TITLE: Senior Scientific Officer, Plasma-Wall Interactions		FST 013
REPORTS TO LINE MANAGER: ADDG/ DDG for Fusion Science and Technology		
DIRECT EMPLOYMENT: Not Required	GRADE RANGE: P4-P5	
DATE WRITTEN: 13 MARCH 2006	DATE REVISED: 30 JULY 2007	DATE REVISED:

Purpose:

Supports the Ass.DDG/ DDG for Fusion Science and Technology through co-ordination of and contributions to the analysis of all aspects of plasma-wall interaction physics for ITER and by the definition of relevant physics requirements to meet the ITER operational and performance specifications. This involves close interaction with the ITER Parties in the specification, implementation and monitoring of relevant activities.

Major Duties/Responsibilities:

- Definition and management of experimental and modelling R&D activities relating to the study of plasma-wall interactions in ITER, with particular emphasis on investigations of mechanisms influencing material erosion and redeposition, dust generation, in-vessel tritium retention and the development of techniques for tritium removal.
- Definition and management of experimental and modelling R&D activities on ITER requirements for vessel conditioning for plasma operations, including techniques for the removal of tritium retained in-vessel.
- Integration of R&D results and analysis from the ITER Parties on plasma-wall interactions and the analysis of their implications for ITER plasma operation scenarios and the performance of first wall materials.
- Major contributions to the specification and analysis of ITER plasma operational scenarios, in particular through the definition of plasma edge conditions and their implications for power handling, impurity generation and transport, and the lifetime of first wall materials.
- Major contributions to the planning for ITER plasma commissioning and operation.
- Contributions to the definition of ITER requirements for an integrated plasma modelling capability through a leading role in the specification of plasma-wall interaction requirements.
- Integration of R&D results and analysis from the ITER Parties on plasma-wall interactions and the analysis of their implications for ITER plasma operation scenarios.
- Interaction with and co-ordination of experts in the ITER Parties in the definition, implementation and monitoring of activities in this area.
- Contributions to the preparation of documentation defining operational performance requirements for ITER plasma facing components, diagnostics, heating and current drive systems, and vessel conditioning systems, including techniques for removal of tritium retained in-vessel.

- Provision of support to the management of the FS&T Department in liaising with ITER construction activities.
- Supervision of ITER staff and visiting researchers contributing to activities in plasma-wall interactions and vessel conditioning.
- Shows strong commitment to the ITER safety programme and enforces it through individual behaviour and in his organisation.
- Maintains a strong commitment to the implementation and perpetuation of ITER values and ethics.

Qualifications Required:

- PhD in a relevant area, or demonstrated research experience to an acceptable level.
- Outstanding expertise in experimental fusion physics, with extensive experience in edge physics and plasma-wall interactions in fusion devices.
- At least 10 years experience in fusion research, with significant project management experience and proven technical leadership abilities.
- Extensive experience in managing international collaborations and demonstrated ability to represent an international organization such as ITER.
- Excellent written and verbal communication skills.

Work Direction and Interfaces:

- Reports to the Ass.DDG/DDG for Fusion Science and Technology.
- Supervises a small group of technical experts contributing to the analysis of ITER plasma-wall interactions and vessel conditioning, and to the development of relevant performance specifications and plasma scenarios.
- Interacts with project divisions responsible for the procurement of components and sub-systems in the areas of plasma facing components, vessel conditioning, diagnostics and heating and current drive systems, and supports R&D relevant to the definition of performance specifications.
- Liaises with experts in the international fusion community in the area of plasma-wall interactions and vessel conditioning.

Authority/Approval Levels:

Has authority and approval levels defined by the Ass.DDG/DDG for Fusion Science and Technology.

Measures of Effectiveness:

- Successfully implements R&D programme supporting the analysis of plasma-wall interactions, tritium retention, dust generation and vessel conditioning, leading to operational performance specification for related ITER systems and to the definition of ITER plasma operation scenarios.
- Successfully supports the planning for ITER operation.
- Successfully develops a team activity in these areas of ITER physics and maintains effective support for ITER construction activities in related areas.

- Successfully develops R&D activities within the international fusion community in this area in support of ITER construction and the preparations for operation.