

IO1434 Thermal Hydraulic System Engineer TCWS-007+024

General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Plant System Engineering
Division	PSE/Plant Engineering Division
Section	PSE/ PED/ Cooling Water System Section

Job description

Main job	Engineering - Nuclear Power
Title of the position	Thermal Hydraulic System Engineer TCWS-007+024
Job family	Engineer - EC
Grade	P1
Direct employment	Not required
Purpose	<p>This post includes a total of 2 vacancies: TCWS-007 + TCWS-024.</p> <p>To perform the thermal hydraulic design and/or analyses of the Primary Heat Transfer Systems (PHTSs) of ITER Tokamak Cooling Water Systems (TCWS), for his/her scope of responsibility; To support the Cooling Water System (CWS) Section for the preparation of the Safety Report for the TCWS.</p> <p>To contribute to the preparation of the Technical Specification for the procurement, the fabrication and testing of the TCWS equipment.</p> <p>Background information: These PHTSs are designed to remove approximately 1,000 MW of heat from the Vacuum Vessel and the In-Vessel Plasma facing components. The relevant hydraulic circuits have a very complex piping distribution that imposes a detailed design of the flow balance of the parallel cooling lines as well as the inlet pressure to the In-Vessel components.</p> <p>TCWS-007 Vacancy: Participates in the steady state thermal hydraulic design of the PHTSs of ITER TCWS by using Fathom software; Provides solutions to balance the parallel flows of cooling lines for all the clients of the PHTSs by using Fathom software; Participates in the preparation of the datasheet for the selection of the valves, orifices, pumps & other components for the PHTSs; Provides solutions for the pressure & flow control for Plant Control Systems by using valves, by-pass & pumps by Variable Frequency Drives;</p> <p>TCWS-024 Vacancy: Performs thermal-hydraulic analyses to assess the operational transients of the PHTSs by using RELAP software; Performs thermal-hydraulic analyses to assess the incidental & accidental scenarios (LOCA, LOFA, LOSP, etc.) of the PHTSs by using RELAP software; Collaborates with the Nuclear Safety, Licensing & Environmental Protection Division and the other System Engineers in the CWS Section to assess the incidental & accidental scenarios, the possible consequences & the impact on the TCWS design & for the preparation of the relevant Safety Report; Participates in the systems design, of TCWS ensuring a proper implementation of the prescriptions of the French Nuclear Regulator - Autorité de Sûreté Nucléaire (ASN) and also following the indications of the concerned Agreed Notified Body (ANB);</p>
Main duties / Responsibilities	<p>Both Vacancies: Supports the CWS Section for the design, procurement, assembly and/or installation & operation of the TCWS piping & components in close collaboration with Domestic Agencies and other ITER IO Directorates; Performs other duties in support of the project schedule as described in the Detailed Work Schedule & the Strategic Management Plan;</p>

Measures of effectiveness	Performs other duties linked to the above purpose upon management request, as necessary; Maintains a strong commitment to the implementation & perpetuation of the ITER Safety Program, values & ethics.
	Reports to the Cooling Water System Section Leader; Acts as an interface with other internal and external resources for the thermal hydraulic design & analyses of the PHTS's; In response to requests from the Director-General and/or Plant System Engineering (PSE) Directorate Director, or proactively, informs the DG/ PSE Directorate Director of any important & urgent issues that cannot be handled by the concerned line management & may jeopardize the achievement of the Project's objectives.
	Manages the thermal hydraulic design/analyses of the PHTSs in a timely manner; Ensures satisfaction of safety and functional thermal hydraulic requirements flow down; Manages the thermal-hydraulic transient analyses of the TCWS in a timely manner;
	Performs the safety analyses of the TCWS in a timely manner; Produces reports on time and with a high quality standard.
Project Construction Phase	

Applicant criteria

Level of study	Master or equivalent degree
Diploma	Nuclear Engineering or equivalent.
Level of experience	At least 2 years
Technical experience	At least 2 years' experience in the System Engineering of complex nuclear projects; Basic experience in the Thermal Hydraulic Engineering of complex systems and projects; Basic experience in sizing calculations for Cooling circuits' equipment; Basic experience in the Control Processes of Cooling Systems for Nuclear Power Plants or nuclear facilities.
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
General skills	Basic Project Management experience is required.
Languages	English (Working)
Specific skills	Computer Aided Design, MS Office standard (Word, Excel, PowerPoint, Outlook)
Others	Knowledge required: - 2D-3D CAD software (e.g. CATIA, SSD etc.); - Specific software for Thermal-Hydraulic circuits calculations (e.g. Fathom and RELAP); - Specific software for Thermal-Hydraulic FEM calculations (e.g. ANSYS) or CFD is an advantage; - MELCORE software is an advantage.