
Qualification and Commercial Dedication Services

Summary for Supplier Information

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Project Overview

ITER is a joint international project with the programmatic goal of demonstrating the scientific and technological feasibility of fusion energy for peaceful purposes. The ITER facility is a tokamak under construction in Cadarache, France. The European Union is the host party. Governing regulations, codes, and standards for the design and construction of ITER components are determined by the European Union and France. Additional information is available at <https://www.iter.org/>.

The United States ITER Project Office (USIPO) is hosted by Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee, under contract with UT-Battelle (the "Company"). USIPO is responsible for design and procurement of assigned U.S. contributions, including vacuum auxiliary systems under PBS-31.

Summary of Services and Equipment Being Procured

USIPO is seeking interested suppliers for qualification, commercial dedication, and optional supply of commercially sourced pneumatic products used in Vacuum Auxiliary Systems.

Vacuum systems provide evacuation, venting, purging, backfilling, pressure monitoring, secondary containment, and leak-detection services to multiple ITER clients. These systems control several hundred vacuum valves. Approximately half of those valves perform a designated safety function that provides containment in an accident condition. Safety Important Class (SIC) vacuum process valves also perform process-control functions and must be controlled by both the conventional control system and the Central Safety System (CSS).

Pneumatically actuated 3/2-way pilot valve manifolds, together with associated air pressure regulators and pressure relief valves, interface with conventional-control pilot valves and SIC vacuum valves. This arrangement allows the CSS to override pneumatic signals from the conventional system and close the vacuum valves in an accident. Because the devices are commercially sourced, a nuclear qualification program and commercial-grade dedication process are required before they can be used in an ITER safety system.

The scope of the forthcoming solicitation includes:

- Qualification of selected commercially sourced pneumatic products against the technical specifications and applicable nuclear qualification standards
- Commercial-grade dedication of the devices in accordance with accepted nuclear industry guidance
- Optional procurement of dedicated hardware from the original equipment manufacturer and supply of that hardware to Company-designated suppliers and to the ITER site in France

The three product families covered by this work are summarized below. Product names are stated generically; specific commercial models will be identified in the formal solicitation and technical specifications.

Item	Component	Quantity ¹
1	Pneumatically actuated 3/2-way valve manifold	250
2	Air pressure regulator	90
3	Pressure relief valve	160

Valve manifolds are planned for shipment to the Company and/or Company-designated suppliers. Air pressure regulators and pressure relief valves are planned for shipment to the ITER site in France.

Project Management Expectations

The supplier will manage qualifications, commercial dedication, documentation, and—if exercised—hardware supply. Expected activities include:

- A single Point of Contact for the Company's Technical Project Officer and Procurement Officer
- A project plan, schedule, configuration control plan, and subcontract-specific Quality Plan; work may not start until the Quality Plan is approved
- A kickoff meeting and regular progress meetings, with minutes issued within ten working days

A full Statement of Work and technical specifications will be provided through the formal solicitation. Indicate interest to Landen Treadway at treadwayla@ornl.gov. Questions may be directed by email or phone at +1 865-341-3071.

Technical and Qualification Requirements

Applicable technical specifications

Qualification will be performed against ITER technical specifications for:

- VAS-02 vacuum-system pneumatically actuated 3/2-way valve manifolds
- Air pressure regulators
- Pressure relief valves

These devices support a safety function that provides confinement of radioactive products. Equipment supplied under this work is classified PIC/SIC-1 and is a Protection Important Component subject to the French Order of 7 February 2012 (INB regulation). Quality and technical requirements needed to satisfy INB expectations are embedded in the technical specifications and Statement of Work.

Qualification plans, testing, and reports

The Seller will develop Qualification Plans based on the technical specifications and the applicable qualification standards. Each plan must be approved by the Company before testing begins and must include, at a minimum:

- Description of equipment
- Number of samples to be tested

¹ Estimated

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- Procedure for accelerated aging
 - Operational and environmental conditions to be simulated
 - Performance and acceptance criteria
 - Required test equipment
 - Test sequence
 - Qualification method (test, analysis, or combination)

After plan approval, the Seller will implement the plans. The Seller is responsible for procurement of test articles. The Company reserves the right to witness testing at the Seller's site or a subcontractor's site. Preliminary test results will be provided to the Company at the completion of each test.

Qualification Reports must present a clear explanation of how plan data, tests, and analyses demonstrate qualification. Each report will include the applicable technical specification, identification of features demonstrated by test, the test plan, and a test-results report covering objective, equipment tested, test facility, procedures, data, a summary, and approval signatures.

Commercial-grade dedication

The Seller will prepare commercial dedication plans in accordance with accepted nuclear industry guidance for acceptance of commercial-grade items in safety-related applications. Technical analysis will be documented on the prescribed evaluation form. Dedication plans will include, at a minimum:

- Bound scope of use and safety functions
- Critical characteristics, with failure analysis, acceptance criteria, and acceptance methods (tests, surveys, inspections, source verification, performance records, and similar methods)

The commercial dedication item plan must be approved by the Company before optional hardware procurement and dedication begin.

Supply of Equipment

If the optional hardware task is exercised, the Seller will procure the items from the original equipment manufacturer, perform commercial-grade dedication in accordance with the approved plan, and deliver dedicated hardware with a complete commercial dedication dossier. Seller activities include supplier coordination, verification, receipt and inspection at the Seller's location, final acceptance, quality surveillance, and processing of nonconformances and corrective actions. Inspection and storage at the ITER site remain the Company's responsibility.

Applicable codes, standards, and guidance

Work will be performed consistent with the following references, as invoked by the Statement of Work and technical specifications:

Reference	Subject
IEEE / IEC 60780-323-2016	Qualification of electrical equipment important to safety in nuclear facilities
ASME QME-1-2025	Qualification of mechanical equipment used in nuclear facilities
EPRI 3002002982	Guideline for acceptance of commercial-grade items in nuclear safety-related applications
French Order of 7 February 2012	INB regulation applicable to Protection Important Components and Protection Important Activities

Quality Assurance Requirements

The supplier must apply a quality program that meets the subcontract and specifications. Changes that could affect the work require Company approval in advance. Expectations include:

- A subcontract-specific Quality Plan, flowed down to subcontractors
- An Inspection Plan covering qualification and commercial dedication
- Access for USIPO, ITER Organization, and French regulatory surveillance at the Seller's and sub-tier facilities
- Company-approved deviation requests before implementing departures, and nonconformance control
- Root-cause analysis for Major nonconformances

Documentation and Commercial Dedication Dossier

Principal deliverables include the project plan and schedule, configuration control plan, Quality Plan, meeting minutes, qualification plans and reports, commercial dedication evaluation, Inspection Plan, Contractor Release Note(s), Certificate of Conformity, commercial dedication dossier, and pre-shipment packages for ITER-site deliveries.

The commercial dedication dossier must be paginated, legible, and traceable. It must provide objective evidence that approved requirements were met. Typical contents include the technical evaluation; OEM datasheets, drawings, manuals, and traceability records; inspection, test, survey, and source-verification records; approved deviations and nonconformances if any; release notes and certificates for ITER shipments; and handling and storage instructions.

A Certificate of Conformity must identify the Seller and the item and state that the hardware meets the applicable specifications and Statement of Work. Hardware for the ITER site may not ship until the Company approves the Contractor Release Note.

Shipment and Logistics (ITER-Site Deliveries)

The Seller is responsible for packaging, storage, and loading. Transport from the Seller's facility is performed by the ITER Project logistics provider. The Seller must comply with export-control requirements and serve as exporter and U.S. Principal Party in Interest where those roles apply.

Supplier Qualifications and Requested Expression-of-Interest Information

Interested suppliers should demonstrate experience and capability in the following areas:

- Qualification of mechanical and pneumatic equipment for nuclear, fusion, safety-related, or similarly regulated applications;
- Commercial-grade dedication using EPRI commercial-grade-item acceptance principles;
- Development and execution of qualification test programs, including environmental and accelerated-aging testing where applicable;
- Quality assurance program implementation, inspection planning, source verification, traceability, and nonconformance control;
- Preparation of nuclear-quality documentation, manufacturing dossiers, and certificates of conformity;
- Procurement and supply-chain management for commercially sourced pneumatic components;
- International export, packaging, and shipment-preparation requirements for delivery to France; and
- Ability to support surveillance activities by USIPO, ITER Organization, and regulatory representatives.

Expressions of interest should include:

1. Company name, address, primary contact, telephone number, and email address;
2. Brief company overview, including relevant quality certifications and quality-program information;
3. Description of relevant experience with equipment qualification, commercial dedication, nuclear or safety-important components, and pneumatic systems;
4. Examples of comparable projects completed within the past five years;
5. Description of available qualification testing, inspection, source-surveillance, and documentation capabilities;
6. Identification of proposed subcontractors, test laboratories, or specialty service providers, if any;
7. Confirmation of ability to comply with applicable quality, export-control, packaging, and international-shipment requirements; and
8. Any questions, comments, or recommendations regarding the anticipated scope of work.

How to Express Interest

Suppliers with demonstrated capability in nuclear equipment qualification, commercial-grade dedication of commercial off-the-shelf pneumatic components, and associated quality-assurance documentation are invited to express interest.

Please send a statement of interest to Landen Treadway at treadwayla@ornl.gov. The statement should include the information listed in the preceding section. A full Statement of Work and technical specifications will be provided through the formal solicitation.

Email: treadwayla@ornl.gov

Phone: +1 865-341-3071

This summary is provided for supplier information only. It does not constitute a solicitation, an offer, or a commitment by UT-Battelle, ORNL, USIPO, or the ITER Organization. Requirements in the formal solicitation and subcontract will govern.