

Call For Expertise

Lifting & Handling Support for the Machine Assembly and Installation Section

Technical Specifications

ABSTRACT

This contract covers the provision of specialised Lifting & Handling support for the ITER Machine Assembly and Installation (MAI) Section.

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1. ABSTRACT

This contract covers the provision of specialist Lifting & Handling support for the ITER Machine Assembly and Installation (MAI) Section.

2. BACKGROUND AND OBJECTIVE

2.1 The ITER project

The ITER project aims to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes and to gain the knowledge necessary for the design of the next-stage device, DEMO, or the DEMOnstration fusion power plant.

Receiving 50MW of input power, the ITER Machine is designed to produce 500 MW of fusion power for extended periods of time. This represents ten times more than the input power needed to keep the plasma at temperature. It will therefore be the first fusion experiment to produce net energy. It will also test a number of key technologies, including heating, control, and the diagnostics and remote maintenance that will be needed for DEMO.

Further information can be found on the ITER website (<http://www.iter.org>) and also at the web pages of the ITER Parties that can be accessed via the ITER website.

2.2 The ITER Organization

ITER is a joint international research and development project for which initial construction activities have recently started.

The seven Members of the ITER Organization are the European Union (represented by EURATOM), Japan, The People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA. ITER will be constructed in Europe, at Cadarache, in southern France, where the ITER Organization (IO) has its headquarters.

The Members of the ITER Organization will bear the cost of the project through its 10-year construction phase, and its 20-year operational phase before decommissioning. With respect to the construction of the ITER machine, most of the components will be contributed by the Members as in-kind contributions. The remaining investment will be via cash contributions from the members.

2.3 Machine Assembly and Installation section – The Mission

The mission of the Machine Assembly and Installation section (MAI) is to assemble the ITER machine, to provide planning, oversight and to undertake the installation of plant systems. In detail, the MAI section is charged to:

- provide design direction and advice, and be responsible for the approval of all plant system designs from the aspect of assembly and installation,
- design assembly tools, write procedures and prepare schedules for the assembly of the machine, undertake the assembly of the machine, undertake the Tokamak system installations, ensuring close coordination with the relevant Department and system Responsible Officers;
- define the integrated assembly and installation plan and approve plant system installation procedures and plans,

- define and implement a global alignment and metrology plan for ITER, including an appropriate site datum network,
- define and coordinate the implementation of an Integrated Logistics Support strategy for ITER to ensure lifecycle management of plant systems, components, spares and facilities: from design, through construction, operation and maintenance,
- coordinate the global transport, reception, handling and storage of plant system components, spares and tools.

2.4 Objective of the Contract

The objective of this contract is to provide the MAI section with specialist Lifting & Handling support, in the form of an appropriately qualified and experienced Lifting & Handling expert (hereafter known as the Lifting & Handling Engineer). The Lifting & Handling Engineer will be deployed in close support on the ITER site, Cadarache, France, to complete the scope of work (section 3) that will include the preparation of the ITER Lifting & Handling (works) contract, providing expertise and guidance throughout the tender process, and to follow up the contracts.

Under this contract the Lifting & Handling Engineer will also provide expertise and guidance on general Lifting & Handling matters. With reference to the Mission Statement contained in section 2.3 of this document, guidance could be required in support of any of the charges of the section, or in respect of any Lifting & Handling related matter required by the Leader of the MAI section.

3. SCOPE OF WORK

The scope of work includes, but shall not necessarily be limited to:

- providing advice and expertise on any aspects related to Lifting & Handling operations as required by the Leader of the Machine Assembly and Installation section;
- preparation (production of Tender Documentation) and follow up (management) of the ITER Lifting & Handling Contract through all phases;
- participation in the preparation, and tendering of any other contracts with Lifting & Handling content;
- participation in the development of Assembly/Installation Strategies, Plans, and Procedures and ensure compliance of the associated Lifting & Handling activities with all applicable codes, standards and QA requirements;
- development of schedules, resource estimates and cost estimates for Lifting & Handling activities;
- preparation, editing and review of documents in the English language, including documents in connection with manufacturing, construction, testing, codes and standards.

4. ESTIMATED DURATION

The contract duration shall be for an initial period of 12 months with an option for an additional 12 months, and shall cover 220 working days per year, in accordance with the working practices of ITER.

5. WORK ARRANGEMENTS AND ASSIGNMENTS

The Lifting & Handling Engineer's full-time presence at the ITER site is necessary for the effective performance of his duties.

Details of work to be performed by the Lifting & Handling Engineer will be specified as needs arise by the Technical Responsible Officer mentioned in the contract, or his authorized deputy.

Each work task will be individually specified in consultation with the contract Lifting & Handling Engineer and a deliverable date will be agreed.

6. LIST OF DELIVERABLES AND DUE DATES

Each package of work to be performed will be discussed with the Lifting & Handling Engineer before its commencement, and a specification for the work package, schedule and form of deliverables agreed.

A monthly progress report shall be submitted and it shall reflect the agreed deliverables for that month.

7. ACCEPTANCE CRITERIA

All deliverables will be subject to the approval of the Technical Responsible Officer mentioned in the contract, or his authorized deputy.

8. WORK MONITORING / MEETING SCHEDULE

Completion of work items will be confirmed by the Technical Responsible Officer mentioned in the contract, or his authorized deputy. For longer tasks an interim monitoring point may be defined.

9. REQUIRED QUALIFICATIONS AND EXPERIENCE

The contract Lifting & Handling Engineer shall have:

- A university degree in Mechanical Engineering or a related discipline, or combination of qualifications and experience acceptable by ITER;
- Recent relevant experience (ideally a minimum of 15 years) covering heavy lifting in large and complex Construction Projects: supervising and managing site lifting operations, maintenance, inspection & load testing activities for Lifting Equipment including Pedestal Cranes, Gantry Cranes, Runway beams, Mobile Cranes, Crawler Cranes, Fork Lifts, Winches, Electric Hoists, Pull Lifts, Chain Blocks, Wire Rope Slings, Webbing Slings, Chain Slings, Shackles, Eye Bolts, Winches, Containers / Baskets etc.;
- Broad based knowledge and conversant with international standards relevant to lifting equipment and Operations e.g. API, ASME, BS, ISO, DIN, DNV, LR, LOLER and the like;
- Knowledge of the Health and Safety at work guidelines relating to heavy lifts & Statutory Acts, Legislations and Contracts Management of Lifting Equipment;

- Hold current LEEA Diploma qualification or equivalent for Specialist Lifting Services;
- Fluent in the English language, written and spoken;
- Demonstrated ability to develop innovative solutions to complex lifting/handling problems;
- Excellent organizational, problem solving, contractors and TPIs handling and communication skills;
- Knowledge of Quality Assurance systems and their practical application;

10. Quality Assurance (QA) Requirement

The Contractor shall work in accordance with the standards set out by ITER QA.

The organisation conducting these activities must have an ITER approved QA Program or an ISO 9001 accredited quality system.

Prior to commencement of the task, a Quality Plan [Quality Plan \(22MFMW\)](#) must be submitted for IO approval giving evidence of the above and describing the organisation for this task; the skill of workers involved; and any anticipated sub-contractors.

Deviations and Non-conformities will follow the procedure detailed in IO document [MQP Deviations and Non Conformities \(22F53X\)](#)

Documentation developed as the result of this task shall be retained by the performer of the task for a minimum of 5 years and then may be discarded at the discretion of the IO. The use of computer software to perform a safety basis task activity such as analysis and/or modelling, etc. shall be reviewed and approved by the IO prior to its use, it should fulfil IO document on Quality Assurance for ITER Safety Codes [Quality Assurance for ITER Safety Codes \(258LKL\)](#).