

TITLE: Scientific Officer, Equilibrium and Control Fusion Science and Technology / Science		FST-018
REPORTS TO LINE MANAGER: Assistant Deputy Director General (ADDG) / Deputy Director-General (DDG) for Fusion Science and Technology (FS&T)		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE RANGE: P3-P4
DATE WRITTEN: May 2008	DATE REVISED:	DATE REVISED:

Purpose:

Supports the Assistant Deputy Director General/ Deputy Director General for Fusion Science and Technology through analysis of ITER requirements and performance in the areas of plasma equilibrium, plasma evolution and PF control. Contributes to the development of plasma scenarios, specification of plasma control requirements, analysis of PF control capability and of related aspects of ITER physics in order to support the achievement of the ITER operational and performance specifications. This involves close interaction with the ITER Members in the specification, implementation and monitoring of relevant activities.

Major Duties/Responsibilities:

- Explores the capabilities of the ITER device for supporting the range of plasma equilibria required to meet ITER's performance specifications using a range of computational tools available at ITER and within the Members' fusion communities.
- Develops PF control scenarios for ITER operation in support of ITER plasma scenario development and the specification of PF control requirements.
- Provides plasma equilibrium and scenario analysis in a form which allows the implications for superconducting magnet, power supply and plasma control system performance to be evaluated.
- Contributes to the analysis of plasma stability, disruptions and associated phenomena.
- Contributes to the definition and management of a programme of experimental and modelling R&D activities to further the development of ITER plasma scenarios and control capability.
- Contributes to the definition of ITER requirements for an integrated plasma modelling capability for plasma simulation in the areas of equilibrium, stability and control.
- Contributes to the planning for ITER plasma commissioning and operation.
- Integrates R&D results and analysis from the ITER Members in the areas of plasma equilibrium and control, and the analysis of their implications for ITER plasma operation scenarios.
- Interacts with, and co-ordinates experts, in the ITER Members' fusion communities in the definition, implementation and monitoring of relevant activities in these areas.
- Supervises ITER staff and visiting researchers contributing to studies in these areas of ITER physics.
- Contributes to the preparation of documentation defining operational performance requirements for ITER plasma scenarios and synthesizing simulations of ITER scenarios.
- Provides support to the management of the FS&T Department in liaising with ITER construction activities.

- Maintains a strong commitment to the ITER safety programme and enforces it through individual behaviour and in his/ her organization.
- Maintains a strong commitment to the implementation and perpetuation of ITER safety program, values and ethics.

Qualifications Required:

- PhD or equivalent research experience in a relevant area.
- Excellent expertise in modelling, experimental, or theoretical aspects of fusion physics, with several years experience in the analysis of plasma equilibria, plasma scenarios and plasma control.
- Experience in international collaborations and an ability to represent an international organization such as ITER.
- An ability to work in a variety of software languages and familiarity with modern scientific data analysis and visualization tools would be an asset.
- Good communication skills in written and spoken English.

Work Direction and Interfaces:

- Reports to the ADDG/DDG for Fusion Science and Technology.
- Is a Member of a small group of technical experts contributing to the analysis of plasma equilibria, scenarios, stability and control issues for ITER.
- Interacts with project divisions responsible for the procurement of components and sub-systems, in particular in the areas of superconducting magnets, power supplies, diagnostics and control.
- Liaises with experts in the international fusion community in the areas of plasma equilibrium and scenario development, and plasma control.

Authority/Approval Levels:

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

Measures of Effectiveness:

- Successfully implements analysis programmes supporting studies of plasma equilibrium development and PF control requirements in ITER.
- Successfully supports the planning for ITER operation.
- Contributes effectively to the team activity in these areas of ITER physics and maintains effective support for ITER construction activities in related areas.
- Contributes effectively to the development of R&D activities within the international fusion community in this area in support of ITER construction and the preparations for operation.