

## Technical Specifications (In-Cash Procurement)

# Technical Summary for Call for Nomination - TPI Supervision and Inspection Services Contract

This Call for Nomination is to seek companies interested in participating in the tender for the Quality Control Inspection services contract.

This technical summary provides requirements for Supplier of inspections services and Quality Control supervision tasks to be carried out on behalf of ITER Organization.

It specifies minimum requirements applicable to Contractor providing inspection services and supervision of manufacture, servicing, assembly, test, handling, transportation, ...

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## 1. Background

ITER is a joint international research and development project that aims to demonstrate the scientific and technical feasibility of fusion power. The partners in the project - the ITER Parties - are the People's Republic of China, the European Union (represented by EURATOM), India, the Republic of Korea, Japan, the Russian Federation and the USA.

The programmatic goal of ITER is "to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes".

ITER facility is classified as Basic Nuclear Installation (Installation Nucléaire de Base (INB)) in accordance with French Regulation.

In accordance with the ITER agreement, the procurement of the major components of the ITER facility will be mostly provided "in-kind" by the ITER Parties via established Domestic Agencies (DA), which will enter into contract with companies for the fabrication and the supply the equipment. ITER facility will be constructed in Cadarache, St Paul lez Durance, France.

In application of the ITER Agreement, the ITER Organization (IO) is responsible for monitoring the quality of the supply chain. Quality control services are requested in the frame of this monitoring and its outcome shall be included in the final manufacturing files, collecting evidences that applicable requirements have been met.

**It must be noted that part of the expected documentation may be used as support documentation to answer to the French nuclear regulator.**

## 2. Purpose

This technical summary provides requirements for Supplier of inspections services and Quality Control supervision tasks to be carried out on behalf of ITER Organization.

It specifies minimum requirements applicable to Contractor providing inspection services and supervision of manufacture, servicing, assembly, test, handling, transportation, preservation and storage of procured fusion machine components.

**This Call for Nomination is to seek companies interested in participating in the tender for the Quality Control Inspection services contract (called "Candidate").**

## 3. Definitions

|                   |  |
|-------------------|--|
| <b>Contract</b>   | An all-inclusive term used to cover Cash and In kind Procurement Arrangements, Task Agreements and Contracts placed directly by the IO |
| <b>Contractor</b> | Firm or group of firms organized in a legal entity to provide scope of the supply  |
| <b>C-TRO</b>      | Contractor Technical Responsible Officer in charge for management of technical aspect of this contract                                 |

|                             |   |
|-----------------------------|---|
| <b>Domestic Agency (DA)</b> | An organization set up under the ITER Framework Agreement to provide goods or services to the ITER Organization through Procurement Arrangements (PA) and Task Agreements (TA)  |
| <b>IO</b>                   | ITER Organization sometimes referred to as ITER   |
| <b>MIP</b>                  | Manufacturing and Inspection Plan.  |
| <b>Supplier</b>             | Any entity that provides goods or services to the ITER Organization or DA   |
| <b>Supervision</b>          | Quality control duties performed by the provider that will involve the checking, evaluating, witnessing, monitoring, validating, verification, review, reporting, or a combination of any of these activities, to determine and document conformance with given process and product requirements. |
| <b>RO</b>                   | Responsible Officer   |
| <b>TRO</b>                  | Technical Responsible Officer   |

#### 4. Scope of Work

The contractor is requested to supply to the IO inspection and quality control supervision services including assessment, monitoring, reviewing and reporting on activities listed in the MIP for which Intervention Points have been marked up by IO.

This service may include any other activity as may be decided for monitoring quality of supply (e.g. kick off meeting) and supervision on NCR follow up, pre-manufacturing activities, qualification of processes related to mock-up, prototype manufacturing and testing. They also may include supervision on series manufacturing activities utilizing the qualified processes and assembly and installation activities on site of procured items.

Concerned items may be all main structures, systems and components: (SSCs):

- a) Main Vacuum Vessel and Ports
- b) Cryostat
- c) Magnets
- d) Tritium Plant
- e) Divertor
- f) Cooling Water Systems
- g) Diagnostics
- h) Other mechanical equipment and systems

Inspections may be requested in all countries (Domestic Agencies) which are partners in the ITER project which are:

- China
- Europe
- India
- Japan
- Russian Federation

- South Korea
- USA

## **5. Estimated Duration**

The duration of the Contract will be for a period of up to 4 years

## **6. Work Description**

Supervision and inspection work could be requested on-call basis for punctual inspection or on permanent-basis (resident inspectors) for fixed duration of time (more than two consecutive working days).

Inspection activities will be normally detailed in a Manufacturing and Inspection Plan marked up by the IO although additional spot inspections may be requested if deemed necessary by the IO.

Inspection will be at DA Suppliers/subcontractor's premises in each of the participating countries or at suppliers directly employed by the IO or on-site at ITER facility in Cadarache (France) for supervision on assembly and installation of procured items.

The inspections shall be performed by competent inspectors and qualified as appropriate depending on type of activity and assigned task. Each new inspector's CV will be presented to IO for review and acceptance prior to any initial assignment.

All deliverables must be checked for technical review by C-TRO before submitting them to IO. Contractor must have organization in place to ensure independent review of deliverables before issuance. Traceability of this review has to be maintained (e.g. signature on the Inspection Report).

The requested services could include but not be limited to:

- Advise on inspection activities and acceptability of NDE procedures.
- Advise on special process issues, such as welding, brazing and other manufacturing processes.
- Ensure that the correct revision of drawings approved for manufacture is being used by the manufacturer.
- Identification of Mill Certificates against material for all parts and ensure that material complies with drawing requirements and IO material specifications.
- Examination of incoming items from suppliers and sub-contractors for workmanship, damage, contract compliance and certification.
- Nuclear safety inspections for Safety Important Class structures, systems and Components
- General supervision of equipment and facilities during the manufacturing phase.
- Review of welding/brazing procedures, welder/brazer qualifications to the specified requirements.

- Witness weld/brazing procedure and welder qualification tests if required.
- Witness manufacturing operations for compliance with approved procedures and drawings.
- Examine all welds visually and where appropriate witness the corresponding non-destructive examinations, review radiographs etc. which should be reviewed as the work progresses (not at the end of the contract).
- Check validity of NDE personnel qualifications.
- Witness and review tests of Production Proof Samples to the requirements specified
- Carry out final inspection.
- Witness pressure tests, vacuum tests, and functional tests.
- Ensure that the Manufacturing & Inspection Plan is signed off by all interested parties at each point as the inspection occurs.
- Inform and advise the TRO and the IO RO immediately and no later than 24hours of any non-conformity found during the manufacture and the supervision activity.
- Inform and advise the TRO and the IO RO on quality issues including feedback concerning strengths and weaknesses, if any.
- Review Data Package.
- Issue a factual report summarising inspection performed.

## **7. Candidate's Requirements:**

Candidates should as a minimum meet the following requirements:

- 7.1 Have a well-organized, highly skilled team, with in-depth knowledge and experience of ALL the following technical domains:
- Civil Constructions
  - Materials, structures, mechanical components and Pressure Equipment
  - Machinery and rotating mechanical equipment
  - Electrical Equipment
- 7.2 Have geographical presence in all countries which are ITER stakeholders (ref. section 3). It corresponds to 35 different nations.

The contractor will only use inspectors from local offices in the relevant country where the work is being performed. Inspectors who are Nationals of the relative country must be available as some DA suppliers may have access restrictions for non-nationals.

- 7.3 Have adequate availability of competent local staff in all ITER DA 'countries to ensure efficient and timely answer to request of inspections, and shall provide a dedicated inspector for each Task. The inspector should be from the local office nearest to the place of inspection unless otherwise agreed with the IO.

- 7.4 Ensure that personnel used are fully competent and qualified for the assigned task and have in place a system, acceptable to IO, for internal training, competency assessment and internal qualification of inspectors assigned to requested tasks. This system has to be traceable and ensure a continuous verification of competence of assigned inspectors including periodic monitoring.
- 7.5 Have accreditation as per ISO 17020 and the scope of this accreditation should accurately define field of inspection, type and range congruent with scope of the requested service.
- 7.6 Have recognition as Notified Body in the frame of European Directives such as for instance Pressure Equipment Directive, ATEX, Machinery Directive being familiar with the approach of the French Authority in order to correctly advice manufacturers/suppliers on implementation of measures to fulfil with applicable requirements.
- 7.7 Have competent inspectors who are qualified to perform the work in accordance with the inspection request from IO. In particular inspectors who perform review of NDE results should have a qualification according to ISO 9712 or equivalent.
- 7.8 Have assigned personnel conversant with European and ASME codes.  
External qualifications, depending by specific task/assignment, may be considered as evidence (e.g. ASME (AI, AIN, AIS, ANIL, ANIS), ASNT, EDF-CEIDRE, UFIP-UIC, COFREND, AWS (CWI or SCWI), CSWIP (level 2 or 3), PCN (Level 2 or 3); BGAS-CSWIP (SWI or SPI -grade 1 or 2-), ACCP ( level II or III), NACE (level 2 or 3), ICORR (level 2 or 3), BGAS CSWIP (Grade 2 or 1) or equivalent)

## **8. Specific requirements and conditions**

- 8.1 The primary selection criteria for the Contractor shall be demonstrated experience, knowledge and skills with criteria given in section above and ensuring safe, timely and cost efficient management of large scale first-of-a-kind and nuclear projects.

The candidates shall have sufficient experience, resources and financial capacity to manage such a large scale project and being familiar with the approach of the French Authority.

- 8.2 In addition candidates must comply with following requirements:

- 8.2.1 The use of sub-contractors is not permitted. All staff assigned to this contract must be direct employees of the Contractor, which could either be a single firm or several firms acting as a Consortium.
- 8.2.2 The official language of the ITER Organization is English. Therefore all input and output documentation relevant for this Contract shall be in English.

The Contractor shall ensure that its assigned team to this contract, including inspectors, supervisor and back office staff, have an appropriate knowledge of English and writing skills to allow efficient communication, participating in meetings and ensure efficient and adequate issuance of deliverables.

- 8.2.3 All contractors' inspectors must observe and respect applicable safety rules when on duty at the manufacturer's facilities.
- 8.2.4 There must be no conflict of interest i.e. The Contractor should have no other commercial interest in the manufacturing contracts for which the services are required.
- 8.2.5 Contractor shall ensure that inspectors are bound by confidentiality for all IO supplied information. Each inspector may be required to sign a declaration of confidentiality and impartiality by supplier or subcontractor being inspected.
- 8.2.6 The Contractor shall prepare necessary travel arrangements for the inspections. It shall be responsible for obtaining written permission and clearance from the supplier or subcontractor in advance to enter and perform the inspections.
- 8.2.7 The Contractor should have an ITER approved QA Program or an ISO 9001 accredited quality system.

## **9. Expected Procurement Schedule**

Expected timetable is outlined as follows:

| <b>Procurement Schedule</b>   | <b>Tentative Dates</b> |
|-------------------------------|------------------------|
| Call for nominations          | 18 August 2016         |
| Receipt of nominations        | 19 September 2016      |
| Prequalification launch       | 21 September 2016      |
| Receipt of Prequalification   | 17 October 2016        |
| Issue call for tender         | 28 October 2016        |
| Tender submission due date    | 24 November 2016       |
| Estimated Contract Award date | 15 December 2016       |
| Estimated Contract Start Date | 16 January 2016        |