Ref. IO1153 - 10/28/2011

Coil Instrumentation&Controls Eng Officer TKM-049

Main job	Electronics
Department	DIP/Directorate for Tokamak
Division	TKM / Magnet Division
Section	TKM / MAG / Superconductor Systems and Auxiliaries Section
Job Family	Project engineering
Application Deadline	30/Nov/2011
Grade	P3
Direct employment	Not required
Purpose	To design components, launch procurement contracts and conduct their follow-up in the field of superconducting magnets quench detection, high voltage instrumentation and control systems, some of which fall in the domain of nuclear safety.
Main duties / Responsibilities	• With the use of electromagnetic analysis results, designs and develops quench detection electronics to be compliant with an environment including changing magnetic fields and nuclear radiation; • In close interaction with the magnet systems designers, designs and develops high voltage instrumentation components; • Writes procurement specifications for the instrumentation components and control equipment, places the related contracts and perfoms the follow-up with strong involvement in the quality assurance and control aspects; • Understands functionalities of the cryogenic instrumentation and implements a safety quench detection system interfacing with the ITER Central Safety System; • Designs and develops control equipment related to the interfaces of the magnets' investment protection equipment with the Central Interlock System; • Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Measures of effectiveness	• Completes specifications and places contracts in a timely manner according to the project schedules; • Completes the procurement activities in a timely manner and within the defined costs; instrumentation components and control equipment must be available at the milestones fixed by the project; • Communicates critical information to his/her superior in a timely

	manner in order not to jeopardise the progress of activities; • Writes the relevant documentation and makes it available at defined steps of the development/manufacturing/installation process.
Level of study	Master or higher degree
Diploma	analog/digital electronics, controls systems
Level of experience	At least 8 years
Technical experience	– At least 8 years' experience in quench detection and protection in superconducting magnets systems; – Experience in the design and operation of superconducting magnet systems in tokamak is desirable; – At least 5 years' experience in the design of analog/digital electronics, with emphasis in the associated controls aspects like interfacing to data acquisition systems, protection interlocks and safety systems; – At least 5 years' experience in large superconducting magnets facilities, with a clear understanding in cryogenics and high voltage applications; – Experience in insulation materials and their applications for vacuum and cryogenic environment; – Experience in radiation-hard and tolerant electronic components; – At least 5 years' experience in relevant contracts follow-up and related quality assurance aspects(inspection plan, quality assurance programmes, factory acceptance tests, etc); – Project experience: good understanding of an engineering document plan.
Project experience	2 to 4 years
Social skills	Ability to work effectively in a multi-cultural environment Ability to work in a team and to promote team spirit
Specific skills	MS Office standard (Word, Excel, PowerPoint, Outlook)
General skills	•Education: PhD in Electronics/Controls would be an advantage. •Computer and IT skills: – Efficiency running electro-magnetic simulation codes and performing analysis of the results; – Some knowledge of a Computer Aided Electronics package.
Free criteria	• Reports to the Magnet Division Head, under the coordination of both the Superconductor Systems and Auxiliaries Section Leader and the ITER Magnets' Instrumentation Responsible Officer; • Interfaces extensively with other groups, especially with the one responsible for the controls and data acquisition systems in ITER;

• Interfaces with the Domestic Agencies' teams which follow the manufacturing contracts for coils, feeders, structures and supports.

Languages English (Working)