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Technical Summary

Call For Nomination

IO/20/CFT/70000497/LLU

Framework Contract
Supply of Components, Prototypes, and Tests for ITER Diagnostic Systems

1. Purpose

The main purpose of this framework contract is to provide the ITER Port Plugs & Diagnostics Integration Division with mechanical components and associated tests to support the development and manufacturing of the diagnostic systems in ITER.

Due to the diversity of the required components, the ITER Organization reserves the right to award this contract to more than one contractor.

2. Background

The ITER Project is an international effort aimed at demonstrating the scientific and technological feasibility of fusion energy. ITER is specified as a Nuclear Facility INB-174. It has to be highly reliable, efficient and safe device built to produce a predefined output quantity and quality of scientific data.

Monitoring and controlling the ITER device using diagnostics is crucial for successful operation. Design, construction and planning for operation of these diagnostics are now well underway. There are about fifty diagnostics systems in ITER which are needed to cover the reliable routine operation, advanced operation and physics exploitation. These diagnostics are divided into several categories, including magnetics, neutrons, bolometer, optical, microwave and operational systems.

Many of the diagnostics directly interface ITER Vacuum Vessel or Port Extensions and contribute to keep both the vacuum containment and the tritium confinement. Integration constraints and diagnostic requirements will impose to develop novel concepts or fit existing concepts to ITER environmental conditions. Those will require prototyping and testing.

3. Scope of Work

ITER Organization Port Plugs & Diagnostics Integration Division shall coordinate the manufacture of mechanical components and the achievement of tests through the execution of design work. According to the maturity of the designs contemplated for the equipment or components to be tested. Some detailed designs might also be required, including engineering verification.

The scope of the work requested in this call covers the services of experienced manufacturers in Ultra High Vacuum components with ability to tackle technical challenges such as fabrication and assembly of complex features (mineral insulated cables junction boxes, setup and weld cable end joints, fabricate braze joints, seal cables into vacuum test rig and perform full range of withstand voltage tests at various pressure levels, etc.).

The scope of the work includes:

- Welding / Brazing / Diffusion Bonding / Thermal / Electro magnetics testing;
- Machining (Milling, Cutting, Drilling, Spark erosion, 3D printing, etc.) Austenitic
- Stainless Steel (304 or 316), Nickel Based Alloys, Titanium, Copper, etc.;
- Designing (3D or 2D Computer Aided Design model) from CATIA conceptual
- models provided by ITER Organization;
- Permanent or temporary assembly of mechanical components;
- Helium Leak Testing (leak rate < 1x10-10 Pa.m3.s-1) on welded joints or particular
- assemblies;
- Thermal and electromagnetic testing;
- Radiography of welded joints;

4. Duration of Contract

The Contract is expected to come into force by the end of 2020 for a firm duration of four (4) years, with an option to extend for a further period of 2 years.

5. Tentative Schedule of this Call for Tender

The indicative Call for Tender milestones are:

Call for Nomination	Beginning of March 2020
Issuing of Prequalification invitations	Beginning of April 2020
Issuing of Call for Tender	Mid of June 2020
Submission of Tenders	End of July 2020
Award of Contract	End of October 2020

6. Experience

The selection process will be based on the following past experiences and facilities:

- Supplying of Ultra-high vacuum mechanical components or systems;
- Machining of UHV mechanical components;
- Metallic assemblies using welding, e-beam welding and brazing;
- Computer Aided Design;
- Machining facilities;
- Test facilities;

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 Suppliers and 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 and surveillance done by the Nuclear Operator.

For the Protection Important Components, structures and systems of the nuclear facility, and Protection Important Activities the contractor shall ensure that a specific management system is implemented for his own activities and for the activities done by any Supplier and Subcontractor following the requirements of the Order 7th February 2012.

7. Candidature

Participation is open to all legal persons participating either individually or in a grouping (consortium) which is established in an ITER Member State. A legal person cannot participate individually or as a consortium partner in more than one application or tender. A consortium may be a permanent, legally-established grouping or a grouping, which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization. The consortium cannot be modified later without the approval of the ITER Organization. Legal entities belonging to the same legal grouping are allowed to participate separately if they are able to demonstrate independent technical and financial capacities. Bidders' (individual or consortium) must comply with the selection criteria. IO reserves the right to disregard duplicated references and may exclude such legal entities form the tender procedure.

The UK is not a party to the ITER Agreement but to EURATOM Treaty. The draft Withdrawal Agreement between the EU and the UK provides that the provisions of the EURATOM treaty continues to apply to and in the UK for a transition period following its withdrawal from the EU and EURATOM. If the Withdrawal Agreement is not ratified (a no-deal Brexit) the EURATOM Treaty ceases to apply to and in the UK on the withdrawal date.

Until the Withdrawal Date, the UK remains a full member of the EU and EURATOM and until that date UK entities retain the right to participate in IO procurement procedures. In case they are selected, a Brexit clause is included in the contract. Likewise during the Transition period UK entities may participate in IO procurement procedures.

After the end of the Transition Period, when the Euratom Treaty ceases to apply to and in the UK, any UK entities bidding as a prime contractor or consortium partner, will be rejected from the IO procurement procedures. UK entities will no longer be recognised as entities of an ITER Member and will no longer have the right to participate in IO procurement procedures, unless the UK has entered into an Agreement with Euratom. Where UK entities can demonstrate a unique and specific competence in a certain field the IO, with approval of the ITER Council, may also allow them to participate in a procurement procedure.

8. Reference

Further information on the ITER Organization procurement can be found at:
http://www.iter.org/org/team/adm/proc