

<b>TITLE:</b> Coil Designer		TKM-069
<b>REPORTS TO LINE MANAGER:</b> Leader of Toroidal Field (TF) Coils Section, Magnet Division, Department for Tokamak		
<b>DIRECT EMPLOYMENT:</b> NOT REQUIRED		<b>GRADE RANGE:</b> P3-P4
<b>DATE WRITTEN:</b> May, 2008	<b>DATE REVISED:</b> July 2008	<b>DATE REVISED:</b>

**Purpose:**

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

**Major Duties/Responsibilities:**

- Contributes to the mechanical design of the TF coil windings;
- Supervises appropriate mechanical and electrical analyses of the winding performance;
- Prepares documentation to support the design;
- Works with the ITER Domestic Agencies to define qualification and quality control tests for the TF coils;
- Contributes to implementation of procedures for Quality Control (QC) monitoring;
- Prepares and maintains CAD drawings and models for the design of the TF coils, ensures compatibility with interfaces within and outside the magnets;
- Interacts with industry regarding optimum fabrication routes for the TF coils;
- Participates in monitoring the fabrication of the TF coils by the Domestic Agencies;
- Contributes to the control of the coil interfaces with components supplied by ITER;
- Contributes to monitoring and maintaining the fabrication schedule of the TF 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.
- **Language requirements:**
  - Ability to communicate clearly and write technical reports and specifications in English.

**Work Direction and Interfaces:**

- Reports to the TF 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 the design of TF coils.
- Successfully provides qualification and quality control testing of TF coil elements during fabrication;
- Successfully provides maintenance of TF coil schedule