

TITLE: Diagnostic Engineer		CHD-056
REPORTS TO LINE MANAGER: Head of Diagnostics Division Department for CODAC&IT, H&CD and Diagnostics		
DIRECT EMPLOYMENT: NOT REQUIRED		GRADE RANGE: P3 – P4
DATE WRITTEN: June 2008	DATE REVISED:	DATE REVISED:

Purpose:

To develop the design of interfaces of diagnostic components with the main tokamak components. To perform engineering analysis as required. To manage scope, schedule and cost of procurement of diagnostic systems and supporting hardware through specified procurement packages. To support the Division Head in all matters relating to the implementation of ITER diagnostics.

Major Duties/Responsibilities:

- Develops the design interfaces of diagnostic components with the main tokamak components. Potential topics to be addressed include heat loads, cooling requirements and options, e-m forces, particle fluxes and protection of optical components, electrical connections, remote-handling, calibration, alignment, testing, and maintenance schemes;
- Develops conceptual, outline engineering designs for key diagnostic components located in the harsh ITER environment;
- Performs any necessary analysis of electro-magnetic and thermal stresses, dynamic analysis, neutronics assessment, and provision for mitigation of environmental factors of diagnostic equipment;
- Prepares technical specifications of allocated diagnostic procurement packages;
- Manages procurement of diagnostics through procurement packages interacting with the teams working in the Domestic Agencies of the ITER Partners as necessary;
- Specifies and drives ongoing diagnostic design and integration activities in the Domestic Agencies and updates and integrates these designs;
- Develops and uses project engineering tools for the procurement of diagnostic systems;
- Prepares for the installation of the diagnostic systems on ITER;
- Maintains interface documentation and keeps it up to date;
- Reports variances on all technical, cost and schedule aspects immediately to the Division Head;
- Supports effective risk identification and management;
- Manages the change control process for his/her scope of work and communicates changes to the Division Head. Guarantees integration with other technical interfaces;

- Maintains a strong commitment to the implementation and perpetuation of the ITER safety program, values and ethics.

Qualifications and Experience:

- **Education:** Training and qualifications to professional engineer status (Equivalent Master's Degree or higher).
- **Experience:** At least 5 years' experience in project engineering, preferably with specific design, project management and/or procurement experience in a high technology field such as plasma physics, high energy particle physics, fission reactors or Ultra High Vacuum (UHV) systems;
- Familiarity with some aspects of mechanical and/or electrical engineering design for tokamak diagnostic systems, such as optical engineering, vacuum systems, microwave and cabled electrical transmission, water cooling systems and mechanical handling schemes, would be an advantage.

Work Direction and Interfaces:

- Reports to the Division Head for Diagnostics.

Authority/Approval Levels:

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

Measures of Effectiveness:

- Successfully develops the design of interfaces of diagnostic components with the main Tokamak components;
- Successfully develops conceptual, outlines engineering designs for key diagnostic components located in the harsh ITER environment;
- Successfully prepares technical specifications of allocated diagnostic procurement packages;
- Successfully manages procurement of diagnostics through procurement packages;
- Successfully prepares for the installation of the diagnostic systems on ITER;
- Successfully supports the diagnostic needs of the project.