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JOB DETAIL

Ref. IO1625 - 1/8/2016

Plasma Boundary Diagnostician - TED-044

Main job	Plasma physics
Department	TED / Tokamak Engineering Department
Division	TED / Port Plugs & Diagnostics Integration Division
Section	TED / PPD / In-Vessel Diagnostics Section
Job Family	Scientist-2
Application Deadline (MM/DD/YYYY)	01/31/2016
Grade	P3
Direct employment	Required
Purpose	<p>To lead the steady-state magnetic sensor project from detailed design, through Research & Development (R&D) and qualification to delivery. To oversee construction of other plasma boundary systems. To contribute to the modeling of the plasma boundary. To resolve issues of boundary layer diagnostics.</p> <ul style="list-style-type: none">• Manages the steady-state magnetic sensor project:<ul style="list-style-type: none">– Leads the supply of the system;– Determines, organizes and executes all supporting R&D;– Manages the electronics, hardware and software direct procurement activity;– Manages the commissioning preparation;– Plans and specifies assembly and integration on site;• Develops the detailed design of the steady state sensors:<ul style="list-style-type: none">– Develops calibration strategies in the context of other magnetic systems;– Develops the interfaces of the sensors with the tokamak;– Drives and contributes to relevant integration activities;– Checks and ensures maintenance of relevant ITER databases;– Specifies and updates of electrical diagrams;– Updates and takes through review all relevant supporting engineering documents;– Leads the design review processes;– Prepares technical specifications for procurement with industry;• Oversees construction of Infrared (IR) systems:<ul style="list-style-type: none">– Provides oversight to Domestic Agencies (DA) activities for IR and visible camera systems;– Leads interfaces and other ITER Organization (IO) activities related to IR systems;– Manages the commissioning preparation activities;
Main duties / Responsibilities	<ul style="list-style-type: none">– Plans and specifies assembly and integration on site;– Ensures DA and IO schedules are compatible at all times.• Resolves design issues related to boundary layer diagnostics, such as Langmuir Probes, particle (alphas, CX-neutrals) detector systems:<ul style="list-style-type: none">– Calculates typical plasma-wall interaction related loads;– Updates load specifications;– Assesses interface and other change requests; Estimates signal levels;– Organizes, specifies and executes supporting R&D, as needed.• Contributes to the modeling of the plasma boundary region<ul style="list-style-type: none">– Models the edge region, including effects of component misalignment on the edge plasma and plasma-wall contact;– Magnetic field mapping; Models detector and component responses to fast ions;• Supervises external contractor, visitor and technicians'

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	<p>work;</p> <ul style="list-style-type: none">• Communicates with other organizations within the ITER collaboration and the fusion community;• Reports variances on all technical, cost and schedule aspects immediately to the Section Leader;• Supports effective risk identification and management;• Manages the change control process for the work and communicates changes to the line management;• Maintains related documentation at all times on the ITER Document System and ensure it is updated and in the correct formats;• Ensures the Division is well represented from an engineering perspective;• Performs other duties in support of the project schedule as described in the Detailed Work Schedule and the Strategic Management Plan;• May be requested to be part of any of the project team dealing with the above activities and perform other duties upon management request;;• Maintains a strong commitment to the implementation and perpetuation of the ITER safety program, values and ethics. <p>• Reports to the In-Vessel Section Leader;</p> <p>• Interfaces with ITER Technical Departments, as required;</p> <p>• In response to requests from the Director-General and/or Tokamak Engineering Department Head (TED), or proactively, informs the DG/ TED Department Head of any important and urgent issues that cannot be handled by the concerned line management and may jeopardize the achievement of the Project's objectives.</p> <p>• Work packages completed to agreed quality and deadlines;</p> <p>• Developed and approved interface documentation, schematics plans and databases;</p> <p>• Developed and approved technical documentation for procurement;</p> <p>• Developed and approved installation plans;</p> <p>• Collaborates efficiently with technical partners in Domestic Agencies and other Departments at IO;</p> <p>• Works efficiently at all times with other Diagnostics team members.</p>
	Project Construction Phase
Level of study	PhD or equivalent degree
Diploma	Physics or Engineering or equivalent
Level of experience	At least 6 years
Technical experience/knowledge	<p>– At least 6 years' experience in fusion;</p> <p>– Proven experience in the design of complex sensors & moving systems in vacuum;</p> <p>– Proven participation in fusion experimental operations;</p> <p>– Documented expertise in plasma boundary and plasma wall interaction physics;</p> <p>– Documented ability to coordinate experimental teams;</p> <p>– Ability to project costs and resources for technical projects;</p> <p>– Basic knowledge of nuclear effects on materials;</p> <p>– Experience with design defense in technical design reviews;</p> <p>– Familiarity with electrical diagrams;</p> <p>– Experience with electrical tests and magnetic measurement.</p>
Social skills	Ability to work effectively in a multi-cultural environment Ability to work in a team and to promote team spirit
Others	<p>– Proven presentation writing skills;</p> <p>– Track record of first author publications in English;</p> <p>– Documented coding experience (e.g. C + +, IDL, Matlab, other);</p> <p>– Documented expertise in numerical modeling;</p> <p>– Use of 3D mechanical design and plasma modeling packages;</p> <p>– Experience with the technical follow-up of CAD activity;</p> <p>– Familiarity with CATIA;</p> <p>– MS Office standard (Word, Excel, PowerPoint, Outlook).</p>
Languages	English (Fluent)

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