ITER 국제기구 공모 직위 직무기술서 (제88차)

❍ 4개 직위

구분	분야	소속	직위	Job No.	등급
①	중앙 엔지니어링 (CEP)	Fuel Cycle Engineering Division	Vacuum Cryo-pumping Engineer	CEP-022	P3
②	토카막 (TKM)	Vessel Division	Mechanical Engineer	TKM-020	P3
③	중앙 엔지니어링 (CEP)	Fuel Cycle Engineering Division	Vacuum Process and Instrumentation Eng.	CEP-132	G6
④	중앙 엔지니어링 (CEP)	Plant Engineering Division	Cooling Water CAD Designer	CEP-144	G4

IO1361 Vaccuum Cryo-pumping Engineer CEP-022

General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Central Engineering & Plant
Division	CEP / Fuel Cycle Engineering Division
Section	CEP / FCE / Vacuum Section

Job description

Main job	Engineering - Vaccuum technologies
Title of the position	Vaccuum Cryo-pumping Engineer CEP-022
Job family	Engineer - 2
Grade	P3
Direct employment	Required
Purpose	To develop the interfaces between the ITER cryo pumps and their supplies. To develop the installation, test and commissioning plans for the cryo pumping systems. To develop the low temperature helium supplies for the ITER roughing pumping system. The key facts and figures of the Vacuum Systems are: ITER will be the largest and most complex vacuum system yet to be built. Large system volumes such as the Cryostat (8500 m3), the Vacuum Vessel (1400 m3) or the Neutral Beam injectors (860 m3) need to be evacuated and kept under high vacuum conditions; Custom made cryo pumps are employed to allow high speed pumping in a harsh environment (radiation, magnetic fields); A wide-ranging Service Vacuum System provides evacuation of volumes containing different gases including tritium; Leak detection and leak localization is challenging due to complexity and size of Tokamak installations.
Main duties / Responsibilities	Designs, and specifies the feeds connecting the torus, cryostat and neutral beam cryo-pumps to their respective cold valve boxes, including assembly interfaces of the cryo-transfer lines; Develops Process and Instrumentation Diagram (P&ID) layouts for cryo pump distribution; Designs and integrates overpressure protection for all cryo pumping vacuum equipment with overpressure potential; Participates in the writing of procurement specifications for the procurement of cryo pump distribution which are the responsibility of the Vacuum Section and assists in the same task for other client systems using cryo-pumps; Responsible for the design, layout and integration of the torus, cryostat, neutral beam and pellet injector cold valve boxes, including the interface with the cryo plant and cryo distribution; Responsible for the Vacuum interface to super-conducting magnet; Supports vacuum leak localization research and development as it relates to cold leaks into vacuum; Determines and recommends leak testing methods and procedures minimizing worker radiation dosage during leak detection, localization, and measurement under the magnetic and radiological environmental conditions; Responsible for the high temperature regeneration system and supplies for cryo pumps; Follows-up procurement arrangements for cryo pump services and procurement of the front end cryogenic distribution under the responsibility of the Vacuum Section; Ensures the implementation of Quality Assurance procedures for design, manufacturing, testing and commissioning and Quality Control implementation during the whole process of the supply completion , from the design up to the commissioning moving through procurement and fabrication / assembly; Updates when required the Project Schedule associated with the fabrication, installation, testing and commissioning related to Instrumentation & Control and electrical engineering; Performs other duties in support of the project schedule as described in the Detailed Work Schedule or Strategic Management Plan;

	Performs other duties linked to the above purpose upon management request, as necessary; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics. Reports to the Vacuum Section Leader; Acts as a Vacuum interface to all technical divisions and supports integration with ITERs cryo plant and ITERs assembly and integration team; In response to requests from the Director-General and/or Director of Central Engineering & Plant (CEP) Directorate, or proactively, informs the DG/ Director of CEP Directorate 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.
Measures of effectiveness	Work Products: Completes assignments as specified, on time and within budget; particular attention will be given to design progress, contract management, document preparation and project management; progress will be measured by quality and quantity of work products; Team Contributions: Provides and receives contributions from fellow team members, and contributes to an overall productive work environment; Safety and Security: Performs work, generates designs and oversees the work of others with proper attention to safety and security; Interfaces successfully and communicates efficiently with other ITER Directorates, Domestic Agencies, maintaining good relationships. Project Construction Phase

Applicant criteria

Level of study	Bachelor or higher degree
Diploma	Engineering or equivalent
Level of experience	At least 10 years
Technical experience	At least 10 years of engineering experience in industry or on large construction projects; At least 3 years of engineering experience in the vacuum/cryogenic field, preferably in a fusion or nuclear context; Good practical knowledge in vacuum and cryogenics; Experience of thermal hydraulic calculations and gas dynamics; Experience working to codes and performing structural analysis; Experience working with draftsmen to develop designs on Computer Aided Design systems; Experience manufacturing contracts for complex fabrications; Basic experience in managing procurements and projects.
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
Languages	English (Working)
Specific skills	Computer Aided Design, MS Office standard (Word, Excel, PowerPoint, Outlook)

IO1364 Mechanical Engineer TKM-020

General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Tokamak
Division	TKM / Vessel Division
Section	TKM/ VD/ VV / Ports Section

Job description

Main job	Engineering - Mechanics
Title of the position	Mechanical Engineer TKM-020
Job family	Engineer - 2
Grade	P3
Direct employment	Not required
Purpose	To be responsible for design, analysis, assembly and activities for the procurement of In-Wall Shielding (IWS). To be responsible for manufacturing management of IWS.
Main duties / Responsibilities	Collaborates with Indian (IN), Korean, European Domestic Agency (DAs) and ITER Organization (IO) other divisions to finalize In Wall Shielding (IWS) assembly sequence and design of assembly tools; Manages overall IWS design and manufacturing activities; Works in close collaboration with the Vacuum Vessel (VV) Technical Responsible Officer; Reviews thermal, hydraulic and structural analysis as required to verify the design; Solves issues related to interface between IWS and VV; Completes IWS design considering VV Project Change Request (PCR)/Design Review (DR), IWS assembly etc; Monitors progress of IWS Procurement Arrangement (PA) in collaboration with IN DAs, and collaborate with IN DAs/tender and IO to solve issues related to IWS PA; Supervises and reviews IWS manufacturing drawings; Coordinates IO/ Academy of Sciences, Institute for Plasma Physics/IN DAs for IWS design schedule, also coordinating IWS PA schedule with IO and IN DAs; Manages IWS manufacturing and integration by DAs; Finalizes the design and prepares for the procurement specification for the NB liner when it is required; Performs other duties in support of the project schedule as described in the Detailed Work Schedule and the Strategic Management Plan; Performs other duties linked to the above purpose upon management request, as necessary; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Measures of effectiveness	Finalizes the engineering drawings for the IWS; Completes the IWS manufacturing design by IN DAs; Manages IWS manufacturing and integrations; Delivers in timely manner the IWS blocks within defined schedule; Generates and maintains coherent, comprehensive and understandable design documentation; Maintains effective communications within the IO and with DAs; Completes documents for Neutral Beam liner procurement in a timely manner when they are required.
	Reports to VV/Ports Section Leader; Interfaces with all other departments within the ITER Organization and the DAs; In response to requests from the Director-General and/or Director of Tokamak (TKM) Directorate, or proactively, informs the DG/Director of TKM Directorate 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.

	ID SAP: 500000168 Project Construction Phase

Applicant criteria

Level of study	At least Bachelor's degree or equivalent
Diploma	Engineering or other relevant discipline
Level of experience	At least 10 years
Technical experience	At least 10 years experience in Design and manufacture of components for UHV and/or nuclear devices; Experience in fabrication (forming and welding) of large stainless steel structures; Experience working with nuclear and conventional vessel codes.
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
Languages	English (Working)
Specific skills	MS Office standard (Word, Excel, PowerPoint, Outlook)

IO1360 Vacuum Process and Instrumentation Eng. CEP-132

General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Central Engineering & Plant
Division	CEP / Fuel Cycle Engineering Division
Section	CEP / FCE / Vacuum Section

Job description

Main job	Engineering - Vaccuum technologies
Title of the position	Vacuum Process and Instrumentation Eng. CEP-132
Job family	Engineer - 1
Grade	G6
Direct employment	Required
Purpose	To design and to implement vacuum and cryogenic Instrumentation and Control (I&C) systems which are under the responsibility of the ITER Vacuum Section. To generate process logic definition and documentation for ITER vacuum systems, i.e development of corresponding I&C architecture, and planning and preparing for correct integration in the ITER plant facility and providing specialist support in this field for relevant procurement packages. The key facts and figures of the Vacuum Systems are: ITER will be the largest and most complex vacuum system yet to be built. Large system volumes such as the Cryostat (8500 m3), the Vacuum Vessel (1400 m3) or the Neutral Beam injectors (860 m3) need to be evacuated and kept under high vacuum conditions; Custom made cryo pumps are employed to allow high speed pumping in a harsh environment (radiation, magnetic fields); A wide-ranging Service Vacuum System provides evacuation of volumes containing different gases including tritium; Leak detection and leak localization is challenging due to complexity and size of Tokamak installations.
Main duties / Responsibilities	Participates in the design and integration of ITER vacuum systems (vacuum vessel, cryostat, neutral beams and auxiliary vacuum systems) having responsibilities for design of vacuum I&C systems throughout their project lifecycle from concept design through to installation and integrated commissioning; Defines process control logic and documentation for various ITER vacuum systems; Designs control systems necessary for the successful operation of the ITER vacuum system, including sensors and actuators control interfaces; Plans and prepares I&C integration in the ITER plant facilities and systems, (including control system interfaces and layout of control/electrical cubicles); Participates in the design and implementation of interlocks necessary for ITER safe operation to international standards; Provides follow up of vacuum instrumentation procurements with the ITER Domestic Agencies; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics; Ensures the implementation of Quality Assurance procedures for design , manufacturing, testing and commissioning and Quality Control implementation during the whole process of the supply completion, from the design up to the commissioning moving through procurement and fabrication / assembly; Updates when required the Project Schedule associated with the fabrication, installation, testing and commissioning related to I&C and electrical engineering; Performs other duties in support of the project schedule as described in the Detailed Work Schedule or Strategic Management Plan; Performs other duties linked to the above purpose upon management request, as necessary; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics. Reports to the Vacuum Section Leader;

	Acts as a Vacuum interface to all technical divisions, supports integration with ITERs higher level control team (CODAC), ITERs assembly and integration team, and ITERs electrical and cabling team; In response to requests from the Director-General and/or Director of Central Engineering & Plant (CEP) Directorate, or proactively, informs the DG/ Director of CEP Directorate 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.
Measures of effectiveness	Successfully contributes to the Vacuum Control and Instrumentation design, including definition of safety sensors and interlocks; Interfaces successfully and communicates efficiently with other ITER Directorates, Domestic Agencies, maintaining good relationships; Successfully provides design, engineering and construction support for the project; Contributes effectively to successful value engineered and validated I&C design of vacuum systems; Achieves and contributes to the achievement of the project schedules and milestones.
	SAP Id: 50000233 Project Construction Phase

Applicant criteria

Level of study	Bachelor or higher degree
Diploma	Electronic or process engineering
Level of experience	At least 7 years
Technical experience	At least 7 years of experience in engineering experience in industry or on large construction projects; At least 2 years of experience in vacuum instrumentation and controls; preferably linked to large systems for fusion or other high energy physics applications; Experience of industrial control and instrumentation equipment including PLCs, Field bus; Experience working to International Standards and safety in installation; Experience in complex process plant controls; Preferably experience in high vacuum measurement techniques and/or cryogenic instrumentation; Knowledge of Analogue and digital electronics; Experience of engineering in nuclear environment and of the susceptibility of electronics to ionizing radiation would be an advantage.
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
Languages	English (Working)
Specific skills	Computer Aided Design, MS Office standard (Word, Excel, PowerPoint, Outlook)

IO1362 Cooling Water CAD Designer CEP-144

General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Central Engineering & Plant
Division	CEP / Plant Engineering Division
Section	CEP / PED / Cooling Water System Section

Job description

Main job	Computer Science - Computer Aided Design
Title of the position	Cooling Water CAD Designer CEP-144
Job family	Technician - 3
Grade	G4
Direct employment	Not required
Purpose	To provide support for the production and review of 2D and 3D Computer Aided Design (CAD) drawings for the Cooling Water System (CWS) section. To execute technical studies on cooling system layout arrangements and to review CAD models and drawings made by Domestic Agencies (DAs) and industrial Subcontractors. To support (CWS) section for the preparation of drawings for Technical Specifications.
Main duties / Responsibilities	Participates to the finalization of the design of the CWS Configuration and Detailed Model drawings and relevant interfaces in the Tokamak Complex, auxiliary buildings and the site; Participates to the integration of the CWS piping and equipment with all the interfacing clients inside the buildings and ITER site; Reviews the documents, configuration models and drawings prepared by industry; Participates to check the coherency between the 2D drawings (e.g. Piping & Instrumentation Diagrams) of the CWS circuits prepared by the Domestic Agencies (DAs) and 3D drawings; Supports the CWS Technical Responsible Officers for preparing piping and systems' layout and isometric drawings for the preparation of Technical Specifications and to support the relevant procurements and assembly on ITER site; Identifies and resolves the potential interface issues about CWS space reservation and with other Plant Breakdown Structures; Participates to prepare catalogues in 3D CAD models for piping components (e.g. valves, instrumentation, etc.) and supports (e.g. anchors, snubbers, etc.) according to catalogues from vendors'; Performs other duties linked to the above purpose upon management request, as necessary; Performs other duties in support of the project schedule as described in the Detailed Work Schedule or Strategic Management Plan; Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Measures of effectiveness	Reports to the Cooling Water System Section Leader; Acts as an interface between the CWS design coordinator, Designers of Design Office, and Domestic Agencies' staff and suppliers to monitor and support development and update of the Configuration and Detailed Models; Acts as an interface between the Cooling Water System section and the interfacing client and user systems for the Configuration and Detailed Model drawings; In response to requests from the Director-General (DG) and/or Director for Central Engineering and Plant (CEP) Directorate, or proactively, informs the DG/ Director for CEP Directorate 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.
	Contributes effectively to the Cooling Water System (CWS) piping and equipment design, procurement, installation and testing within the defined cost and schedule; Provides all inputs necessary drawings to design, procure, construct and test the CWS according to the defined schedule; Communicates effectively with other stakeholders and peers within the framework of ITER

	collaboration and the fusion community. Project Construction Phase

Applicant criteria

Level of study	Bachelor or equivalent degree
Diploma	Nuclear, mechanical, process engineering
Level of experience	At least 5 years
Technical experience	- Technical experience in the design and drawing of complex and large piping systems and pressure vessels. - Knowledge of design of piping systems
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
Languages	English (Working)
Specific skills	CATIA, Computer Aided Design, ENOVIA, MS Office standard (Word, Excel, PowerPoint, Outlook)
Others	Excellent knowledge of software applications for development of 3D model and 2D schematics by CATIA-ENOVIA and See-Visio; Knowledge of computer codes for piping stress analysis of and design of the support structures will be an advantage;