

# IO1226 Vacuum Mechanical Engineer CEP-131

## General information

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

## Job description

Main job	Engineering - Mechanics
Title of the position	Vacuum Mechanical Engineer CEP-131
Job family	Engineer - 2
Grade	P3
Direct employment	Not required
Purpose	<p>To complete the mechanical design of vacuum system components. To perform analysis and manage validation programs to ensure code, safety, and performance requirements are satisfied for vacuum equipment. To follow the procurement of vacuum systems and prepare for system and integrated commissioning. To ensure the machine is built to ITER standards and to the ITER schedule.</p> <p>The key facts and figures of the Vacuum Systems are:</p> <ul style="list-style-type: none"><li>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;</li><li>Custom made cryo pumps are employed to allow high speed pumping in a harsh environment (radiation, magnetic fields);</li><li>A wide-ranging Service Vacuum System provides evacuation of volumes containing different gases including tritium;</li><li>Leak detection and leak localization is challenging due to complexity and size of Tokamak installations.</li></ul> <p>Initiates and participates in the design and integration of ITER vacuum pumping and leak detection systems having specific mechanical design responsibility from concept design to installation and integrated commissioning;</p> <p>Performs assessment and optimisation of detailed design and build to print system designs for manufacturability and development of fabrication techniques for vacuum pumps components;</p> <p>Performs design analysis to ensure code requirements are satisfied for a range of vacuum components;</p> <p>Liaises with fabricators and DAs to ensure prototype vacuum components are manufactured meeting vacuum and code standards to schedule;</p> <p>Writes component procurement and development specifications;</p> <p>Follows up of weld design and qualification for vacuum components;</p> <p>Coordinates the document acceptance and approval required in the manufacturing of vacuum components;</p> <p>Coordinates the acceptance pressure and leak tests in the manufacturing processes;</p> <p>Prepares and performs commissioning of ITER's vacuum mechanical components;</p> <p>Provides follow up of vacuum procurements with the ITER Domestic Agencies;</p> <p>Provides effective leadership for support teams of vacuum technicians and leak test personnel during vacuum related machine assembly as required;</p> <p>Performs other duties in support of the project schedule as described in the Detailed Work Schedule and Strategic Management Plan, as, for example, responsible officer for a system;</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 Leader of the Vacuum Section;</p> <p>Interfaces with Iter Organization and Domestic Agencies Responsible Officers for systems with interfaces with Vacuum;</p>
Main duties / Responsibilities	

Measures of effectiveness	In response to requests from the Director-General and/or Director of Central Engineering & 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>Implements guidelines and directives received from Section Leader;</p> <p>Interfaces effectively with other ITER Directorates, Domestic Agencies and maintains good communications and relationships;</p> <p>Ensures value engineered and validated mechanical design of vacuum systems;</p> <p>Ensures lifecycle system compliance with codes, standards and safety requirements;</p> <p>Achieves and contributes to the achievement of the project schedules and milestones;</p> <p>Project Construction Phase.</p>

Applicant criteria

Level of study	At least Master's Degree or equivalent
Diploma	In mechanical engineering
Level of experience	At least 8 years
Technical experience	<p>Engineering experience in industry or on large construction projects;</p> <p>At least 3 years' experience in mechanical engineering related to vacuum preferably linked to large systems for fusion or other high energy physics applications;</p> <p>Experience of working with codes, pressure equipment directives and standards;</p> <p>Experience of cryogenics;</p> <p>Good knowledge of weld design and techniques;</p> <p>Experience of designing in a nuclear environment;</p> <p>Ability to perform stress and thermal analysis.</p>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
General skills	<p>Experience managing procurements, projects and scheduling;</p> <p>Ability to supervise small teams of fitters and technicians.</p>
Languages	English (Working)
Specific skills	Computer Aided Design, MS Office standard (Word, Excel, PowerPoint, Outlook)