: design planning, input, development, change control, verification, validation, and interface control;
  - Fluid systems, and their instrumentation and control.
  - Modelling of complex systems for dynamic simulations to assess system behaviors;
  - Review of documentation, including design justification, functional analysis, procurement, construction and commissioning documentation;
  - Use of nuclear design codes and standards;
  - Performing factory and/or site acceptance tests and commissioning of large plant systems.
  - Engineering, construction and commissioning of nuclear / fusion facilities, specific to nuclear safety and quality standards;
  - Using proficiently model-based verification software (e.g. *Flowmaster*, *Dymola*, *EcosimPro, RELAP, CATHARE, gPROMS, ASPEN, Flownext, Custom Modeler,* etc.);
  - Using DOORS and PLM is considered as an advantage.

- *Language requirements:*
  - Fluent in English (written and spoken).
- *Behavioral Competencies:*
  - Collaborate: Ability to 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/solutions;
  - 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 lline management and that may jeopardize the achievement of the Project's objectives.