

<b>TITLE: Vacuum Analytical Engineer</b>		<b>CEP-066</b>
<b>REPORTS TO LINE MANAGER:</b> Vacuum Section Leader, Fuel Cycle Engineering division, Department of Central Engineering and Plant Support		
<b>DIRECT EMPLOYMENT:</b> NOT REQUIRED		<b>GRADE RANGE:</b> P3 -P4
<b>DATE WRITTEN:</b> December 2007	<b>DATE REVISED:</b> January 2008	<b>DATE REVISED:</b>

**Purpose:**

- To provide and manage the analysis necessary for the design, optimisation and integration the components under the direct responsibility of the ITER Vacuum Group. To provide similar analysis for the many complex interfaces which need to be assessed as part of the Procurement Packages of other groups.

**Major Duties/Responsibilities:**

- Management of the thermal, thermohydraulic and gas dynamics analysis necessary for the integration of ITER cryopumps and front-end distribution, and to analyse the performance of the forevacuum systems to confirm compatibility with the transient performance needed to meet the plasma mission;
- Design, layout and integration of torus, neutral injection and service vacuum connections and pipe work in accordance with the relevant codes and standards, to meet vacuum and tritium containment requirements;
- Analysis of the design and concepts of the Procurement Arrangements being produced by all sectors of the Project in order to ensure the soundness of vacuum practice and to ensure adequate definition of vacuum standards;
- Development of designs and standards for high integrity mechanical vacuum tritium containment components to be used in all sectors of the project;
- Participation in the definition of R&D and writing of procurement specifications for the procurement of mechanical vacuum pumps and compressors under the responsibility of the Vacuum Group;
- Development of the design of specific vacuum components for Remote Handling compatibility;
- Interfacing with the buildings and port cell responsible officers to ensure effective space envelopes for equipment;
- Assistance to the Participant Team and other IT groups, to contribute in achieving a high level of vacuum component standardisation.

**Qualifications Required:**

- University (or equivalent) degree in Mechanical Engineering or equivalent;
- At least 5 years experience, with at least 3 years in large engineering projects;
- Experience in gas dynamics and cryogenic modeling;
- Ability to perform stress and thermal analysis;
- Good knowledge of vacuum and cryogenics;
- Experience of working with pressure equipment directives and standards;
- Good knowledge of weld design and techniques;
- Experience of designing in a nuclear environment or working with hydrogen isotopes would be an advantage;
- Good communication skills in written and spoken English;
- Proven ability to work effectively in a team and in a multi-cultural environment.

**Work Management structure and Interfaces:**

- Reports to the Vacuum Section Leader.

**Authority/Approval Levels:**

- Has authority and approval levels defined by the Deputy Director General (DDG) for his/her scope of work.

**Measures of Effectiveness:**

- Successfully implements guidelines and instructions received from the Section Leader, DDG and the ITER top management;
- Successfully interfaces between ITER divisions and Domestic Agencies and maintains good communications;
- Successfully provides engineering and installation support for the project;
- Successfully completes the tasks assigned under “Main Duties / Responsibilities” above.