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JOB DETAIL

Ref. IO2146 - 8/2/2019

Power Electronics Engineer PED-036

Main job	Electronics
Department	PED / Plant Engineering Department
Division	PED / Electrical Engineering Division
Section	PED / EED / Coil Power Supply Section
Job Family	Engineer - 2
Application Deadline (MM/DD/YYYY)	09/08/2019
Grade	P3
Direct employment	Not required
Purpose	SAP Id: 50003942 To perform and follow-up the activities related to the engineering design, integration, interfaces, procurement, installation and commissioning of the ITER In-Vessel Coil (IVC) power supply system. To integrate the engineering design of the IVC power supply system with ITER's plant-level Instrumentation and Control (I&C) systems. To perform the in-field engineering activities during the installation and commissioning of the IVC power supply system Background: The IVC power supply system consists of one VS3 power supply (to drive a VS3 coil) and 27 Edge Localized Modes (ELM) power supplies (to drive 27 separate ELM coils). The VS3 power supply will consist of a 22kV switchgear and stepdown transformer, a front-end rectifier, a large energy storage capacity bank, a 80kA/2.4kV switching-mode inverter operating in pulsed mode, high current mechanical safety switches, cooling systems, and electronics control systems. The ELM power supplies are likely to be split into several groups. Each group will consists of a 22kV switchgear and stepdown transformer, a front-end rectifier, a DC link capacity bank, and several separate switching-mode inverters at 15kA and a few hundred volts operating in continuous mode, high current mechanical safety switches, cooling systems, and electronics control systems.
Main duties / Responsibilities	Please note that an organizational restructuring is planned in accordance with the needs of the organization and the evolution of the project phases. In this context, the unit of assignment of the present position may be updated in late 2019, early 2020. Performs and achieves the conceptual design of the IVC power supply system, proposing solutions in compliance with quality and safety requirements; Writes and/or reviews technical specifications for the procurement of the IVC power supply system and R&D prototypes to support its conceptual design; Manages interfaces and integration of the IVC power supply system with other systems, services and buildings; Monitors and follows up the procurement of the IVC power supply, that includes design reviews, documents and drawings review, manufacturing inspection etc.; Prepares the Engineering Work Package for the installation of the IVC power supply system; Supervises the installation the IVC power supply system; Performs Site Acceptance Tests and the commissioning of the IVC power supply, managing Deviation Requests or Non-Conformances by implementing and monitoring recovery action plans; Ensures the compliance with Quality Assurance (QA) & Quality Control (QC) requirements and standards for components and systems, in close relation with the quality engineers; May be requested to be part of any of the project/construction teams and to perform other duties in support of the project; May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.
Measures of effectiveness	Effectively performs the design, procurement, construction and commissioning activities of the IVC power supply system to meet the defined quality, cost and schedule; Provides appropriate design solutions for the design of the

	IVC power supply system; Maintains effective communication with the interfacing teams within ITER and with the external contractors Performs engineering analysis as required to verify the performances of the IVC power supply system to a high standard and within the defined schedule; Ensures proper supervision of the installation and commissioning activities for the IVC power supply system; Contributes effectively to the activities related to resolution of interfaces and integration issues related to the IVC power supply system.
Level of study	Master or equivalent degree
Diploma	electrical engineering field or other
Level of experience	At least 8 years
Technical experience/knowledge	At least 8 years' experience in electrical engineering design, integration, interfaces, procurement, installation and commissioning of power supply systems. Master degree or equivalent in electrical engineering field or other relevant discipline (power electronics is preferable). Designing high power switching-mode power conversion (mega-watts level); Managing large power supplies procurement and contracts for their entire lifecycle (e.g. writing technical specifications, certifying gates completion and associated payments, mitigating risks, closing contract, etc.); Applying quality-process, related procedures and interacting with others to ensure requirements implementation and interfaces management; Performing steady-state and transient electrical analysis of switching power converters; Reviewing 3D modelling and 2D schematics.
General skills	Collaborate: Ability to conduct dialogue with a wide variety of contributors and stakeholders; Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment; Drive results: Ability to persist in the face of challenges to meet deadlines with high standards; Manage Complexity: Ability to gather and analyze multiple and diverse sources of information to define problems accurately before moving to proposals/solutions;. Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.
Others	The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
Languages	English (Fluent)