

Title: Vacuum Pumping Group Leader Central Engineering and Plant Support / Fuel Cycle Engineering		CEP 020
Reports to Line Manager: Director of Fuel Cycle Engineering Division		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE RANGE: P3 ~P5
Date Written:	Date Revised:	Date Revised:

Purpose:

To deliver the vacuum systems required for the safe, reliable and successful operation of ITER. To lead the ITER Vacuum Group. To manage the design and integration of the ITER vacuum pumping and related systems. To provide vacuum expertise necessary for the successful building of ITER. To define the vacuum and tritium boundary standards for all relevant procurement packages and ensure compliance of direct and ITER Participant Team's procurements.

Major Duties/Responsibilities:

The successful candidate shall have the necessary expertise and skills to take on the responsibilities listed below and build a team to which responsibilities can be delegated.

- To be responsible for design of components and systems within ITER vacuum Work Break Structure (WBS3.1) in accordance with relevant codes, standards and remote handling requirements, to achieve the project scope and to be compatible with the ITER Schedule.
- Launch of all research and development tasks necessary to qualify the integrity of the design or concepts, currently within the within ITER vacuum, Work Break Structure (WBS3.1).
- Ensure the standards of procurement specifications, procurement liaison/monitoring, acceptance testing, installation, commissioning (with and without plasma), operation and maintenance (including leak testing) of all vacuum aspects of all vacuum related equipment within ITER.
- Provide assistance to Participant Team and other IT groups, to aid with achieving vacuum and tritium compatibility requirements. Including advising on; surface finish, outgassing, sealing, double containment, mechanical integrity, material choice, leak testing and integration issues.
- Participate in the design review process of all ITER systems with a vacuum interface.
- Design, integration of all cryogenic interfaces between vacuum systems cryogenic pumps and traps and the cryogenic plant.
- Integration of all diagnostic and auxiliary vacuum systems to ensure the torus vacuum integrity and a high level of control over tritium containment and inventory.
- Design of all vacuum and cryogenic instrumentation and protection systems for all components and systems within WBS3.1 and integration with the CODAC system.
- Design and integration of torus overpressure and deflagration protections systems.
- Periodic review and updating of the ITER vacuum documentation suit including, the ITER Vacuum Handbook and ITER vacuum Baseline Documents.

- Participation in relevant internal and external meetings, working groups, and forums to ensure optimum vacuum solutions for ITER physics and technical requirements.
- To define the infrastructure necessary for on-site vacuum testing, pre-installation conditioning, commissioning and ongoing maintenance.
- Ensure necessary field inspection visits to achieve requisite vacuum and tritium compatibility of all in-vessel and boundary components.
- To provide all vacuum system inputs necessary to compose the Integrated Project Schedule and ensure that vacuum group activities are implemented in concert with it.

Qualifications Required:

- University degree in Engineering.
- At least 15 years experience in vacuum engineering relating to a larger complex tokamak.
- At least 5 years management experience leading a multi –disciplinary team.
- Extensive practical knowledge of vacuum science and technology and tritium, with publications in the field.
- Experience of working in industry as well as within a research establishment.
- Knowledge of ITER and in particular of the fuel cycle components.
- Extensive operating experience on a large tokamak or complex nuclear device.
- Specialist knowledge and experience of working with tritium.
- Experience with defining and ensuring vacuum standards with diverse supply.
- Good communication skills in written and spoken English.
- Proven ability to work effectively in a multi-cultural environment.

Work Direction and Interfaces:

Reports to the related division head and DDG.

Authority/Approval Levels:

Has authority and approval levels defined by the DDG for his/her scope of work.

Measures of Effectiveness:

- Successfully implements guidelines and direction received from the DDG and the ITER top management.
- Successfully manages interface between ITER divisions and Domestic Agencies.
- Successfully provides engineering and installation support for the project.
- Successfully develops, in agreement with the ITER general project schedule, cost effective installation and testing plans.
- Successfully maintains effective communications with all parties delivering subsystems.
- Successfully completes the tasks assigned under “Main Duties / Responsibilities” above