



Technical Summary

Contract for Procurement of Manual Valves, Relief Valves, Control Valves, and Valve Actuators (IO/15/CFT/11867/ACS – CP/3)

Purpose

The purpose of this Call for Nominations is to establish a Contract for the procurement of manual valves, relief valves, control valves, and valve actuators required for the ITER project under a centralized procurement.

Background

ITER will be the largest and most complex nuclear fusion system yet to be built. Situated in Southern France, adjacent to the French CEA Cadarache site, the ITER facility covers approximately 190 hectares and is designed to study the fusion reaction between hydrogen isotopes, tritium and deuterium.

The ITER Organization will require manual valves, relief valves, control valves, and valve actuators for the construction of the ITER systems, and those requirements have been identified in the following systems:

- Batch 1: Tokamak Cooling Water System (TCWS)
- Batch 2: Vacuum System (VS)
- Batch 3: Atmosphere Detritiation System (ADS)
- Batch 4: Test Blankets Systems (TBSs)
- Batch 5: Diagnostic Systems (DS)
- Batch 6: Type A Radwaste System (RWST)
- Batch 7: Component Cooling Water Systems and Chilled Water Systems (CCWS & CHWS)

Scope of Work

The Contractor will be required to supply manual valves, relief valves, control valves, and valve actuators to the ITER Organization (and Domestic Agencies) under the conditions of the Contract to be signed with the ITER Organization.

The table 1 below represents the preliminary bill of materials of manual valves, relief valves, control valves, and valve actuators required for the ITER Organization. Please note that they can be subject to changes. Also it may be possible that some of the Batches or part of them might not be under the scope of the Contract. This will be further clarified at the time of the Call for Tender.

The scope of supply includes manufacture, testing, qualification, cleaning, packaging and delivery of manual valves, relief valves, control valves, and valve actuators to the ITER site, France.

For more details about the scope of work and requirements, please refer to Annex 1.



Batch No.	Systems	Item	Type	Grade/Material	Pressure Class	Size (DN)
1	TCWS	Manual Valve	Ball	304L & 316L	150 - 900	20 - 300
		Manual Valve	Gate	304L & 316L	150 - 900	100 - 500
		Control Valve	Air Actuated	304L & 316L	150 - 900	25 - 500
		Relief Valve	N/A	304L & 316L	150 - 900	20 - 200
		Valve Actuator	Air	304L & 316L	N/A	20 - 200
		Valve Actuator	Electric	304L & 316L	N/A	100 - 500
3	ADS	Manual Valve	Ball	304L & 316L	150 - 900	50 - 400
		Manual Valve	Gate	304L & 316L	150 - 900	50 - 400
		Control Valve	Air Actuated	304L & 316L	150 - 900	50 - 400
		Relief Valve	N/A	304L & 316L	150 - 900	50 - 400
		Valve Actuator	Air	304L & 316L	N/A	50 - 400
		Valve Actuator	Electric	304L & 316L	N/A	50 - 400
4	TBSs	Manual Valve	Ball	304L & 316L	150 - 900	15 - 250
		Manual Valve	Gate	304L & 316L	150 - 900	15 - 250
		Control Valve	Air Actuated	304L & 316L	150 - 900	15 - 250
		Relief Valve	N/A	304L & 316L	150 - 900	15 - 250
		Valve Actuator	Air	304L & 316L	N/A	15 - 250
		Valve Actuator	Electric	304L & 316L	N/A	15 - 250
		Manual Valve	Ball	1.4404 & 1.4435	150 - 900	15 - 250
		Manual Valve	Gate	1.4404 & 1.4435	150 - 900	15 - 250
		Control Valve	Air Actuated	1.4404 & 1.4435	150 - 900	15 - 250
		Relief Valve	N/A	1.4404 & 1.4435	150 - 900	15 - 250
		Valve Actuator	Air	1.4404 & 1.4435	N/A	15 - 250
		Valve Actuator	Electric	1.4404 & 1.4435	N/A	15 - 250
5	DS	Manual Valve	Ball	304L & 316L	150 - 900	20 - 100
		Manual Valve	Gate	304L & 316L	150 - 900	20 - 100
		Control Valve	Air Actuated	304L & 316L	150 - 900	20 - 100
		Relief Valve	N/A	304L & 316L	150 - 900	20 - 100
		Valve Actuator	Air	304L & 316L	N/A	20 - 100
		Valve Actuator	Electric	304L & 316L	N/A	20 - 100
Batch No.	Systems	Item	Type	Grade/Material	Pressure Class	Size (DN)



Batch No.	Systems	Item	Type	Grade/Material	Pressure Class	Size (DN)
6	RWST	Manual Valve	Ball	304L & 316L	150	50
		Manual Valve	Gate	304L & 316L	150	50
		Control Valve	Air Actuated	304L & 316L	150	50
		Relief Valve	N/A	304L & 316L	150	50
		Valve Actuator	Air	304L & 316L	N/A	50
		Valve Actuator	Electric	304L & 316L	N/A	50
7	CCWS & CHWS	Manual Valve	Ball	304L & 316L	150 - 900	25 – 750
		Manual Valve	Gate	304L & 316L	150 - 900	25 – 750
		Control Valve	Air Actuated	304L & 316L	150 - 900	25 – 750
		Relief Valve	N/A	304L & 316L	150 - 900	25 – 750
		Valve Actuator	Air	304L & 316L	N/A	25 – 750
		Valve Actuator	Electric	304L & 316L	N/A	25 – 750
		Manual Valve	Ball	Carbon Steel	150 - 900	50 - 600
		Manual Valve	Gate	Carbon Steel	150 - 900	50 - 600
		Control Valve	Air Actuated	Carbon Steel	150 - 900	50 - 600
		Relief Valve	N/A	Carbon Steel	150 - 900	50 - 600
		Valve Actuator	Air	Carbon Steel	150 - 900	50 - 600
		Valve Actuator	Electric	Carbon Steel	150 - 900	50 - 600

Table 1- Preliminary Bill of Materials (subject to change)



Quantities

Quantities will be estimated and disclosed at the next stages of the tendering process. The total number of valves should range between 4,000 and 8,000 valves.

Timetable

The tentative timetable is as follows:

- Call for Nominations July 2015
- Pre-Qualification Q3 2015
- Call for Tender Q4 2015
- Award of the Framework Contract S1 2016

The ITER Organization may combine Pre-Qualification and Call for Tender at its option.

Experience

The Supplier shall have demonstrable experience in the manufacturing and supply of manual valves, motorized valves, relief valves, control valves, and valve actuators used in the nuclear industry.

The Supplier shall have demonstrable experience in manufacturing such materials conformingly to ASME B16.34 [1], ASME B31.3-2010 Category M fluid [2], and is able to comply with ESP [3] and ESPN [4] French regulations.

The valve actuators and control valves shall be designed to conform with the Machinery Directive 2006/42/EC [5] and EMC Directive 2004/108/EC [6]. The Supplier shall be able to set-up a Quality Assurance System and Supply Chain Management System required for manufacturing of nuclear components and shall comply with the French Order of 7th February 2012 establishing the general rules for basic nuclear installations [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 of the same contract. 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 grouping shall be presented at the Pre-Qualification stage. The Candidate's composition cannot be modified without the approval of the ITER Organization after the Pre-Qualification.

Legal entities belonging to the same legal group 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.



References

- [1] ASME B16.34, Valves- Flanged, Threaded, and Welding End
- [2] ASME B31.3-2010, Process Piping
- [3] ESP - Equipement Sous Pression- French Decree 99-1046 of 13 December 1999 on Pressure Equipment
- [4] ESPN - Equipement Sous Pression Nucleaire - French Order 2005 December 12th for nuclear pressurised equipment (ESPN)
- [5] Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on Machinery, and Amendig Directive 95/16/EC
- [6] Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the Approximation of the Laws of the Member States Relating to Electromagnetic Compatibility and Repealing Directive 89/336/EEC
- [7] French Order dated 7 February 2012 relating to the general technical regulations applicable to INB - EN (ITER_D_7M2YKF)
- [8] RCC-MR edition 2007

Annexes

Annex 1: Summary of Requirements by Batches

Annex 1

Summary of Requirements per Batches

Purpose

The purpose of the use of Batches is to procure valves and actuators for the construction of IO Tokamak Cooling Water System (TCWS) and various other IO systems. The items to be procured are stainless steel and carbon steel manual valves, relief valves, control valves, and valve actuators.

Summary of Batches

The stainless steel and carbon steel manual valves, relief valves, control valves, and valve actuators will be procured for the following Batches:

- Batch 1: Tokamak Cooling Water Systems (TCWS)
- Batch 2: Vacuum Systems (VS)
- Batch 3: Atmosphere Detritiation Systems (ADS)
- Batch 4: Test Blankets Systems (TBSs)
- Batch 5: Diagnostic Systems (DS)
- Batch 6: Type A Radwaste System (RWST)
- Batch 7: Component Cooling Water Systems (CCWS) and Chilled Water Systems (CHWS)

Scope of Materials for CP/3

The type of equipment to be procured for CP/3 will be as follows:

- Manual Valves
 - Hand-operated (no valve actuator),
- Relief Valves
 - Used for pressure or vacuum relief of the piping system,
- Control Valves
 - Used for the control of fluid flow of the piping system,
- Actuated Valves
 - With electric operated actuators
 - With air operated actuators

Summary of Technical Requirements

- The general requirements applicable for all the Batches will be as follows:
 - ✓ The manual valves, relief valves, control valves, and valve actuators:
 - are ESPN class (N2 and N3) equipment,

- must comply with the Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC,
 - designed to meet the requirements of ASME B31.3 Category M fluid,
 - are austenitic stainless steel according to grade 304L and 316L with additional supplementary requirements which will be given in the technical specification at the Call for Tender stage;
- These general requirements are amended as follows for Batch 4:
 - ✓ The manual valves, relief valves, control valves, and valve actuators:
 - are ESPN class (N2 and N3) equipment,
 - must comply with the Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC,
 - designed to meet the requirements of RCC-MR,
 - are austenitic stainless steel according to grade 1.4404 and 1.4435 with additional supplementary requirements which will be given in the technical specification at the Call for Tender stage;
- These general requirements are amended as follows for Batches 5 and 7:
 - ✓ The manual valves, relief valves, control valves, and valve actuators:
 - are ESP equipment,
 - must comply with the Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC,
 - designed to meet the requirements of ASME B31.3 Normal fluid Category,
 - are carbon steel with additional supplementary requirements which will be given in the technical specification at the Call for Tender stage.