

# Summary of Technical Specification for Vapour Suppression Tanks Manufacturing Design and Procurement

## Call for Nomination

### **Purpose**

The purpose of this contract is to do manufacturing design, fabricate, perform quality control, examine, test, perform manufacture certification, pack and ship four (4) Vapour Suppression Tanks (VSTs) to the ITER research facility in Sant Paul Lez Durance Cedex, France. Each tank shall be completed with nozzles, manholes, instrumentation ports, flanges, bolts, support skirts with ring support, handling and lifting lugs, gaskets etc as per the ITER design.

### **Background**

Four VSTs will be used to condense steam coming through a sparger system into the water pool inside of each tank.

Water vapour with some non-condensable gases will be released into the water inside the VST through the sparger system, vertical pipe with series of holes immersed into the water.

All tanks have the same geometrical and physical parameters except slight differences regarding the sparger system, and some nozzles. VSTs are designed for vacuum/pressure application.

The four tanks are mounted in two vertical sets. Each set consists of a lower tank with an upper tank mounted on the top of it. The support skirts are different for the upper and lower tanks. Each lower tank is equipped with an upwards skirt providing the support for the upper tank.

### **Tank design parameters**

- Internal volume of each vessel: 100 m<sup>3</sup>
- Volume of water during normal operation: 1×30 m<sup>3</sup>, 3×60 m<sup>3</sup>
- Vessel diameter: ~ 6.6 m
- Tank height with skirts: ~ 5 m
- Max. design temperature: 110 °C
- Min. design temperature: 0 °C
- Min. design pressure: vacuum
- Maximum Allowable Pressure (normal operating conditions), PS: 0.5 bar-g, non ESPN
- Maximum design pressure (accidental condition): 30 bar
- Wall thickness: up to 65 mm
- The tank is thermally isolated

### **Fabrication requirements**

- The base material for the tanks is austenite stainless steel.
- All weld joints of the tanks shall be suitable for non-destructive examination.
- All pressure boundary welds shall be full penetration.

### **Control**

- A Manufacturing and Inspection Plan (MIP) shall be prepared by contractor in line with ITER requirements.

### **Scope of work**

The following activities should be following the ITER design and shall include:

- Manufacturing design;
- Quality assurance and control;
- Fabrication of all components for each tank;
- Non-destructive examination of welds;
- Factory acceptance tests of each fully completed tank;
- Manufacturer certification;
- Transfer the tank documentation to ITER;
- Packaging of each tank;
- Shipment of four tanks

### **Timetable**

The tentative timetable is as follows:

Call for Tender:	May 2016
Tender submission:	June 2016
Contract placement:	September 2016
Tanks delivery at ITER site:	November 2017
Completion of Contract:	December 2017

### **Experience**

The Tenderer and its personnel shall demonstrate a technical and engineering capability and relevant experience in fabrication, examination, quality control and testing of large storage tanks in line with ASME B&PV Section VIII div 2.

The Tenderer shall have and maintain a valid ISO 9000 certification.

### **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 groupings shall be presented at the pre-qualification stage. The tenderer's composition cannot be modified without the approval of the ITER Organization after the pre-qualification.

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.