

# IO1360 Vacuum Process and Instrumentation Eng. CEP-132

## General information

Job category	Standard
Status	Confirmed
Department	DIP/Directorate for Central Engineering & Plant
Division	CEP / Fuel Cycle Engineering Division
Section	CEP / FCE / Vacuum Section

## Job description

Main job	Engineering - Vacuum technologies
Title of the position	Vacuum Process and Instrumentation Eng. CEP-132
Job family	Engineer - 1
Grade	G6
Direct employment	Required
Purpose	<p>To design and to implement vacuum and cryogenic Instrumentation and Control (I&amp;C) systems which are under the responsibility of the ITER Vacuum Section.</p> <p>To generate process logic definition and documentation for ITER vacuum systems, i.e development of corresponding I&amp;C architecture, and planning and preparing for correct integration in the ITER plant facility and providing specialist support in this field for relevant procurement packages.</p> <p>The key facts and figures of the Vacuum Systems are:</p> <p>ITER will be the largest and most complex vacuum system yet to be built. Large system volumes such as the Cryostat (8500 m3), the Vacuum Vessel (1400 m3) or the Neutral Beam injectors (860 m3) need to be evacuated and kept under high vacuum conditions;</p> <p>Custom made cryo pumps are employed to allow high speed pumping in a harsh environment (radiation, magnetic fields);</p> <p>A wide-ranging Service Vacuum System provides evacuation of volumes containing different gases including tritium;</p> <p>Leak detection and leak localization is challenging due to complexity and size of Tokamak installations.</p>
Main duties / Responsibilities	<p>Participates in the design and integration of ITER vacuum systems (vacuum vessel, cryostat, neutral beams and auxiliary vacuum systems) having responsibilities for design of vacuum I&amp;C systems throughout their project lifecycle from concept design through to installation and integrated commissioning;</p> <p>Defines process control logic and documentation for various ITER vacuum systems;</p> <p>Designs control systems necessary for the successful operation of the ITER vacuum system, including sensors and actuators control interfaces;</p> <p>Plans and prepares I&amp;C integration in the ITER plant facilities and systems, (including control system interfaces and layout of control/electrical cubicles);</p> <p>Participates in the design and implementation of interlocks necessary for ITER safe operation to international standards;</p> <p>Provides follow up of vacuum instrumentation procurements with the ITER Domestic Agencies;</p> <p>Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics;</p> <p>Ensures the implementation of Quality Assurance procedures for design , manufacturing, testing and commissioning and Quality Control implementation during the whole process of the supply completion, from the design up to the commissioning moving through procurement and fabrication / assembly;</p> <p>Updates when required the Project Schedule associated with the fabrication, installation, testing and commissioning related to I&amp;C and electrical engineering;</p> <p>Performs other duties in support of the project schedule as described in the Detailed Work Schedule or Strategic Management Plan;</p> <p>Performs other duties linked to the above purpose upon management request, as necessary;</p> <p>Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</p> <p>Reports to the Vacuum Section Leader;</p>

	<p>Acts as a Vacuum interface to all technical divisions, supports integration with ITERs higher level control team (CODAC), ITERs assembly and integration team, and ITERs electrical and cabling team;</p> <p>In response to requests from the Director-General and/or Director of Central Engineering &amp; Plant (CEP) Directorate, or proactively, informs the DG/ Director of CEP Directorate of any important and urgent issues that cannot be handled by the concerned line management and may jeopardize the achievement of the Project's objectives.</p>
Measures of effectiveness	<p>Successfully contributes to the Vacuum Control and Instrumentation design, including definition of safety sensors and interlocks;</p> <p>Interfaces successfully and communicates efficiently with other ITER Directorates, Domestic Agencies, maintaining good relationships;</p> <p>Successfully provides design, engineering and construction support for the project;</p> <p>Contributes effectively to successful value engineered and validated I&amp;C design of vacuum systems;</p> <p>Achieves and contributes to the achievement of the project schedules and milestones.</p> <p>SAP Id: 50000233</p> <p>Project Construction Phase</p>

## Applicant criteria

Level of study	Bachelor or higher degree
Diploma	Electronic or process engineering
Level of experience	At least 7 years
Technical experience	<p>At least 7 years of experience in engineering experience in industry or on large construction projects;</p> <p>At least 2 years of experience in vacuum instrumentation and controls; preferably linked to large systems for fusion or other high energy physics applications;</p> <p>Experience of industrial control and instrumentation equipment including PLCs, Field bus;</p> <p>Experience working to International Standards and safety in installation;</p> <p>Experience in complex process plant controls;</p> <p>Preferably experience in high vacuum measurement techniques and/or cryogenic instrumentation;</p> <p>Knowledge of Analogue and digital electronics;</p> <p>Experience of engineering in nuclear environment and of the susceptibility of electronics to ionizing radiation would be an advantage.</p>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
Languages	English (Working)
Specific skills	Computer Aided Design, MS Office standard (Word, Excel, PowerPoint, Outlook)