

TITLE: Cryo Distribution Engineer		CEP- 077
REPORTS TO LINE MANAGER: Leader of Cryogenic System Engineering Section, Plant Engineering Division, Department for Central Engineering and Plant Support		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE RANGE: P3 - P4
Date Written: July 2008	Date Revised:	Date Revised:

Overall Purpose:

To participate in the design, layout, procurement, installation and testing of the cryolines and cryo-distribution system for the ITER Tokamak.

This includes the cryogenic distribution boxes installed inside the Tokamak building for forced flow cooling of ITER cryogenic users and all sets of cryogenic transfer lines to connect with the magnets, the 80K Tokamak thermal shields and the cryo-vacuum pumps, including transfer lines for the cryoplant cold box building.

Major Duties/Responsibilities:

- Revises and improves the process diagrams and design interfaces of the cryo distribution boxes and the cryolines with the cryoplant process boxes and all ITER cryogenic users, namely the magnets, the cryo-vacuum pumps and the 80K thermal shields of Tokamak;
- Develops the detailed layout, internal design and routing of the cryolines inside both the Tokamak and cryoplant cold box buildings and between these two buildings;
- Develops the layout and routing of warm lines inside three buildings for the gas compressor stations, the cryoplant process boxes and the Tokamak pit;
- Develops the technical specifications and revision of the Project Integration Document related to the cryolines and cryo distribution;
- Develops the programs and schedules for the building, testing and commissioning of the cryo distribution system;
- Supervises and monitors the procurement of the cryoline and cryo distribution components;
- Maintains a strong commitment to the implementation and perpetuation of the ITER safety program, values and ethics.

Qualifications Required:

- **Education:** University Degree (Engineer Diploma or equivalent) in Cryogenics, Mechanical Engineering or related subjects
- **Experience:** At least 5 years in the development, design, procurement and commissioning of cryolines and cryo distribution boxes for large cryogenic systems for fusion or accelerator applications;
- Excellent knowledge of industrially proven cryogenic equipments, instrumentation and controls in world market and associated R&D for specific applications;
- Good knowledge of the design code and standards;
- Excellent knowledge of process engineering and analysis of operating modes for large cryogenic distribution systems;
- Good knowledge of thermal-hydraulic and thermo-mechanical analysis tools;

- Good practical knowledge of factory acceptance tests and commissioning of complex equipments;
- Excellent knowledge of fabrication, welding and leak testing techniques;
- **Language requirements:** Excellent communication skills in written and spoken English;
- Ability to develop and maintain effective international contacts to perform tasks in a multicultural environment, covering the international project.

Work Direction and Interfaces

- Reports to the section leader of the cryogenic system engineering;
- Interfaces with designers of the magnets, the Tokamak 80K thermal shields, the cryo-vacuum pumps, the cryoplant and the buildings to support integration.

Authority/Approval Levels:

Has authority and approval levels defined by the section leader for his/her work.

Measures of Effectiveness

- Successfully defines and implements the concept of the cryolines and cryo distribution system;
- Successfully manages interfaces between the cryogenic system and cryogenic users;
- Successfully manages plans for installation, tests and commissioning;
- Successfully maintains effective communications with all parties delivering subsystem.