

Technical Specifications (In-Cash Procurement)

Technical Specification and Statement of Work - Services for Commissioning support

This document is a technical specification and statement of work for Commissioning Support for ITER Operations Division. It defines the scope of the support and services to be provided, the requirements for those services and the process of defining deliverables



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1 Purpose

This document is a technical specification and statement of work for Commissioning Support for ITER Operations Division. It defines the scope of the support and services to be provided, the requirements for those services and the process of defining deliverables. The document describes the technical and managerial scope linked to a Service Contract to be awarded to a Contractor selected through a competitive process. Finally, this document provides the technical requirements necessary for potential bidders to prepare a tender.

2 Scope of work

The scope of work is a full-time service covering the commissioning of ITER process systems including Electro-Mechanical & Field I&C Commissioning execution, writing and preparation of Commissioning, Operations and Maintenance documentation and preparation of Commissioning related tasks.

The requested service for Commissioning field tasks covers all activities required to demonstrate the functions of the Systems as defined in the related Systems Commissioning Plans and Systems Design Description Document, it is including but not limited to the following type of works: Valves Test, MCC/DB Cubicles Test, Sensors Test, Flushing Tests, I&C Cubicles Test, Input-output test, Motor test, Pump test, Flow balancing, etc.

This technical specification aims to set up a service contract based on electro-mechanical & field I&C Commissioning, Testing and Writing of Commissioning, Operations or Maintenance documentation of ITER systems.

Works are expected to be performed on the ITER worksite.

3 Definitions and acronyms

A list of ITER abbreviations used throughout the ITER Project can be found at IDM:

<https://user.iter.org/?uid=2MU6W5>

4 Regulation/standard and References document.

4.1 Regulation and certification

- **Decree 2010-1017** obligation of the contracting authority
- **Decree 2010-1016** obligation of the employers
- **Decree 2010-1118** operation on (or in the vicinity) an electrical installation and the authorization
- **Decree 2010-1018** various provisions relating to the prevention of electrical hazard in workplace
- **Order of the 07/02/2012**: Safety for the INB

4.2 References documents

The list of applicable document for OHS is available in the PGC Annex 0 ([42FYPZ](#)).



The main references documents are listed below; other missing references documents such as Working Instructions, templates and How to will be specified by IO during the execution of the contract.

- [Provisions for Implementation of the Generic Safety Requirements by the External Interveners](#) (ITER_D_SBSTBM).
- ITER internal regulation (<https://user.iter.org/default.aspx?uid=27WDZW>)
- PGC Annex 0 - List of the applicable annexes to the PGC SPS Volume 1 (<https://user.iter.org/default.aspx?uid=42FYPZ>)
- PGC Annex 1 - Specific measures for preventing the spread of Covid-19 on the worksite (<https://user.iter.org/default.aspx?uid=36M2XY>).
- ITER Site Development Plan (UYRHXX v1.1)
- Quality Assurance for ITER Safety Codes (ITER_D_258LKL)
- Procurement Requirements for Producing a Quality Plan (ITER_D_22MFMW)
- ITER Procurement Quality Requirements (ITER_D_22MFG4)
- ITER Organization Environmental Management System doc 1: PMAE v1 (ITER_D_97W4PN)
- Environmental requirements (ITER_D_97WRFP)
- Alert procedure on ITER construction site ([ITER_D_7LB8NY](#)). Information spread by PGC volume 1.
- Procurement Quality Requirements ([ITER_D_22MFG4](#))
- Requirements for Producing a Quality Plan ([ITER_D_22MFMW](#))
- ITER Site access Procedure ([ITER_D_S3893D](#))
- PGC SPS Vol. 1 - IO&F4E (ITER_D_T6V4RP)
- Contractor Safety Management Procedure ([Q2GBJF](#)) (only valid for HQ, storage Area)
- Storage Areas Access Procedure (ITER_D_V9TVBS)
- Requirements for Producing a Contractors Release Note (ITER_D_22F52F)
- Procedure for the management of Deviation Request (ITER_D_2LZJHB)
- Procedure for management of Nonconformities (ITER_D_22F53X)
- Commissioning Management Procedure (ITER_D_VH9352)
- ITER Commissioning Plan (ITER_D_US7NT8)
- Template for Specific Health and Safety Plans (PPSPS) – bilingual version (ITER_D_K7C6SZ)
- ITER Site Permit to Work Overarching Procedure ([3E8289](#)) (mother procedure)
- How to - Permit to test in commissioning and operation ([5GEK29](#)) (daughter procedure)
- How to - Lock-out Tag-out in commissioning and operation ([4YJZM2](#))
- Preparing Commissioning Plans and Test Procedures (X8KGJE)
- Working Instruction for the Preparation of System Maintenance & In-Service Inspection Plans (YH3TFW)

5 Contract Start and Duration

The services are scheduled to start in July 2022. The total duration of the contract is 2 years with an optional extension for one (1) additional year.



6 Works description

This summary covers the technical services to be provided to IO under the scope of this contract.

1/ Test & Commissioning activities:

The Contractor's services shall include all services and supervision necessary for the performance of Test & Commissioning works as defined in the Systems Commissioning Plans (Testing, Commissioning, Troubleshooting, etc.) such as but not limited to the following:

- MCC/DB Cubicles test
- I&C Cubicle test
- Interlocks test
- Visual Controls
- Valves test
- Sensors test
- Heaters test
- Input-Output test
- Pump test
- Uncoupled motor test
- Flushing test
- Leak-tightness test
- Tank level test
- Heat Exchanger test
- Flow control & balancing test
- Temperature and Pressure control test
- Operating mode/Functional test
- Vibration test

For performance of Test & Commissioning activities, the Contractor will follow approved Test Procedures as requested in the Schedule of activities by IO. The Contractor is also requested to prepare in a timely manner its required Permit to Work and associated LOTO (mechanical, electrical, etc.). Those blockings will be reviewed, approved and executed by IO for issuance of the PTW and safe performance of the works.

2/ Commissioning, Operation & Maintenance documentation:

The Contractor's services shall include all services and supervision necessary for the issuance of Documentation as requested in the Schedule of activities and list of deliverables communicated monthly by IO. The list of documents is such but not limited to the following:

- Commissioning documentation: Test Procedures, Test Reports
- Operation documentation: Operating Procedures
- Maintenance documentation: Maintenance and Inspection Plans

6.1 Responsibilities

The responsibilities between the Parties is summarised in Table 1 (below) and is further detailed in the following sections.



Activity	IO	Contractor
A- Schedule of Activities and list of deliverables	R	A
B-Commissioning/Operation/Maintenance Documentation		
Requirements and Design Inputs (SCP, DDD, etc.)	R	
Writing, update and issuance of Commissioning, Operation, Maintenance Documentation (Test Procedures, etc.)	A	R
C-Test & Commissioning activities		
Permit to work preparation	A	R
Blockings preparation	A	R
Tools and Equipment	R	A
Blocking execution and Permit to work issuance	R	
Site Commissioning activities (performance of tests and troubleshooting)	A	R
Inputs for change management (red marked drawings, procedures, design documents, etc.)	A	R
Test Results & Reports	A	R
Final Acceptance	A	R

Table 1 Summary of the Responsibilities between the IO and the Contractor

R = Responsible for organizing, performing and for the content

A = Review/Comment/Accept/Approve

The Contractor will provide specialist resources and experts. This personnel shall be located at the ITER Organization site, be fully dedicated to performing the services agreed and not work for third parties other than the ITER Organization until the Contract is completed or terminated.

The Contractor warrants, represents and undertakes that:

1. The Contractor will provide the services promptly and with all due skill, care and diligence, in a good and workmanlike manner and otherwise in line with best practice within the Nuclear industry;
2. Contractor's personnel will possess the qualifications, professional competence and experience to carry out such services in accordance with best practice within the industry;
3. The Contractor will be responsible for maintaining such insurance policies in connection with the provision of the Services as may be appropriate or as the ITER Organization may require;
4. Contractor's personnel will be bound by the rules and regulations governing IO safety and security and shall provide the required health and safety plans, such a PPSPS and a prevention plan following templates [RD2] and [RD12]. Certified training on "Nuclear Safety Order 1984" may optionally be required;



5. The Contractor will name one person at the Contractor premises or headquarters who will be the supervisor of the contracted manpower. The Contract supervising IO-RO must be able to contact the Contractor's supervisor person directly without passing through contracted personnel.

The ITER Organization shall make available to the dedicated Contractor's personnel located on IO site at Cadarache:

1. Relevant documentation, information, data and any specialized equipment necessary for the Contractor to perform its functions under this Scope of Work;
2. A safe work area that meets the generally-accepted requirements for the satisfactory execution of the Services;
3. Access to the premises and to the dedicated work areas;
4. Any necessary and appropriate worksite related safety training.

6.2 Documentation

All documents prepared by the Contractor shall be reviewed and approved by IO before any performance of the works. Comments provided by IO on submitted documents must be taken into account by the Contractor, the document will not be considered as finalized until IO approves it. Within the scope of this contract, the Contractor will be requested to issue Commissioning, Operations, Maintenance documentation according to existing templates as requested by IO and defined in the section above.

In the frame of this service contract, the Contractor may be required to produce or provide inputs (red marked drawings, procedures, etc.) for Non-Conformance Reports or Operations Change Requests as defined in the applicable procedure.

Test Reports redacted by the Contractor can be for tests performed by the Supplier or others.

6.3 Location

Due to the nature of the works to be performed, the team must be permanently located on ITER site and the defined office spaces.

6.4 Staffing & Competencies

The Contractor's team is expected to be fulltime on-site and composed of three (3) Commissioning Technicians and (1) Contract Responsible Officer being the Contractor's Site Responsible and entry point for IO. The Contract Responsible Officer is expected to perform the various Commissioning activities alongside with the Commissioning Technicians.

The Contractor's team is expected to have electro-mechanical-I&C & Commissioning experience:

- Commissioning Technicians shall have a minimum of a relevant Technical Degree and experience (Electrical-Mechanical-I&C Commissioning)
- The Contract Responsible Officer is expected to have a relevant engineering degree (mechanical, electrical or similar) and at least 7 to 10 years of relevant experience including a Commissioning background.



The required competencies for above mentioned team include:

1. Electrical certificates needed to work in LV electrical installation;
2. Electrical certificate as isolation (consignation) authority;
3. Working at heights authorization;
4. Experience with Mechanical-Electrical-I&C troubleshooting
5. Experience with using continuity and resistance testing devices and multimeters;
6. Testing & Commissioning Experience of Valves, Pumps & Heat Exchangers
7. Testing & Commissioning Experience of Chillers, Vacuum systems
8. Experience with filling, flushing, sampling and draining of systems
9. Experience with vibration measurements
10. Experience with understanding of Design Description Documents, Safety Requirements Documents
11. Experience with using MS Office to produce documentation ;

The Contractor's onsite team shall have a perfect knowledge of the French Electrical regulation (labour code) and of the related Standards, due to the nature of the Commissioning works performed, each member of the Contractor's team shall possess a valid French electrical certification (*Habilitation Electrique*) at a minimum BE/H0.

Trainings on process systems and specific software such as SAP and E-vision will be provided by IO.

The Contractor personnel shall be experienced in using Microsoft Office tools.

6.5 Mobilization

This Contract is valid for the mobilization of resources as defined per section 6.4. The Contractor Contract Responsible Officer is expected to be on site from the start of the Contract. It is understood that the Contractor will use the first two months of the Contract to recruit and mobilize the Commissioning Technicians to cover the services required per this Contract with oversight from IO on the recruited profiles.

Additional resources may be requested by IO within the contracted hours, it is expected for the Contractor to mobilize within 2 months after official request is issued by IO.

7 Implementation of the Contract

7.1 Monthly meeting

The Contractor shall organize monthly meetings related to the on-going contract, with the ITER Responsible Officer (RO) and concerned other ITER IO staff such as the dedicated task's IO Technical Responsible Officer (TRO), in order to examine progress of recent and ongoing activities, to review short-term schedules and to review new, eventual changes or necessary amendments in the existing Contract, schedule of activities and list of deliverables. The minutes of these meetings shall be written by the Contractor in the simplified form using the ITER provided template, with action items and submit the minutes for the approval of the ITER Contract Manager in ITER Document Management (IDM) system.



The Contractor written progress reports to the ITER Responsible Officer is a deliverable every month. The monthly progress report shall be submitted in IDM and it shall include at least the following information for the reporting period:

1. Safety Performance Indicator
2. Summary of the work carried out for the ongoing Contract;
3. Description of any problems encountered for the ongoing Contract;
4. References to any produced deliverables for all on-going activities according to the previously requested monthly list of deliverables;
5. Status and schedule of all ongoing activities according to the previously requested monthly Schedule of activities;
6. Summary of the Operations Change Requests, Non Conformance Reports issued or supported by the Contractor;
7. Staffing plan issues if any according to IO Schedule of activities;
8. Performance of the Contractor (see section 9)

During this Monthly meeting, IO will provide the Contractor with a schedule of activities & list of deliverables for the following month. The schedule of activities & list of deliverables will also be provided by IO for the following 6 months.

The progress report shall be submitted by the Contractor three working days before the monthly meeting. The progress report shall be approved by the ITER Organization RO.

7.2 Ad hoc Meetings

To be scheduled at the discretion of the IO-RO or the Contractor depending on the need. The minutes of these meetings shall be written by the Contractor in a simplified form of a table of action items and archived in IDM.

8 Deliverables

The deliverables within this Contract consist of:

- Monthly Progress report as defined in section 7.1.
- Commissioning/Operation/Maintenance documentation (defined in section 6).

An approved deliverable is a report or document delivered in the ITER document management system (IDM), submitted or reviewed by the CRO and approved by a TRO of the task or the RO of the contract.

9 Performance

Performance will be reviewed during the monthly meeting, the Contractor is expected to prepare its monthly performance report according to the criteria defined below:

- Number of Accidents and Near-Misses
- Actual Mobilisation of resources vs Forecasted Mobilisation of resources.
- Schedule adherence vs forecast (list of activities and deliverables provided by ITER):

1. Time to issue documentation (Test Reports, Test Procedures, etc.)
2. Time to perform assigned tasks (Test Procedures)

- Number of design/construction issues found during Commissioning and raised to IO via the issuance of Operations Clarification Requests or Non-Conformance Requests.



10 General conditions and requirements

10.1 Applicable codes and standards

The Contractor shall comply in performing the contract, with applicable laws, decrees, circulars and standards. The Contractor shall be responsible for all requests for administrative authorisations and declarations that are required by virtue of applicable regulations.

10.2 Language

Since the official language of the ITER Organization is English, all written communication and deliverables shall be in English.

10.3 Delivery

The following generic requirements apply both for the shipment of equipment, etc. from the manufacture/assembly site to the ITER Site or to any intermediate site.

Suitable precautions shall be taken to avoid damage to the equipment. The equipment in the scope of the contractor will be subject to control and inspection, before unloading (on the truck). The delivery can be refused by IO if the equipment is damaged or not complete. The equipment remains under the responsibility of the contractor until the final acceptance of the installation works. The contractor is responsible of the delivery on site and has to deal with possible site constraints.

10.4 Site Data

10.4.1 Necessary information

The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works. To the same extent, the Contractor shall be deemed to have inspected and examined the site, its surroundings, the above data and other available information, and to have been satisfied as to all relevant matters.

10.4.2 Roads and Traffic management

It is the responsibility of the Contractor to put in place all the necessary safety and traffic management measures, in accordance with applicable rules and regulations, to ensure that staff and vehicles retain safe passage across the ITER Site. All the required equipment etc. to create a safe environment for the Works and ITER staff shall be provided by the Contractor.

During the Works, any road shall not be blocked for more than half its width. For total closure of any roads, Works shall be performed on Saturdays only.

Roads accessing the worksite must be kept clean at all times. For this purpose, the Contractor shall organize road washing as often as earth is observed.

Vehicles or machinery, particularly those used for earthworks and civil engineering works, must be manoeuvred safely. Any damage to surrounding structures (buildings, roads, sidewalks, walkways) must be immediately repaired by the Contractor.



10.4.3 Safety

The Contractor will have to comply with the relevant IO OSH site instructions. The list is available in the PGC Annex 0 ([42FYPZ](#)). If the Contractor does not have access to ITER Document Management system, the document can be sent on demand.

Works can be performed on the ITER worksite or at the HQ/storage area. This could lead to additional OHS documentation (PPSPS-PDP) and meetings.

Depending of the location of the works, a safety plan (PPSPS) or Prevention Plan (PDP) shall be established by the Contractor (at a minimum in French) prior to the start of the Works. Contractor will have to use the ITER template. The Contractor and the potential subcontractor will have to attend to the common inspection with the relevant stakeholder.

10.4.4 Environmental protection

The Contractor shall comply with environmental protection requirements and procedures applicable at the ITER Site:

- ITER Organization Environmental Management System doc 1: PMAE v1 (ITER_D_97W4PN);
- Environmental requirements, (ITER_D_97WRFP).

An environmental respect plan shall be provided by the Contractor 2 weeks prior to the start of the Works, using the ITER template ([ITER_D_9FUP5C v1.9 - Environmental Respect Plan english template](#)).

Debris and waste of all type shall be removed as work progresses.

The Contractor shall be responsible for cleaning, repairing and restoring facilities that it dirtied or damaged to their original condition, and shall remove their debris and rubbish to public rubbish tips. Should said cleaning fail to be performed, it will be done by a third party at the loss and expense of the Contractor.

Furthermore, the ITER Policy on Safety, Security and Environment Protection Management ([43UJN7](#)), presenting the strategical objectives of the ITER Organization for protecting the interests mentioned under Article L593-1 of the French Environmental Code, must be circulated, known, understood and applied by all staff of the Contractor and cascaded down in the managerial lines of the Contractor and his sub-contractors.

10.4.5 Access to the site / Worksite installation

Access to the ITER Site is subject to the ITER Site Access Procedures

The Contractor shall be responsible for supplying and installing fencing protecting the worksite which shall be maintained for the duration of the works and removed after completion of the Works. The Contractor shall also display signs prohibiting entry onto the worksite.

10.4.6 Work authorisation



Prior to the start of any Works on the ITER Site, a Work Authorisation must be obtained in accordance with the Work Authorisation Procedure. Permit to work will be requested by the Contractor and managed by IO.

10.5 Quality Assurance (QA) requirements

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

The general requirements are detailed in ITER Procurement Quality Requirements.

Prior to commencement of the Works, a Quality Plan must be submitted for ITER Organization approval giving evidence of the above and describing the organisation for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities (see Procurement Requirements for Producing a Quality Plan).

Documentation developed as the result of this task shall be retained by the Contractor for a minimum of five (5) years and then may be discarded at the direction of the ITER Organization.

Prior to acceptance, delivery or payment, the Contractor shall perform a review of items and services status with respect to contract requirements shall be made and documented. This review shall be done in accordance with and documented in the Contractor's Release Note – refer to.

The Contractor shall obtain written agreement from the ITER Organization to any modifications to the design or this specification. Deviations and non-conformances shall be processed in accordance with the procedure. The Contractor shall commit to process non-conformance reports or Operations change requests and associated remedial and corrective actions expeditiously.

10.6 Safety Requirements

ITER is a Nuclear Facility identified in France by the number-INB-174 (“Installation Nucléaire de Base”). For Protection Important Components and in particular Safety Important Class components (SIC), the French Nuclear Regulation must be observed, in application of the Article 14 of the ITER Agreement.

In such case the External Contractors (Suppliers and Subcontractors, and their Subcontractors) must be informed that:

- The Order 7th February 2012 applies to all the components important for the protection (PIC) and the activities important for the protection (PIA).
- The compliance with the INB-order must be demonstrated in the chain of external contractors.
- In application of article II.2.5.4 of the Order 7th February 2012, contracted activities for supervision purposes are also subject to a supervision done by the Nuclear Operator.