

# IO1956 Mechanical Engineer PED-225

## General information

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|--------------|---|
| Job category | Standard  |
| Status       | Published   |
| Department   | PED / Plant Engineering Department                      |
| Division     | PED / Cooling Systems Engineering Division              |
| Section      | PED / CSED / VVPSS Systems & Auxiliary Function Section |

## Job description

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| Main job                       | Engineering - Mechanics  |
| Title of the position          | Mechanical Engineer PED-225  |
| Job family                     | Engineer - 2   |
| Grade                          | P3   |
| Direct employment              | Not required   |
| Purpose                        | <p>To look after all Vacuum Vessel Pressure Suppression System (VVPSS) interfaces, to ensure functionality of all interfaces with other ITER components and building, including penetrations and supports.</p> <p>To develop the process design finalization, functional analysis, assuring proper propagation in PR &amp; SRD for the whole VVPS System in the configuration supported by then licensing design process.</p> <p>To finalize the VVPS system design assuring acceptable steam condensation efficiency at sub-atmospheric conditions, based on the results obtained during experimental complain with the system prototypes.</p> <p>To support properly the space management and Maintenance through remote handling equipment associated to the mechanical components of the VVPS System, including Hydrogen Mitigation System (HMS), testing and commissioning.</p> <p>To contribute to the procurement and the prefabrication-installation of the VVPSS system in the framework of the centralized piping procurement and participate to the preassembly and pretesting of the piping system.</p>  |
| Main duties / Responsibilities | <ul style="list-style-type: none"><li>-Completes the design of the VVPSS system and its components and interfaces with other ITER systems;</li><li>-Is responsible for follow-up of the fabrication, assembly and commissioning of the VVPSS;</li><li>-Reviews the manufacturing design, construction and assembly documentation of the VVPSS, including materials, factory manufacturing, vacuum leak testing and final integrated leak testing of the VVPSS.</li><li>-Provides support in the licensing activities for safety design and assessment of the safety related functions, including technical requirements such as codes and standards.</li><li>-Is responsible for the consistency of the VVPSS construction planning in relation to the ITER construction, commissioning and operation plan.</li><li>-Supports in space management and layout static and dynamic stress analysis and associated stress reports of the VVPSS vessels and piping systems and associated supports;</li><li>-Supports in space management and layout static and dynamic stress analysis for equipment supports and of centralized steel frames;</li><li>-Supports in space management and layout structural analysis of flexible joints as piping on line components, selection of the required stiffness for flexible joint and issue of procurement technical specification for flexible joints;</li><li>-Participates to the design and conformity assessment of the equipment in charge to different systems according to the French regulations (ESP/ESPN) and following required design codes and standards as per Licensing Design Basis;</li><li>-Contributes to the VVPSS vessels and piping systems design comprehensive of supports and steel frames, fabrication and modularization according to the prescriptions of the French Nuclear Regulator - Autorité de Sûreté Nucléaire (ASN) and also following the indications of the concerned Agreed Notified Body (ANB);</li><li>-Supports generation of all the required documentation in completing the stress report as</li></ul> |

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| Measures of effectiveness | <p>isometric drawings with supports location, supports detailed drawings, technical specifications for procurement dynamic shock absorbers, constant and variable springs, steel frames supports, gapped supports;</p> <p>-May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays;</p> <p>-May be requested to be part of any of the project/construction teams and to perform other duties in support of the project schedule;</p> <p>-Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</p>   |
|                           | <p>-Reports to the VVPS Systems &amp; Auxiliary Functions Section Leader;</p> <p>-Acts as an interface with other internal and external resources for the design of the piping systems and associated supports, flexible joints and steel frames;</p> <p>-In response to requests from the Director-General and/or Plant Engineering Department (PED) Head, or proactively, informs the DG/ PED Head of any important and urgent issues to be properly managed not to jeopardize the achievement of the Project's objectives.</p> <p>-Process and thermal hydraulic design &amp; Functional analysis finalization within the defined cost and schedule; Issue accurate and high quality technical procurement specifications;</p> <p>-Produce reports on time and with a high quality standard;</p> <p>-Support efficiently design and manufacturing activities;</p> <p>-Assure satisfaction of safety and functional requirements flow down.</p> <p>Project Construction Phase<br/>SAP Id: 50001172</p> |

## Applicant criteria

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|--------------------------------|---|
| Level of study                 | Master or higher degree   |
| Diploma                        | Mechanical or Nuclear Engineering   |
| Level of experience            | At least 8 years  |
| Technical experience/knowledge | <p>-Extensive experience in similar jobs (involving similar work responsibilities) and/or additional training certificates in relevant domains may be considered a reasonable substitute for the required educational degree;</p> <p>-Good knowledge of large vessel, piping system and support design;</p> <p>-Excellent knowledge of structural design codes AISC, Eurocode, ASME and RCCM.</p> |
| Social skills                  | <p>Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit</p> <p>-At least 8 years' experience in nuclear or mechanical engineering;</p> <p>-Good experience in the seismic design of piping systems /supports and steel structures for Nuclear Facilities;</p>   |
| General skills                 | <p>-Good Experience in selection of constant / variable springs and dynamic shock absorbers;</p> <p>-Good Experience in design and procurement of flexible joints;</p> <p>-Basic experience in the System Engineering of complex Nuclear projects;</p> <p>-Knowledge of the EU PED or French ESP/ESPN regulations and practical application will be considered advantageous.</p>                  |
| Languages                      | English (Fluent)  |
| Specific skills                | <p>Ansys, CATIA, MS Office standard (Word, Excel, PowerPoint, Outlook)</p> <p>-Knowledge of structural analysis software is appreciated.</p>  |
| Others                         | <p>-Good knowledge of FEM analysis software (ANSYS) is appreciated.</p> <p>-Good knowledge of 2D-3D CAD software (AVEVA PDMS and Catia) is appreciated.</p> <p>-Excellent knowledge of MS Office standard (Word, Excel, PowerPoint, and Outlook) is required.</p>   |

