TITLE: Power Electronic Engineer		**JOB CODE:** CEP-082
REPORTS TO LINE MANAGER: Coil Power Supply Section Leader, Electrical Engineering Division, Central Engineering and Plant Support		
DIRECT EMPLOYMENT: NOT REQUIRED		**GRADE:** P3
Date Written: July 2008	**Date Revised:** Feb. 2009	**Date Revised:**

Purpose:

To manage the design, procurement, construction, factory tests, installation, on-site acceptance tests, commissioning and start up of the ITER AC/DC thyristor power converters.

Major Duties/Responsibilities:

- Develops the design and integration of the ITER AC/DC power converters;
- Prepares the ITER AC/DC power converter procurement documentation, including the technical specifications and associated supporting documents for the procurement arrangement of the components;
- Manages the interfaces within the components of the AC/DC power converter system, particularly the interlocks, protection systems, buildings and site layout;
- Supervises the ITER Domestic Agencies' contributions to the design activities, manufacturing, testing and installation of the components delivered by the Domestic Agencies within his/her scope;
- Develops and monitors the budget, resources, procurement and construction plans related to the activities under her/his responsibility;
- Evaluates design issues and provides reports to the Section Leader;
- Regularly revises the Project Schedule associated with the fabrication, installation, testing and commissioning of the AC/DC converter components and systems;
- Implements guidelines and rules established by the line management;
- 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 Electrical or Power Electronic Engineering or other related discipline;
  - Newly graduated engineers in Electrical or Power Electronic Engineering, or a related curriculum, with an outstanding academic record may also apply for this post. In this case, a P2 grade level will be offered to the successful candidate (see Note 1 below).

- **Technical experience**:
  - At least 5 years' working experience in the design, installation and testing of large AC/DC power conversion systems (above 100 MVA and 25 kA) in an industrial or scientific research environment comparable to those required for ITER or projects of similar complexity;
  - Working knowledge of the design details, technical requirements and protection systems of large AC/DC thyristor power converters comparable to those required to supply the ITER magnet system;
  - Working knowledge of the control, protection, and interlock schemes for a large AC/DC conversion plant;
  - Strong technical writing skills and ability to draft/revise technical reports/documentation and project plans;
  - Strong experience using computer codes for transient and steady state analysis of power converter and electrical circuits;
  - Experience in design, construction and operation of AC/DC conversion systems for Tokamak fusion devices, or large science facilities would be an advantage;
  - Experience in the design, construction and operation of AC/DC conversion systems and the associated protection devices and systems required for the supply of large superconductive magnets would be an advantage;
  - Experience in design, construction and operation of high power conversion plants (i.e. rated power above 200 MVA) for an electrochemical plant, High Voltage Direct Current (HVDC) transmission links, or equivalent would be an advantage.
- **Social Skills**:
  - Good communication skills and the ability to organize and monitor design, R&D and construction activities;
  - Collaborative and positive personality;
  - 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).

Direct Supervisor and Interfaces:

- Reports to the Leader of Coil Power Supply Section;
- Interacts with members of the ITER Team and Domestic Agency personnel as required.

Authority/Approval Levels:

This position has authority and approval levels generally defined by the Coil Power Supply Section Leader for her/his scope of work.

Measures of Effectiveness:

- Successfully implements guidelines and rules established by the Coil Power Supply Section Leader and the Head of the Electrical Engineering Division;
- Successfully provides engineering support to the Coil Power Supply Section and the Electrical Engineering Division;
- Successfully manages the ITER AC/DC conversion system design integration and interfaces with other ITER systems;
- Successful manages and follows up with the work done by the Domestic Agencies and the Subcontractors;
- Successfully maintains effective communications with all parties delivering subsystems.

Note 1: Young Graduate Applicant Requirements

- Outstanding academic record
- Degree level equivalent to at least 4 years of university education received from one of the top ranking universities;
- In addition to the basic subjects which are part of the Electrical Engineering curriculum, course experience shall also have covered the following subjects:
    - Power Electronics
    - Theory and design of thyristor power converters
    - Power transmission/Power systems
    - Theory and design of Automatic Control Systems
    - Transient Analysis by Computer Simulations
    - Project Management