Job Title: Process Engineer (Nuclear or Qualification) IO0695&1019

Requisition ID **4180** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Construction and Installation** - **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: 01/08/2021
Domain: Construction
Department: Plant Construction
Division: Mechanical Implementation
Job Family: Project Engineering
Job Role: Engineer - 2
Job Grade: P3
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

Two openings*: The offered grade for these openings is P3; however, the appointment to a position may be made at P2 if the qualifications and professional experience of the selected applicant correspond to that grade; in this case, the duties and responsibilities assigned to the position are adjusted accordingly.*

For these two vacancies of Process Engineer, one position will focus on Nuclear and the second on Qualification aspects.
As a Process Engineer, you will perform life cycle planning for the process of the Vacuum Vessel Pressure Suppression System (VVPSS) steam condensation as well as Hydrogen Mitigation System (HMS). You will manage/co-ordinate all activities related to the process including contracts as required to perform and complete the process for developing the final design, as well as ensuring the same in the implementation.
Additionally, you will contribute to all the technical, engineering, qualification, process and safety activities within the VVPSS team and ensure operability of the VVPSS and HMS, based on design development, as well as qualifications (i.e. design, testing, installation, quality assurance, quality control, change request management, risk management as well as commissioning etc.).

Background

The VVPSS is a Hard Core process oriented safety system that protects the Vacuum Vessel of the ITER Tokamak from overpressure and maintains dynamic confinement of radiation in the event of a significant leak from the Vacuum Vessel. VVPSS & HMS will cover the following aspects:

- Provides a steam condensation capacity for loss of coolant accidents;
- Maintains a pressure cascade into the VV in the event of loss of vacuum accidents;
- Protects the Detritiation System from hydrogen explosion;
- Provides a barrier against the release of tritium, ACPs and beryllium into the environment.

These two positions are assigned to the VVPSS Group.

Major Duties/Roles & Responsibilities

- Performs process engineering design and analysis including safety analysis/HAZOP, and produces calculation reports for developing the final design of VVPSS, and in particular the HMS according to the baseline schedule;
- Performs life cycle planning of the VVPSS and HMS process starting from the preliminary design already developed;
- Develops the Process and Instrument Diagrams (P&ID), control schemes, commissioning specifications and the operation baseline, maintenance plans and decommissioning strategy along with supportive documents based on the preliminary design;
- Performs functional analysis, optimizes the system requirements and proposes proper design solutions that suits to the integrated process of VVPSS and HMS considering safety, risk, costs and other constraints;
- Performs the Rupture Disc and Bleed Valve development program of the VVPSS system;
- Performs and follows up on the Pool Scrubber Tank experimental program (PST-X);
- Performs and follows up on the hydrogen recombination qualification program, namely the Wet Recombiner, Passive Autocatalytic Re-combiner (PAR), Igniters and Flame Arrestors qualification programs;
- Define qualification testing matrices, prepare Process Flow Diagrams (PFD), Piping and Instrument Diagrams (P&ID) for all the qualification programs on time and as required;
- Write technical specifications (as necessary) for the test facilities (as required, based on the first qualification test results) along with procurement of the additional equipment required;
- Manages specific design development for the gas scrubbing system, air handling fans and process blowers;
- Manages functional and physical interfaces, ensuring systems consistency and process efficiency with the goal of harmonized and practical operation;
- Ensures that the process analysis, qualification, , interfaces, procurements, engineering work packages and construction in line with the mechanical design and analysis as well as safety files are prepared as per the baseline schedule;
- Ensures that the qualification programs are well established in order to fulfil the design development on time;
- Defends the design basis for the process in the final design review and ensures its final approval as appropriate;
- Develops and/or reviews documents related to the aforementioned activities, ensures on time approval, and maintains records;
- Collaborates with Safety Division and Quality teams to prepare requested safety files for the regulators;
- May be requested to support project change requests (PCR) (both ongoing or foreseen), and monitors their implementation;
- Supports the Group Leader for the procurement and contract management of the VVPSS and HMS, in close collaboration with the Procurement & Contract Division at ITER;
- Participates in the vendor selections, awarding and management of contracts related to VVPSS and HMS;
- 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.

Note: 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.

Measure of Effectiveness

- Develops and implements an efficient and effective life cycle planning in terms of process and safety analysis for VVPSS and HMS;
- Ensures full completion of the qualification process, in addition to ensuring the consistency with the mechanical design development inclusive of all analysis as well as completed documentation;
- Develops the Engineering Work Packages as required for construction in a timely manner from the process perspective;
- Anticipates or proposes solutions to minimize disruption to the schedule;
- Ensures that analyses related to VVPSS & HCM process are produced on time to support efficiently procurement/contract management and that materials are available on time for construction and prepared for operation;
- Provides documents and reports to a high quality and standard, that are customized to the audience and are in line with the relevant deadlines;
- Manages efficiently interfaces and maintains effective communication and excellent relations with interfacing teams within ITER and with external contractors.

Experience & Profile

- ***Professional Experience:***
  - At least 8 years of process engineering experience (to deliver system(s) and manage its process lifecycle in the field of nuclear power plants, other nuclear industry, oil & gas, pharmaceutical or chemical industry (at least 5 years of similar experience for P2 level).
- ***Education:***
  - Master's degree or equivalent in the field of Nuclear Engineering (process), Chemical Engineering 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 and technical expertise (nuclear engineering):**
    - Complex systems involving steam condensation, qualifications, scrubbing efficiency measurement, passive autocatalytic reactor (PAR) etc., and test facility within nuclear or highly regulated/hazardous environment;
    - Safety and quality requirements and codes and standards performing Quality Assurance and Quality Control actions.
- **Process Management within an engineering context, including procurement and contracts:**
    - International procurement and tendering for engineering contracts, including safety, quality, scope, schedule and cost is required;
    - Technical knowledge within a large complex project in terms of process and process equipment procurement;
    - Coordinating and supervising of activities related to the process development;
    - Demonstrated ability to deliver quality results within tight timescales.
- **Design (create technical designs based on project requirements):**
    - System design development inclusive of process as well as analysis in a highly hazard industry (nuclear, pharmaceutical or Chemical);
    - Test facility and equipment required for qualification will be added advantage;
    - Experience on process analysis tools, such as AFT Arrow and CFD is preferable
    - Aptitude to work with multi-CAD system (AVEVA E3D / AVEVA DESIGN /CATIA / ENNOVIA).
- **Problem Solving (assess problems, identify root causes and reach practical solutions in a consistent way to reach project objectives).**
- ***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.