

# IO2064 Process Engineer TCWS-037

## General information

|              |  |
|--------------|--|
| Job category | Standard   |
| Status       | Confirmed  |
| Department   | PED / Plant Engineering Department                       |
| Division     | PED / Tokamak Cooling Water System Division              |
| Section      | PED / TCWS / Tokamak Cooling Water System Design Section |

## Job description

|                                |   |
|--------------------------------|---|
| Main job                       | Engineering - Nuclear Power   |
| Title of the position          | Process Engineer TCWS-037   |
| Job family                     | Engineer - 1  |
| Grade                          | P2  |
| Direct employment              | Not required  |
| Purpose                        | <p>To develop the process engineering and the control logic of the Primary Heat Transfer Systems (PHTS's) of ITER's Tokamak Cooling Water Systems (TCWS) and ancillary systems;<br/>To develop Process Flow Diagrams and Process &amp; Instrumentation Diagrams for the TCWS;<br/>To select the preliminary sizes and prepare data sheets for TCWS equipment;<br/>To prepare Technical Specifications needed for the procurement, fabrication and testing of the TCWS piping and equipment.</p>   |
| Main duties / Responsibilities | <p>Develops and finalizes the process engineering of TCWS namely for the PHTSs, the chemical and volume control systems, the draining and refilling system and drying system;<br/>Interfaces with the US-Domestic Agency (DA) and US Department of Energy officials on process engineering matters, including writing reports and making presentations on work progress;</p> <p>Develops and finalizes Process Flow &amp; Instrumentation Diagrams for the whole TCWS, in collaboration with Safety Department;<br/>Develops and finalizes the functional analysis, control logic design studies and operational guidelines for all the TCWS;<br/>Produces valid documentation for the commissioning of the TCWS ( for technical specifications and procedures);<br/>Performs specific sizing calculations for TCWS equipment (e.g. valves, pumps, heat exchangers, filters, demineralizers, etc.), selects equipment and produces data sheets;<br/>Finalizes equipment procurement specifications in collaboration with Safety Department and other relevant Departments and follows up on their manufacturing, Factory Acceptance Tests and delivery to the ITER Organization (IO) site;<br/>Develops and finalizes commissioning procedures, implementing the necessary features into the design;</p> <p>Collaborates with the Instrumentation &amp; Control Engineers to develop the control logic design studies and their integration in the TCWS system;<br/>Supports the TCWS Design Section in the design, procurement, assembly and/or installation and operation of the TCWS piping and components in close collaboration with the US DAs and other ITER IO Departments;<br/>May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays;<br/>Implements the surveillance and/ or technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;<br/>May be requested to be part of any of the project/construction teams and to perform assigned duties;<br/>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.</p> <p>Reports to the TCWS Design Section Leader;<br/>Acts as an interface with other internal and external resources for the TCWS system;<br/>In response to requests from the Director-General (DG) and/or Plant Engineering Department (PED) Head, or proactively, informs the DG/ PED Head of any important and urgent issues that</p> |

|                           |  |
|---------------------------|--|
| Measures of effectiveness | cannot be handled by the concerned line management and may jeopardize the achievement of the Project's objectives.   |
|                           | Ensures the satisfaction of safety and functional thermal hydraulic requirements flow down;<br>Develops & finalizes P&IDs and equipment selection/sizing in a timely manner within the defined costs;<br>Develops effectively accurate operating guidelines in a timely manner;<br>Produces detailed data sheets for the procurement of the TCWS equipment on time;<br>Reviews efficiently the preparation of the technical specifications for the TCWS equipment procurement within the defined schedule. |

## Applicant criteria

|                                |  |
|--------------------------------|--|
| Level of study                 | Master or equivalent degree  |
| Diploma                        | Mechanical, Civil, or Nuclear Engineering  |
| Level of experience            | At least 5 years   |
| Technical experience/knowledge | At least 5 years' experience in the System Engineering of complex projects, in nuclear or hazardous environment;<br>Good experience on process design (e. g. sizing of cooling systems), Process & Instrumentation Diagrams development, equipment selection and sizing;<br>Basic experience in Thermal-Hydraulic and Thermal-Mechanics Engineering of complex systems;<br>Basic experience in the Control Processes of Cooling Systems for nuclear or oil and gas facilities;<br>Basic Project Management experience is required. |
|                                | The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.   |
| General skills                 | Ability to dialogue with a wide variety of contributors and stakeholders;<br>Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;<br>Ability to persist in the face of challenges to meet deadlines with high standards;<br>Ability to gather multiple and diverse sources of information to define problems accurately before moving to proposals;<br>Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.            |
| Languages                      | English (Fluent)   |
| Specific skills                | Ansys, Computer Aided Design   |
| Others                         | Knowledge of MS Office standard (Word, Excel, PowerPoint, Outlook) is required;<br>Knowledge of 2D-3D CAD software is required;<br>Knowledge of specific software for sizing equipment (e.g. HTRI, ASPEN, HONEYWELL etc.) is an advantage;   |
|                                | Knowledge of specific software for Thermal-Hydraulic circuits calculations (e.g. Fathom) is an advantage;<br>Knowledge of specific software for Thermal-Hydraulic and Thermal-Mechanics calculations (e.g. ANSYS) is an advantage.   |