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TECHNICAL SUMMARY

Service Framework Contract for the Operation and Maintenance of ITER water supply and drainage networks

1. Purpose

ITER is a joint international research and development project aiming to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes. 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. The ITER Organization is located in Saint Paul lez Durance – France. Further information is available on the ITER website: http://www.iter.org.

The Purpose of this document is to provide a summary description of the technical requirements of the ITER Organization associated with a future framework contract for the Operation and Maintenance of ITER water supply and drainage networks.

This document shall apply to the Call for Nomination to be issued by the ITER Organization to the ITER Domestic Agencies.

This document is not the final specifications for the future framework contract which will contain more detailed requirements

2. Scope

The principal objective of the tender is to obtain operation and maintenance services of hydraulic networks and infrastructure on the ITER Site.

2.1 Services

The services to provide are intended to support the ITER Organization in the operation and maintenance of completed facilities for which it is responsible, to ensure that the required performance standards, quality levels and other work requirements are achieved.

For this purpose, the Contractor shall be responsible for providing a complete engineering and management solution including:

- Water management expertise (non-exhaustive list of domains of expertise)
  a. Hydraulic networks operation and maintenance;
  b. Drainage manhole inspection (Confined Space intervention);
  c. Network diagnosis;
  d. Detection of non-visible leaks: acoustic methods (correlation, geophone) or tracer gas;
  e. Water treatment;
  f. Water analyses performance;
  g. Hydraulic modeling;
  h. High-pressure cleaning / Vacuum cleaner truck (≤1h response time);
  i. Televisual inspection;
  j. Tightness testing (air or water type test);
  k. Pollution/flooding management;
  l. Repair of leaks of all types and sizes (digging, buried piping work, trenchless repair: lining, sleeve);
  m. Metering and analysis of water consumption;
  n. Drinking water distribution.
- Labor and other personnel with appropriate technical and management skills and expertise;
- Materials, spare parts, plant, tools, transport, test instruments, reagents, chemicals, analysis kits, fishes, lubricants and other sundry materials;
- Temporary plant items or equipment if necessary for delivering the required performance in the event of the breakdown of existing plant.

The services provided under the contract broadly include the following groups of activities:

1. Operation and maintenance of pressurized hydraulic networks;
2. Operation and maintenance of gravity hydraulic networks;
3. Operation and maintenance of vacuum sewer system;
4. Operation and maintenance of industrial water treatment plant;
5. Operation and maintenance of effluent retention, test and release area
6. Operation and maintenance of sewage treatment plant;
7. Maintenance of demineralized water system;
8. Operation and maintenance of miscellaneous hydraulic plant and equipment;
9. Transversal tasks;
10. Alteration and improvement works.

Below is an indicative list of plant and equipment to be operated and maintained at the start of the services. It is anticipated that as the construction of ITER progresses, additional equipment will be added to the scope throughout the lifetime of the contract.

Water plants	**Main Characteristics**
Waste Water Treatment Plant	Biological plant Capacity: 20 m³/h – 150 m³/day Expected yearly volume: 25 000 m³
Industrial Water Treatment Plant	Capacity: 10 m³/h – 60 m³/day – 10 000 m³/year Coagulation / Flocculation + Flotation unit Filtration from 800 µm to 20 µm pH adjustment systems Granular activated carbon filtration Reverse Osmosis membrane Oxidation of hydrazine by sodium hypochlorite 3 x 30 m³ control tanks equipped with mixing and sampling systems
Effluent Retention, Test and Release area	1 test / week 4 x 3000 m³ equipped with mixing and sampling systems Fish test Facility (2 aquariums)
Demineralized Water System	**Main Characteristics**
Demineralized Water Production plant	2 x17 m³/h Pretreatment (Filtration/dechlorination/antiscalant) Reverse Osmosis Membranes Electrodeionisation Deoxygenation
Demineralized Water Storage & Distribution	2 x 50 m³ storage tanks 3 pumps
Industrial and Sanitary Vacuum Drainage Station	5 Vacuum pumps 4 discharge pumps 2 vacuum vessels (3.5 and 7.5 m³) 3 ID 60 m³ control tanks equipped with mixing and sampling systems
Vacuum Sanitary network	2 km of vacuum Pipeline / 17 collect chambers / 9 buffer tanks
Vacuum Industrial network	4 km of vacuum Pipeline / 49 collect chambers / 24 buffer tanks
Pressurized water network	**Main Characteristics**
Potable water network	11 km of Pipeline / 150 meters /400 valves
Raw water network	7 km of Pipeline / 80 meters / 180 valves
Fire protection Water network	From pumping station / 92 hydrants / 160 valves
Gravity drainage networks	**Main Characteristics**
Precipitation drainage network	48 km of Pipeline 44 oil separators 3 storm water basins
Sanitary water drainage network	5 km of Pipeline
Industrial water drainage network	0.75 km of Pipeline

Cooling Water Blowdown Discharge network	2.6 km of Pipeline
Wheel Washers	2
Sanitary drainage Lifting stations	5
Sanitary drainage tanks	2 septic tanks / 2 collection tanks

2.2 Transversal tasks

The services to be provided under the contract include the following transversal tasks:

- Management and planning of maintenance (including warranty follow-up);
- Regulation control, synthesis, analysis, reporting;
- Management of scope evolution (works follow-up, appropriation of new systems, drawing integration, technical repository management);
- Verification of work authorizations having an impact on hydraulic networks and water plants;
- Assessment of excavation permit;
- Lock out Tag out management;
- Follow-up and analysis of water consumptions;
- Call center and on-call duty service;
- Pollution Management.

2.3 Reporting and expected deliverables

The Contractor will be responsible of supplying operation and maintenance documents as expected deliverables, in particular:

- Monthly progress reports;
- Maintenance reports in the Computerized Maintenance Management System (order of magnitude: 100 work orders per month);
- Daily intervention reports (order of magnitude: 50 intervention tickets to be closed each month);
- Monthly meter readings and consumption analysis reports;
- Update and where necessary creation of operation files for networks and plants:
  a. Equipment inventories (order of magnitude: the Bill of Material representing around 6 000 equipment items),
  b. Reflex action sheets for commissioning, shutdown and implementation of substitution means,
  c. Survey sheets,
  d. Patrol logs,
  e. Functional network diagrams and hydrants, oil separators and retention valves location layouts,
  f. Facilities configuration documents (normal, degraded),
  g. Tests and re-qualification sheets and procedures,
  h. Preventive and corrective maintenance process layouts,
  i. All technical files of equipment or facilities (calculation documents, test reports, manufacturer certificates, test certificates, instruction documents, operating manual, manufacturer maintenance recommendations log, catalogue of spare parts, etc.),
  j. Regulatory registers and reports.

2.5 Exclusions

The following activities are provided by other contractors and are not included in the scope of this contract:

- Operation and maintenance of building services (not process related):
  a. Electrical distribution of building services,
  b. Diesel generator and automatic inverter;
  c. Electrical devices (lighting, outlet, water heater...);
  d. Air Handling unit and Building HVAC associated equipment;
  e. Building safety related equipment (roof access);
  f. Lightning protection;
  g. Extinguishers;
  h. Fire detection System;
  i. Tightness and structure of the building;
- Ground maintenance:
  a. Green area management;
  b. Maintenance of road structures;
  c. Maintenance of fences and gates;
  d. Snow removal and road salting of all asphalted surface;
- Waste management:
  a. External containers allocation and maintenance;
  b. Waste collection (external containers or on-demand (waste removal ticket) in case of specific or bulk waste);
  c. Dedicated sludge containers allocation and collection.

3. Contract type

It is foreseen to place a framework Service Contract. The signature of the Framework Contract shall not imply, in any way, any obligation on the ITER Organization to proceed with any purchase through Task Orders further to its signature. Only implementation of the Framework Contract through Task Orders shall be binding on the ITER Organization. The Contractor shall execute the Services requested in each individual Task Order, in accordance with the task specification.

4. Work location

Considering the above description, all activities will be performed on the ITER site in Saint Paul lez Durance (France).

5. Required skills and experience

The ITER Organization is looking for applicants able to demonstrate experience in the areas of expertise listed above.

The applicants shall in addition demonstrate experience in nuclear installations (where procedural rigor and traceability is of key importance).

The quality assurance system implemented by the applicants shall be based on a recognized quality standard meeting the ITER Quality Assurance Program requirements.

It is expected that the resource required fulfilling the Task Orders (TO) will be equivalent to 8 Full Time Equivalent (FTE) at the beginning of the Contract’s Operational Phase.

6. Duration of the Contract

The Framework contract is scheduled to come into force in September 2023 and last for 4 years and 3 months. The contract shall start with a ramp-up phase of approximately 3 months, followed by an operational phase of 4 years. During the ramp-up phase, the Contractor is expected to prepare for the operational phase in order to be fully ready to take over the services from the company currently in charge of the operation and maintenance of ITER water supply and drainage networks.
The Contract will include two optional extensions of 1 year each.

7. Timetable

The tentative timetable is as follows:

- Prequalification issuance: September 2022
- Call for tender issuance: November 2022
- Award: April 2023
- Start of ramp-up phase: 1 September 2023
- Start of operational phase: 1 December 2023
- Contract end date (firm part): 30 November 2027

8. Candidature

Participation is open to all companies established in an ITER Member State. A consortium may be a permanent, legally – established grouping or a grouping, which has been constituted informally – but formalized with engagement letters – for a specific tender procedure.

The consortia shall be presented at the prequalification stage, where they will be assessed as a whole. Consortia cannot be modified later without the prior 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. Candidates (individual or consortium) must comply with the selection criteria. The IO reserves the right to disregard duplicated reference projects and may exclude such legal entities from the pre-qualification procedure.