TITLE: Coil Integration Engineer		Job Code: TKM-014
<b>REPORTS TO LINE MANAGER:</b> Toroidal Field Coil Section Leader, Tokamak Department		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE: P4
Date Written: October 2006	Date Revised: March 2008	Date Revised: February 2009

#### Purpose:

To manage the mechanical-electrical integration design aspects of the ITER Toroidal Field (TF) coils, and provide expert input for the design integration of : feeders, Coil Terminal Boxes (CTB) including current leads, Central Solenoid (CS), Poloidal Field (PF) and Correction Coils, and Instrumentation.

#### Major Duties/Responsibilities:

- Provides mechanical-electrical integration expertise to the Magnet Division;
- Provides design input for the layout of the coil instrumentation systems, the high voltage cabling in the feeders, and also the interfaces of the instrumentation panels adjacent to the CTBs;
- Manages the mechanical-electrical integration design aspects of the TF coils, including insulation specification and layout;
- Contributes to the definition of mechanical and electrical design criteria for the magnets;
- Manages the qualification and quality control tests for the TF coils;
- Provides design assistance to the other sections, particularly in the areas of coil instrumentation, qualification and quality control, in addition to the design of the current leads;
- Contributes to the preparation of design and procurement specifications relating to the mechanical and electrical design and testing/inspection;
- Participates in the monitoring of TF coil fabrication, in particular the mechanical and insulation testing;
- Participates in the inspection and testing of CS and PF coils during fabrication;
- Supervises the preparation of Computer Aided Design (CAD) drawings defining the mechanical and electrical design of the TF coils;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

# **Qualifications and Experience:**

- Education:
  - Degree at least equivalent to 4 years of study after the High School Diploma, in Mechanical or Electrical Engineering, or other related discipline.
- Technical experience:
  - At least 15 years' post graduate experience in high voltage coils and in the problems associated with cryogenic vacuum systems;
  - At least 15 years' post graduate experience in coil manufacturing;
  - Familiarity with magnetic field coil design and superconductivity;
  - Some knowledge of superconducting coil instrumentation;
  - General knowledge of fusion magnet systems and their structural and voltage design issues.
- Social Skills:
  - Ability to work effectively in a multi-cultural environment;
  - Ability to work in a team and to promote team work.
- Language requirements:
  - Fluent in English (written and spoken) with the ability to communicate clearly and write technical reports and specifications in that language;

# **Direct Supervisor and Interfaces:**

- Reports to the TF Coil Section leader;
- Interfaces extensively with other sections in the Magnet Division and with other Departments as required by the magnet design, in particular the CAD Office;
- Interfaces with the Domestic Agencies and their industries regarding electrical quality control testing.

# Authority/Approval Levels:

This position has authority and approval levels generally defined by the Magnet Division Head for his/her scope of work.

# Measures of Effectiveness:

- Completes the design of insulation aspects within the coil design;
- Successfully manages the qualification and quality control testing of coils and auxiliary systems during procurement.