

TITLE: Coil Designer		TKM-071
REPORTS TO LINE MANAGER: Leader of Central Solenoid (CS) and Correction Coils Section, Magnet Division, Department for Tokamak		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE RANGE: P3-P4
DATE WRITTEN: May, 2008	DATE REVISED: July 2008	DATE REVISED:

Purpose:

- To contribute to the design of the ITER CS and Correction coils, in the areas of the coil windings, joint regions, cases and support structures;
- To contribute to the design documentation and performance analyses;
- To liaise with ITER Domestic Agencies on the coil procurement;
- To review manufacturing plans and monitor manufacturing progress;
- To contribute to the development of coil quality controls and their implementation.

Major Duties/Responsibilities:

- Contributes to the mechanical design of the CS and correction coil windings;
- Supervises appropriate mechanical and electrical analyses of the coil performance;
- Prepares documentation to support the design;
- Works with the ITER Domestic Agencies to define qualification and quality control tests for the CS and correction coils;
- Contributes to the implementation of procedures for QC monitoring;
- Prepares and maintains CAD drawings and models for the design of the CS and correction coils, and ensures compatibility with interfaces within and outside the magnets;
- Interacts with industry regarding optimum fabrication routes for the coils;
- Participates in the monitoring of the fabrication of the coils by the Domestic Agencies;
- Contributes to controlling the coil interfaces with components supplied by ITER;
- Contributes to monitoring and maintaining the fabrication schedule of the CS and correction coils;
- Maintains a strong commitment to the implementation and perpetuation of the ITER safety program, values and ethics.

Qualifications Required:

- **Education :**
 - University degree (Engineering Diploma or Bachelor's Degree) in Mechanical or Electrical Engineering.
- **Experience :**
 - At least 10 years' postgraduate experience in cryogenic coil design;
- Familiarity with analysis procedures for magnetic field coils;
- Knowledge of low temperature superconductivity;
- Knowledge of welding techniques;
- Knowledge of high vacuum technology and requirements;

- Knowledge of electrical insulation techniques such as vacuum impregnation;
- Familiarity with mechanical design codes and standards such as ASME;
- Experience in supervising coil fabrication in industry.
- **Languages requirements:**
 - **Ability to communicate clearly and write technical reports and specifications in English.**

Work Direction and Interfaces:

- Reports to the CS and Correction Coil Section Leader;
- Interfaces with other sections in the Magnet Division, in particular those responsible for structural performance assessment. Interfaces with other departments as required by the magnet design, in particular with the CAD Office.
- Interfaces with the Domestic Agencies and their industries regarding fabrication.

Authority/Approval Levels:

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

Measures of Effectiveness:

- Successfully completes design of CS and correction coils;
- Successfully qualifies and tests quality control of TF coil elements during fabrication;
- Successfully provides maintenance of CS and correction coil schedules.