

Cryogenic Distribution Engineer

CEP-107

Reports to Line Manager:	Cryogenic System Engineering Section Leader, Plant Engineering Division, Central Engineering and Plant Support Department	Job Code:	CEP-107
Direct Employment:	Not Required	Grade:	P3

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.

china

Major Duties/Responsibilities

eu

india

japan

korea

ruusia

usa

- Revises and improves the process diagrams and design interfaces of the cryo-distribution boxes and the cryolines for all ITER cryogenic users, namely the magnets, the cryo-vacuum pumps and the 80K Tokamak thermal shields;
- Develops the detailed layout, internal design and routing of the cryolines inside both the Tokamak and cryoplant cold box buildings and between also 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;
- Produces the documents 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 and Experience

- **Education:**
 - Degree at least equivalent to 5 years of study after the High School Diploma, in Cryogenics, Mechanical Engineering or other related discipline.
- **Technical experience:**
 - At least 5 years' experience 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 equipment, instrumentation and controls in the world market and associated R&D for specific applications;

- Good knowledge of international design codes and standards;
- Excellent knowledge of process engineering and operating modes analysis for large cryogenic distribution systems;
- Good knowledge of thermo-hydraulic and thermo-mechanical analysis tools;
- Good practical knowledge of factory acceptance tests and the commissioning of complex equipment;
- Excellent knowledge of fabrication, welding and leak testing techniques.
- ***Project experience:***
 - Basic project management experience required.
- ***Social Skills:***
 - Ability to develop and maintain effective international contacts to perform tasks in a multicultural environment, covering an international project;
 - 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 Cryogenic System Engineering Section Leader;
- Interfaces with the designers of the magnets, the Tokamak 80K thermal shields, the cryo-vacuum pumps, the cryoplant and the buildings to support integration.

Authority / Approval Levels

This position has authority and approval defined by the Cryogenic System Engineering Section Leader for his/her work.

Measures of Effectiveness

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