Construction Technical Officer - Site and Buildings

**Purpose**

To ensure that the ITER buildings and civil engineering infrastructure are constructed and commissioned in accordance with the ITER requirements; a senior site technical officer is required to work within the Civil Construction and Site Support Office’s Site Layout Section at ITER.

**Major Duties/Responsibilities**

- Prepares control and inspection plans in conjunction with the Civil Construction and Site Support (CCS) Site Layout Section Leader and the ITER Quality Assurance Division;
- Implements control and inspection plans in conjunction and coordination with the ITER Quality Assurance Division;
- Monitors the on-site activities relating to buildings and the civil engineering infrastructure so as to ensure their conformance with the ITER requirements, in particular those relating to health and safety, quality and conformance with approved construction documentation;
- Prepares and follows up with non-conformance notices, in particular the on-site activities relating to the resolution of non-conformances;
- Monitors the on-site activities carried out by the Domestic Agency staff and their appointed representatives including the Architect-Engineer and Safety Coordinator and reports their activities to the CCS Office Site Section Head;
- Takes part in committees and meetings relevant to buildings and civil engineering infrastructure activities on the site;
- Makes contributions to the monthly site report prepared by the CCS Office Site Section Head;
- Works in close collaboration with other CCS Office personnel and participates in regular CCS Office progress meetings;
- Maintains up-to-date knowledge of specific French Regulations pertaining to the construction of nuclear facilities and maintains up-to-date knowledge of general civil engineering practice in the field of concrete and steel buildings, building services and general civil infrastructure;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Qualifications and Experience

- **Education:**
  – Civil Engineering degree or other relevant construction discipline; High School Diploma plus two or more years of study may be considered.

- **Technical experience:**
  – At least 10 years’ experience in site supervision for major civil engineering projects of which at least 2 years must be in the field of Nuclear Installations.

- **Project experience:**
  – Experience working within a large multi-disciplinary construction project;
  – Basic Project Management experience is required.

- **People Management experience:**
  – Experience monitoring the work carried out by skilled construction teams.

- **Social skills:**
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work.

- **Language requirements:**
  – Fluent in English (written and spoken);
  – Some knowledge of French would be considered as an advantage.

- **Computer and IT skills:**
  – Basic experience with Microsoft Word and Excel is required;
  – Some experience with Project scheduling software would be advantageous.

Direct Supervisor and Interfaces

- Reports directly to the Site Layout Section Head within the CCS Office and indirectly to the CCS Office Head and Assistant Head;
- May also be required to report to other CCS Section Leaders and the ITER Quality Assurance Department as required;
- Acts as an interface between the Domestic Agencies’ on-site team, their contractors, and the ITER Organization (in particular the CCS Office).

Authority / Approval Levels

This position has authority and approval levels as defined by the CCS Office Head.

Measures of Effectiveness

- Completes reporting activities in a timely manner and to a high level of quality;
- Identifies, reports and monitors non-conformances in accordance with applicable procedures;
- Communicates in a coherent and effective manner to the hierarchal management, peers and external Organizations.
Purpose

To ensure that all data, drawings and models for the ITER buildings and Site Infrastructure are prepared, managed, stored and issued in a timely and appropriate manner to the necessary project stakeholders including those internal to ITER, the Domestic Agencies and contractors.

Major Duties/Responsibilities

- Works in close collaboration with Civil Construction and Site Support Office (CCS) Section Leaders and ITER Design Office representatives, to implement internal ITER procedures for the production, approval, storage and distribution of 3D Detailed models and Configuration models;
- Ensures the compatibility between the 3D Catia Models, 3D Configuration models and Autocad drawings prepared by the CCS Office and their external partners;
- Ensures the compatibility between the 2D SEE VISIO PFD’s and/or P&ID’s for building system designs with CATIA 3D models and/or Autocad drawings prepared by the CCS Office and their external partners;
- Ensures that external data and drawings provided to the CCS Office are approved in accordance with agreed procedures and schedules;
- Coordinates the overall resource pool available to CCS from the Design Office and via framework contracts to ensure that required resources are available; prepares Design Work Orders for the provision of designers where necessary;
- Coordinates the gathering and input of CCS and/or Domestic Agency design data to the ITER Design Office catalogue and engineering database systems as required;
- Manages the preparation of drawings required for CCS documentation and the documentation for other ITER Departments, where appropriate (e.g. for submissions to French Regulatory Authorities);
- Maintains up-to-date knowledge of applicable ITER procedures relating to drawing production and management;
- Becomes a primary competent user of the ITER Document Management System (IDM) and any other data management systems relevant to CCS activities;
- Is responsible for the management of all drawing approvals and assists in the presentation of formal design reviews for CCS systems;
- Coordinates with the design office of other stakeholders such as the EU Domestic Agency and their contractors;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

Reports to Line Manager: Head of the Civil Construction and Site Support Office (CCS)  
Direct Employment: Required

Job Code: CCS-022  
Grade: G4
• **Education:**
  – Bachelor’s Degree or higher diploma equivalent to 4 years of additional study after High School Diploma, in the Civil, Structural or Mechanical Engineering field or other relevant discipline.

• **Technical experience:**
  – At least 10 years experience in the field of designing (drafting) and design management;
  – Experience in design office management is beneficial.

• **Project experience:**
  – Experience working within a large multi-disciplined construction project;
  – Basic Project Management experience is required.

• **People Management experience:**
  – Experience coordinating small teams of designers.

• **Social skills:**
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work.

• **Language requirements:**
  – Fluent in English (written and spoken);
  – French language skills would be considered an advantage.

• **Computer and IT skills:**
  – Experience with Microsoft Word and Excel is required;
  – Significant experience with Autocad or similar engineering drafting package is required;
  – Some experience with CATIA v5 and/or SEE VISIO would be beneficial.

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**Direct Supervisor and Interfaces**

• Reports to the CCS Office Head;
• Will be required to report to other CCS Section Leaders and the ITER Quality Assurance Department, as required;
• Acts as an interface between the CCS Section Leaders and the ITER Design Office;
• Interfaces with external Organizations in particular the European Domestic Agency and their contractors.

**Authority / Approval Levels**

This position has authority and approval levels as defined by the CCS Office Head.

**Measures of Effectiveness**

• Completes reporting activities in a timely manner and with a high level of quality;
• Completes the implementation of ITER procedures in a timely and effective manner.
• Communicates in a coherent and effective manner to the hierarchal management, peers and external Organizations.
Purpose

Electrical or Power Electronic engineer responsible for the design, procurement and integration of the ITER Coil Power Supplies and Pulsed Power Alternating Current (AC) Distribution, by leading the members of the Coil Power Supply Section, completing the system and component design, developing the technical specifications for the procurement arrangement and managing the activities related to manufacturing, testing, installation, commissioning and plant start up.

Major Duties/Responsibilities

• Is the Responsible Officer for the Coil Power Supplies and Pulsed Power AC Distribution;
• Provides effective leadership for the Section ensuring team members are motivated and constantly developing their skills and experience;
• Ensures the preparation and revision of the Coil Power Supplies and Pulsed Power AC Distribution design and procurement documentation, including the technical specifications and associated support documents for the procurement arrangement of the components;
• Is responsible for the integration and layout of the Coil Power Supplies and Pulsed Power AC Distribution;
• Manages all interfaces within the components of the Coil Power Supplies and Pulsed Power AC Distribution and with the other ITER systems, particularly magnets, plasma control, interlocks, protection systems, buildings and site layout;
• Ensures the consistency of procurement and construction planning;
• Supervises the contributions from the ITER Domestic Agencies, including design activities, manufacturing, testing and installation of the components delivered by the Domestic Agencies;
• Supports the licensing activities and safety assessment related functions in close collaboration with the safety group;
• Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

• Education:
  – Degree at least equivalent to 5-8 years of study after the High School Diploma (ex. Masters or PhD), in Electrical Engineering or other relevant discipline.
• **Technical & Project experience:**
  – At least 15 years’ experience and competent expertise in the design, construction and operation of 400 kV substations, large step down transformers, pulsed power distribution systems, AC/DC conversion plant above 200 MVA and Reactive Power Compensation systems above 200 Mvar;
  – Good knowledge of the design details and technical requirements of Power Supply systems comparable to those required for ITER;
  – Ability to draft and revise technical reports, documentation and project plans;
  – Experience in the preparation of technical specifications for procurement contracts of large electrical components and subsystems;
  – Basic Project Management experience is required;
  – Experience working with Tokamak fusion devices, or large international scientific facilities would be considered an advantage;

• **People Management experience:**
  – At least 10 years’ experience managing projects and teams.

• **Social skills:**
  – Collaborative and positive personality;
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work.

• **Language requirements:**
  – Fluent in English (written and spoken).

• **Computer and IT skills:**
  – Good knowledge of Microsoft Office tools.

**Direct Supervisor and Interfaces**

• Report to the Electrical Power Supply Division Head;
• Interfaces with all other Sections and Departments within the ITER Organization as required.

**Authority / Approval Levels**

This position has authority and approval levels as defined by the DDG for his/her scope of work.

**Measures of Effectiveness**

• Successfully supports ITER Coil Power Supplies and Pulsed Power AC Distribution design, including identification of design changes required and establishing priority levels and means for their implementation;
• Establishes a mechanism for Coil Power Supplies and Pulsed Power AC Distribution design integration and interface with other ITER systems;
• Successfully communicates with other Sections and Departments within the ITER Organization on Coil Power Supplies and Pulsed Power AC Distribution related issues;
• Successfully coordinates and supports the efforts of the ITER Organization and the Domestic Agencies in respect to design, fabrication, installation and commissioning of the ITER Coil Power Supplies and Pulsed Power AC Distribution;
• Successfully supports and motivates the work of the Coil Power Supply Section staff members.
Senior Electrical Engineer
CEP-087

Reports to Line Manager: Steady State Electrical Power Network Section Leader, Electrical Engineering Division, Central Engineering and Plant Support Department

Job Code: CEP-087

Direct Employment: Not Required

Grade: P4

Purpose

To manage and supervise the design integration and procurement activities for the:

1) Management of all power and Interface and Control (I&C) cables that will be installed in the ITER plant, including: design and routing of cable trays, production of cable management handbooks, diagrams, naming/identification rules, cable scheduling, routing, procurement, and installation;

2) ITER earthing and lightning protection systems, including the specific earthing and insulation requirements of the Tokamak components;

To provide engineering support to the Steady State Electrical Power Network Section in the design integration and sub-systems for the distribution of Electrical Power to the consumers of the ITER plant systems.

Major Duties/Responsibilities

- Manages the design, routing and procurement of cable trays;
- Is responsible for the design and procurement of the system for the earthing of the Tokamak components;
- Defines the rules and guidelines for the management, integration and procurement of power and I&C cables;
- Defines the rules and guidelines for management, design integration and monitoring of insulation requirements, EMC, earthing and lighting protection systems.
- Specifies the technical requirements of Computer Aided Design (CAD) and software tools required for the management of cable routing and earthing systems;
- Produces technical specifications and participates in the procurement contract tender process for external engineering support, and the purchase and installation of cables and components for the Tokamak earthing system;
- Manages the work performed by external companies contracted by the ITER Organization;
- Participates in the supervision and coordination of activities related to the design, procurement and installation of cables and components for the Tokamak earthing system that are under the responsibility of the ITER Domestic Agencies.
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Qualifications and Experience

• **Education:**
  – Degree at least equivalent to 4-6 years of study after the High School Diploma (ex. Bachelor’s/Master’s), in Electrical Engineering or other relevant discipline;
  – A Masters degree in Electrical Installations, Project Management, or equivalent would be considered an advantage.

• **Technical & Project experience:**
  – At least 10 years’ experience in the design, procurement and installations of components for electrical power distribution in large science and/or industrial plants comparable with the ITER power distribution systems;
  – At least 3 years’ experience in cable management for large electrical installations comparable with those of ITER;
  – Basic Project Management experience is required;
  – Good knowledge of the EMC directives would be considered an advantage;
  – Experience in the preparation of technical specifications and/or using cable diagram/scheduling tools would be considered an advantage;
  – Experienced in the preparation of technical specifications for database tools would be considered an advantage.

• **Social Skills:**
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work;
  – Collaborative and positive personality.

• **Language requirements:**
  – Very good command of English, both spoken and written.

Direct Supervisor and Interfaces

• Reports to the Steady State Electrical Power Network Section Leader;
• Interfaces with all members of the Electrical Engineering Division to support the excellent integration of the electrical installations.

Authority / Approval Levels

This position has authority and approval levels generally defined by the Steady State Electrical Power Network Section Leader for his/her scope of work.

Measures of Effectiveness

• Successfully supports the design and construction activities of the Electrical Engineering Division;
• Successfully manages the activities related to the management, routing, procurement and installation of power and I&C cables;
• Successfully manages the activities related to the design integration and procurement of earthing and lightning protection systems, including those for the earthing and insulation requirements of the Tokamak components;
• Successfully manages interfaces with other ITER Departments/Division and Domestic Agencies;
• Successfully supports the work of the ITER Organization and the Domestic Agencies;
• Successfully maintains effective communication with all parties delivering subsystems.
Cryogenic Instrumentation and Process Engineer  CEP-111

Reports to Line Manager:  Cryogenic System Section Leader,  Plant Engineering Division,  Central Engineering and Plant Support Department

Direct Employment:  Not required

Job Code:  CEP-111

Grade:  P4

Purpose

To define, integrate, procure and commission low temperature-specific instrumentation for the ITER cryogenic system;
To participate in the functional analysis and process control of cryoplants, cryolines and cryogenic distribution boxes installed inside the Tokamak building for the forced flow cooling of magnets and cryopumps;
To identify and detail the dedicated hardwired interlocks for the ITER cryogenic system’s safe operation;
To determine the requirements and interfaces of the ITER-wide cryogenic process, instrumentation and controls.

Major Duties/Responsibilities

• Establishes and/or reviews the Process and Instrumentation diagram in order to assess the required instrumentation;
• Identifies the requirements and environmental constraints for cryogenic instrumentation;
• Proposes engineering solutions for the measurement of cryogenic control and diagnostic parameters;
• Writes the technical specifications for cryogenic instrumentation to measure temperatures, pressure, flow and liquid level of cryogenic fluids down to 3.5 K;
• Specifies the technical requirements for cryogenic valves and heaters;
• Carries-out the functional analysis and process control for the liquid helium, liquid nitrogen and cryogenic distribution systems;
• Designs the dedicated hardwired interlocks necessary for ITER cryogenic system’s safe operation and shutdown sequences;
• Develops the required testing and commissioning program for the instrumentation and process control system;
• Establishes the operation and maintenance procedures as well as spare requirements;
• Supervises and monitors the procurement of cryogenic instrumentation and control components;
• Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.
Qualifications and Experience

- **Education:**
  - Degree at least equivalent to 5-8 years of study after the High School Diploma (ex. Masters), in Cryogenics, Instrumentation and Control, Process Engineering or other relevant discipline.

- **Technical & Project Experience:**
  - At least 10 years’ experience in the development, design, procurement and commissioning of instrumentation and process controls for a large cryogenic system intended for fusion or accelerator applications;
  - Excellent knowledge in world market and associated R&D for specific applications of industrially proven cryogenic equipment, instrumentation and controls;
  - Good knowledge of the design code and standards;
  - Excellent knowledge of process engineering and the analysis of operating modes for large cryogenic distribution systems;
  - Significant practical knowledge of factory acceptance tests and the commissioning of complex equipment;
  - Basic Project Management experience is also required.

- **Social Skills:**
  - Ability to develop and maintain effective international relations so as to efficiently perform tasks in a multicultural environment, covering the international project;
  - Ability to work in a team and to promote team work.

- **Language requirements:**
  - Excellent communication skills in written and spoken English.

Direct Supervisor and Interfaces

- Reports to the Cryogenic System Section Leader;
- Interfaces with designers for magnets, the Tokamak 80 K thermal shields, the cryo-vacuum pumps, and the buildings to support integration.

Authority / Approval Levels

This position has authority and approval defined by the Section Leader for his/her work.

Measures of Effectiveness

- Successfully defines and implements the concept of instrumentation and process control;
- Successfully manages interfaces between the cryogenic system and cryogenic users;
- Successfully manages plans for procurement, installation, tests and commissioning;
- Successfully maintains effective communication with all parties delivering subsystems.
Plant Integration Technical Engineer

Reports to Line Manager: Tritium Plant Section Leader,
Fuel Cycle Engineering Division,
Central Engineering and Plant Support Department

Direct Employment: Required

Job Code: CEP-114

Grade: G5

Purpose

To support the Plant Integration activities: the interface management and construction of the buildings and building systems; equipment support; penetrations; cable tray management; utilities and auxiliary systems such as glove boxes, heating, ventilation and air conditioning (HVAC), chilled water, breathing air and operation with self-contained breathing apparatus (SCBA), etc.

Major Duties/Responsibilities

- Supports the ITER Fuel Cycle System Engineers;
- Prepares the schematic drawings, process flow diagrams, and descriptive technical documentation for the Fuel Cycle interfaces, building support services and auxiliary systems;
- Supports the distributed detrition system piping network integration and interfaces;
- Assists the integration activities and system interface function assessments including equipment support for the Tritium Plant and other related systems (e.g. Radiological Monitoring, Vacuum Pumping Systems and the Test Blanket Module);
- Contributes to the building and glove box layout, and the space utilization studies, assembly and installation studies, building and glove box penetrations and associated design;
- Participates in the design integration of electrical cubicles and power & instrumentation cable distribution to support building construction;
- Provides technical support in the preparation of design work orders and technical specifications for external contracts to support building construction;
- Maintains strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

- Education:
  - Degree at least equivalent to 3-4 years of study after the High School Diploma (ex. Bachelors), in Nuclear Technology, Mechanical or Chemical Engineering, or other related discipline.
• **Technical experience:**
  – At least 10 years’ experience in the development, design, manufacturing, commissioning and operation of plant systems and interfaces with a nuclear facility, preferably a tritium handling facility;
  – Knowledge of plant interface and auxiliary systems, such as plant utilities, HVAC, equipment support and building penetrations;
  – Experience and knowledge of radiological glove box applications would be a plus.

• **Social Skills:**
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work.

• **Language requirements:**
  – Fluent in English (written and spoken).

• **Computer and IT skills:**
  – Very good command of the basic Microsoft Office Package;
  – Previous Computer Aided Design (CAD) System experience would be advantageous.

**Direct Supervisor and Interfaces**

• Reports to the Tritium Plant Section Leader of the Fuel Cycle Engineering Division (FCD);
• Receives direction from System Engineers within the Tritium Plant Section;
• Closely cooperates with other groups within the FCD;
• Interfaces intermittently with Domestic Agencies (DAs) having Tritium Plant procurement packages and with the Industry developing the interface components and systems;
• Closely cooperates with the ITER Design Office.

**Authority / Approval Levels**

This position has authority and approval levels generally defined by the Tritium Plant Section Leader for his / her scope of work.

**Measures of Effectiveness**

• Successfully supports the ITER Tritium Plant Integration activities;
• Prepares in a timely manner the material required for the development and design of the Tritium plant interfaces and systems;
• Successfully communicates with the Tritium Plant Section, other groups in the Fuel Cycle Division and with the DA’s.
Cryogenic Process and Integration Technical Engineer

Reports to Line Manager: Cryogenic System Section Leader, Plant Engineering Division, Central Engineering and Plant Support Department

Direct Employment: Required

Job Code: CEP-115

Grade: G4

Purpose

To participate in the design, layout, procurement, installation and testing of the cryogenic system components for the ITER Tokamak; this includes the cryoplants and cryogenic distribution boxes for forced flow cooling of ITER magnets and cryopumps.

To provide technical support for the study of interfaces and the preparation of assembly, integration and test procedures for the commissioning and validation program.

Major Duties/Responsibilities

• Revises and improves the cryogenic system process diagrams and design interfaces;
• Develops the detailed layout, conceptual design and integration studies for the cryogenic distribution boxes;
• Develops the detailed layout, conceptual design and integration studies for the cryoplants;
• Carries out the layout, routing and integration studies for the cryogenic transfer lines;
• Defines the technical specifications and revises the Project Integration documents related to the cryogenic system;
• Creates the interface documents for cryogenic components and end users (magnets, thermal shields, cryopumps, etc.);
• Elaborates the programs and schedules to build, test and commission the cryogenic system;
• Monitors the procurement of cryogenic components;
• Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

• Education:
  – Degree at least equivalent to 3-4 years of study after the High School Diploma (ex. Bachelor of Science or High Technical Degree), in cryogenics, Mechanical Engineering or other relevant discipline.
• **Technical Experience:**
  – At least 10 years’ experience in the development, design, procurement and commissioning of cryogenic components and installations for a large cryogenic system for fusion or accelerator applications;
  – Working knowledge in world market and associated R&D for specific applications of industrially proven cryogenic equipment, instrumentation and controls;
  – Working knowledge of design codes and standards;
  – Excellent knowledge of process engineering and operating mode analysis for large cryogenic distribution systems;
  – Significant practical knowledge of factory acceptance tests and commissioning of complex cryogenic equipment;
  – Good working knowledge of fabrication, welding and leak testing techniques.

• **Social Skills:**
  – Ability to develop and maintain effective international relations so as to efficiently perform tasks in a multicultural environment, covering the international project;
  – Ability to work in a team and to promote team work.

• **Language requirements:**
  – Fluent in English (written and spoken).

**Direct Supervisor and Interfaces**

• Reports to the Cryogenic System Section Leader;
• Interfaces with designers for magnets, the Tokamak 80 K thermal shields, the cryo-vacuum pumps, the cryoplant and the buildings to support integration.

**Authority / Approval Levels**

This position has authority and approval defined by the Section Leader for his/her work.

**Measures of Effectiveness**

• Successfully defines and implements the cryoplant, cryolines and cryodistribution systems’ conceptual design;
• Successfully participates in the management of interfaces between the cryogenic system and cryogenic users;
• Successfully contributes to managing the plans for installation, testing and commissioning;
• Successfully maintains effective communication with all parties delivering subsystems.
Lead Cost Estimator

Purpose

To provide the single-point of responsibility and accountability for the cost estimating processes and systems, the cost and credit estimates and studies, analysis of actual cost data and variance, calculation and analysis of cost contingency, and the integration of cost engineering activities across the Organization. The Lead Estimator will supervise the work of cost engineers and estimators that serves the entire project organisation.

Major Duties/Responsibilities

- Is accountable to the Project Office Head for delivery, maintenance, and revision of high quality cost/credit estimates for all ITER Organization and Domestic Agency activities in the lifecycle of the project. This includes full basis of estimate documentation that is consistent with industry best practice for large nuclear construction projects, and a licensed nuclear reactor.
- Is responsible to ensure that cost estimates, cost studies and other cost engineering deliverables are completed in accordance with applicable IO programme objectives, procedures, instructions and guidelines;
- Is accountable to Responsible Officers and project managers to ensure cost estimating and cost engineering resources (personnel, systems and documentation) support IO business requirements and the timely completion of required deliverables;
- Is responsible to each cost engineer and estimator to ensure availability and suitability of all necessary systems and infrastructure, and must also ensure adequate training and instruction is provided on an ongoing basis;
- Manages the timely completion of Project Office actions, requirements, instructions, procedures and guidance to the appropriate site personnel; when required prepares and issues lower-level supplemental instructions and guidance;
- Prepares and manages site working plans and schedules to prepare and deliver cost engineering/estimating deliverables; ensures all deliverables are reviewed for accuracy, completeness and quality before submission;
- Prepares and implements a site cost estimating/cost engineering employee training and professional development program that is consistent with IO agreed standards and programmes;
- Develops and maintains terms of reference for cost estimating/cost engineering positions for use in recruiting and subcontractor selection; ensures only qualified and capable individuals (IO staff and subcontractors) are acquired and retained;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Reports to Line Manager:  Project Control Section Leader, Project Management Division, Project Office

Job Code: PRO-086

Direct Employment: Not Required

Grade: P4
Qualifications and Experience

- **Education:**
  - Degree at least equivalent to 4-6 years of study after the High School Diploma in Business Management, Engineering or related fields;
  - Certified by the Association for the Advancement of Cost Engineering qualification (or equivalent) is desirable, but not required.

- **Technical and Project experience:**
  - At least 10 years of progressive responsibility in the area of cost estimating/cost engineering on project work;
  - 4 to 5 years of nuclear project experience;
  - Highly proficient in all of the key areas of cost engineering and estimating, including the preparation and review of approximate, preliminary, definitive and detailed cost estimates, and knowledgeable about the generally accepted industry best practice in this area;
  - Extensive knowledge of commercial contracting practices, and experience in the resolution of claims and disputes;
  - Knowledgeable in the areas of project management, earned value performance measurement, risk management, tendering and contract administration, finance, budgeting, cost collection and job tracking;
  - Demonstrated ability to manage the development of estimating systems that are fully integrated with other project management systems such as Primavera, Cobra, Pertmaster, and SAP.

- **People Management experience:**
  - 3 to 5 years of experience is required, in particular experience of supervising an international team is highly desirable.

- **Social Skills:**
  - Ability to work effectively in a multi-cultural environment;
  - Ability to work in a team and to promote team work;
  - Ability to apply knowledge and original thinking to problem solving and issue resolution.

- **Language requirements:**
  - Fluent in English (written and spoken); additional language skills would be desired.

- **Computer and IT skills:**
  - Highly proficient in the use of commercial estimating software (Win Estimator preferred);
  - Experience and knowledge of other key systems used by ITER is highly desirable - Primavera V6, SAP, Cobra, and Pertmaster.

Direct Supervisor and Interfaces

- Reports to the Head of the Project Office.

Authority / Approval Levels

This position has authority and approval levels as defined by the Head of the Project Office for his/her scope of work.

Measures of Effectiveness

- Independent validation of cost estimates;
- Accuracy of estimates as compared to actual cost as shown in cost performance reports;
- Demonstrated adequacy of cost contingency to meet uncertainty and event risk demands.
Lead Quality Assurance Engineer

Reports to Line Manager: Head of the Quality Assurance Division, Safety and Security Department

Direct Employment: Required

Job Code: SAS-014
Grade: P4

Purpose

To provide quality assurance leadership and interfaces with the ITER Project Organization and particularly the ITER Project Office;
To provide the management back-up for the Quality Assurance Division Head in implementation of the ITER Quality Assurance (QA) Program.

Major Duties/Responsibilities

- Ensures the ITER QA requirements are applied to all areas of the Project;
- Assists the Project Office Head and the Section Leaders to define and manage the ITER “Management and Quality Program”;
- Participates in the development and maintenance of an Integrated Management System;
- Oversees the process development and maintenance of the Management & Quality Program website;
- Contributes to the development and implementation of Quality Training Programs;
- Performs quality related activities as directed by the QA Division Head;
- Takes on the role of acting QA Division Head as required;
- Participates in internal and external surveillance audits;
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

- **Education:**
  - Degree at least equivalent to 3-4 years of study after the High School Diploma, in a scientific or technical field.
- **Technical experience:**
  - At least 10 years’ proven experience in QA management;
  - Experience in the application of International Quality Standards;
  - Practical experience in the development of Quality Management Process systems;
  - Experience in developing and implementing quality training programs;
  - Experience working with Integrated Management Systems;
  - Inspection experience is desirable;
  - Experience in the implementation of quality systems in the nuclear industry is desirable;
  - Audit experience is desirable.
• **People Management experience:**
  – People management skills are essential.

• **Social Skills:**
  – Ability to be flexible in a complex working environment
  – Ability to work effectively in a multi-cultural environment;
  – Ability to work in a team and to promote team work.

• **Language requirements:**
  – Fluent in English (written and spoken).

**Direct Supervisor and Interfaces**

• Reports to the ITER QA Division Head;
• Interacts with members of the ITER Organization and Domestic Agency Personnel as required.

**Authority / Approval Levels**

This position has authority and approval levels generally defined by the ITER QA Division Head for his/her scope of work.

**Measures of Effectiveness**

• Provides effective monitoring of the ITER Organization’s compliance with the QA Program;
• Manages the ITER Quality Training Program;
• Provides evidence of the Domestic Agencies’ compliance with the ITER QA Program.
Quality Assurance Civil Engineer

Purpose

To provide quality support to the ITER Civil Construction and Site Support (CCS) Office in all matters related to the construction, Security, Safety, and Quality Assurance (QA) programs. This includes access control; worker, equipment and vehicle safety; monitoring the construction contractors Quality Assurance programs; inspecting the site fire protection systems; emergency procedures, equipment and systems; and assisting in defining and documenting the interfaces between these services and the related technical systems.

Major Duties/Responsibilities

- Represents the ITER Quality Assurance Division in support of CCS activities;
- Supports CCS in all matters related to Civil Construction safety and QA activities related to the Cadarache site;
- Assists in coordinating the worker safety interfaces between the on-site construction and the technical subsystem responsible officers;
- Monitors the contractors QA and Safety Program with the Architect Engineer, main construction and subcontractors;
- Helps manage construction safety and QA documentation;
- Identifies construction safety risks and the appropriate mitigation and management of such risks;
- Participates in internal and external surveillance audits;
- Performs quality related activities as directed by the Head of Quality Assurance Division.
- Shows strong commitment to the ITER Safety Program and enforces it through individual behaviour and throughout the ITER Organization;
- Maintains a strong commitment to the implementation and perpetuation of ITER values and ethics;

Qualifications and Experience

- **Education:**
  - Degree at least equivalent to 3-4 years of study after the High School Diploma, in Civil Engineering or other related discipline.
• **Technical experience:**
  – At least 10 years’ experience in the construction of large technical or scientific facilities and, in particular, in the successful completion of large civil construction facilities;
  – Comprehensive knowledge of quality and environmental standards;
  – Experience in writing quality procedures;
  – Effective written and oral skills;
  – Knowledge of licensing procedures and legal environmental requirements in construction is desired;
  – Experience in the implementation of quality systems in the fusion industry is desired;
  – Audit experience is desired.
• **Project experience:**
  – Experience in effective QA management and implementation is essential;
  – Expertise in interface management with technically complex systems is desired.
• **Social Skills:**
  – Ability to work effectively in a multi-cultural environment.
• **Language requirements:**
  – Excellent knowledge of written and spoken English is essential.

### Direct Supervisor and Interfaces

- Reports to the Head of the ITER Quality Assurance Division;
- Interacts with members of the ITER Team and Domestic Agency personnel as required;
- Interfaces with the construction design team on safety requirements and with the construction manager on cost effective implementation.

### Authority / Approval Levels

This position has authority and approval levels generally defined by the Head of the ITER QA Division for his/her scope of work.

### Measures of Effectiveness

- Successfully manages the quality interface(s) between the construction site activities and the design teams of the site layout and associated plant facilities, including those temporary facilities required during construction and installation;
- Effectively supports the development and maintenance of interface documentation;
- Successfully manages the interface(s) with the Architect Engineer and the European Legal Entity.
Magnet Superconducting Auxiliaries Support Technician

Reports to Line Manager: Superconductor Systems and Auxiliaries Section Leader, Magnet Division, Tokamak Department

Job Code: TKM-097

Direct Employment: Required

Grade: G4

Purpose

To work under the supervision of a professional magnet engineer;
To assist in developing magnet feeder designs, integrating feeders with the coils, monitoring feeder manufacturing and maintaining feeder technical documentation.

Major Duties/Responsibilities

- Assists in the preparation and updating of feeder design, procurement and quality control documentation (design descriptions, interface control documents, procurement and quality control documents, etc.);
- Participates in feeder design activities (developing detailed designs, validating designs with the help of analysis experts, making and checking feeder drawings, checking interfaces between the magnets and external interfaces with cryostat and assembly);
- Contributes to monitoring feeder procurement and assembly activities (visits to production facilities, processing of deviation requests, assessment of quality control reports);
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience

- **Education:**
  - Degree at least equivalent to 2-4 years of study after the High School Diploma, in Mechanical Engineering or other related discipline.
- **Technical & Project experience:**
  - At least 5 years’ experience as a technical designer or project engineer in a large multi-disciplinary project or institute;
  - Experience with cryogenic engineering;
  - Experience with high voltage systems;
  - Experience with mechanical design and the preparation of engineering drawings;
  - Demonstrated ability to write high quality technical reports.
- **Social Skills:**
  - Ability to work effectively in a multi-cultural environment;
  - Ability to work in a team and to promote team work.
• **Language requirements:**
  – Fluent in English (written and spoken).
• **Computer and IT skills:**
  – Familiarity with Windows based office programs;
  – Familiar with CAD systems.

**Direct Supervisor and Interfaces**

• Reports to the Superconductor Systems and Auxiliaries Section Leader;
• Interfaces and contributes to work in other Magnet Division Sections, as required.

**Authority / Approval Levels**

This position has authority and approval levels generally defined by the DDG for the Tokamak Department for his/her scope of work.

**Measures of Effectiveness**

• Provides efficient and high quality service to the Magnet Division’s members;
• Acts in a collaborative manner with all members of the Division and with other ITER Divisions and Departments.