

IO1434 Thermal Hydraulic System Engineer TCWS-007+024

General information

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| 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

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| 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> |

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| 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

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| 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. |