

Contents

1	INTRODUCTION.....	2
2	SCOPE	2
3	APPLICABLE DOCUMENTS.....	2
	3.1 References.....	2
	3.2 Applicable Codes and Standards	3
4	PERFORMANCE REQUIREMENTS	3
	4.1 Performance Requirement 1 – Project Planning and Schedule	3
	4.2 Performance Requirement 2 – Factory Acceptance and Validation Testing.....	5
	4.3 Performance Requirement 5 – Documentation.....	6
	4.4 Performance Requirement 6 – Data Management	7
5	PACKAGING, LOADING, AND STORAGE	8
	5.1 Packaging Loading and Storage.....	8
	5.2 Creation and Submittal of Pre-Shipment Documentation	9
6	QUALITY ASSURANCE	13
	6.1 Quality Program.....	13
	6.2 Access for Source Surveillance Inspections	13
	6.3 Seller-Requested Deviation	14
	6.4 Non-Conformances	14
7	DELIVERABLES	16
	7.1 Roots Pumps	16
	7.2 Documentation.....	18

1 INTRODUCTION

ITER is an international research project with a programmatic goal of demonstrating the scientific and technological feasibility of fusion energy for peaceful purposes. The ITER device is being designed by the European Union, India, Japan, the People's Republic of China, the Republic of Korea, the Russian Federation, and the United States. The European Union is the host party for the ITER facility which is being constructed in Cadarache, France. The ITER Organization Central Team (IO) is responsible for the conceptual design, performance parameters, schedules, integration management, systems engineering, and on-site assembly, installation, testing and commissioning. Governing regulations, codes, and standards for the design and construction of all ITER components are determined by the European Union and France. The US portion of ITER is managed by the US ITER Project Office (USIPO) which is hosted by Oak Ridge National Laboratory (ORNL) under contract with UT-Battelle (hereinafter referred to as the "Company"), and located in Oak Ridge, Tennessee. Responsibility for operating the completed ITER facility will belong to the IO.

2 SCOPE

This Statement of Work (SOW) outlines the activities required for the procurement, validation, and shipment of nine (9) Pfeiffer OKTA 1500 GM All-Metal Roots pump. The pump was specially developed by Pfeiffer for use in ITER's roughing pump system. The pump has been validated by the IO and is now a commercially available pump from Pfeiffer Vacuum. As this is a commercial off-the-shelf (COTS) pump qualified for use at ITER, a dedicated technical specification is not required. The pumps, cabling, and power supplies as well as the required documentation are listed in Section 7 of this Statement of Work.

Note that optional hardware scope, six (6) additional pumps as detailed in Section 7.1.2, may be added to this scope of work if written notification is given to the Seller by the Company's Procurement Officer (PO).

Additionally, US ITER may provide a build-to-print drawing with associated technical requirements for the structural support frames to be fabricated for the roots pump. These frames shall be build-to-print, and if optional scope is exercised, fabrication falling within the scope of Pfeiffer. The drawing and technical requirements shall be provided at a later date once the option to exercise this scope is agreed upon. Cost for these supports shall be negotiated at that time.

3 APPLICABLE DOCUMENTS

3.1 References

- 3.1.1 Technical Specification 3000m³/hr Stainless Steel Roots Vacuum Pump (ITER_D_YUXHXT)
- 3.1.2 Deviation Request Form (EDRM 803f59df)

- 3.1.3 Non-Conformance Report Procedure (EDRM 803f913f)
- 3.1.4 Non-Conformance Report Form (EDRM 8043b412)
- 3.1.5 Contractor Release Note Template (EDRM 803f4967)

3.2 Applicable Codes and Standards

- 3.2.1 ISO 9712, Non-destructive testing – Qualification and certification of NDT personnel

4 PERFORMANCE REQUIREMENTS

4.1 Performance Requirement 1 – Project Planning and Schedule

NOTE: Pfeiffer has provided standard lead times for this pump as 36-39 months from receipt of order. The lead time is related to availability at the fabrication facility and not related to pre-fabrication activities specific to pump fabrication. The Kick-Off Meeting, Schedule, and Plan are to be used for internal US ITER planning.

4.1.1 Project Kick-Off Meeting

- 1) The Project Kick-Off Meeting shall be scheduled at a mutually agreeable time as soon as practical after the award of the subcontract. The primary purpose of the Project Kick-Off Meeting is to meet the principal participants and to ensure the scope and expectations of the subcontract are understood.
- 2) Discussion topics at the Project Kick-Off Meeting shall include:
 - Overview of the OKTA 1500 GM
 - Overview of Manufacturing Processes
 - Validation Processes
 - Project Schedule
 - Final Documentation Package (Manufacturing Dossier)
 - Project Schedule
- 3) If requested, the Seller shall arrange for a tour of the facility(s) where pump fabrication shall occur.
- 4) The Seller shall prepare the Project Kick-Off Meeting Minutes within 5 working days of the meeting. If Seller has a presentation for the Kick-Off meeting as a response to the requirements of the Kick-Off meeting, Seller may submit presentation with a list of any resultant action items as suitable meeting minutes.

4.1.2 Project Schedule

- 1) The Seller shall prepare a Project Schedule which outlines, at a minimum, beginning of fabrication, start of validation activities, submittal of documentation, and ready for shipment. The US ITER Technical Project Officer (TPO) has the option to add additional items to the Project Schedule.
- 2) As the USIPO reserves the right to witness any fabrication and inspection event. Notification of start date of fabrication and inspection events shall be given at least eight (8) weeks prior as to align with US ITER travel requirements.

4.1.3 Point of Contact

- 1) The Seller shall designate an official single Point of Contact (POC) to work with the Company's TPO and Procurement Officer (PO).
- 2) Technical issues shall be discussed with the Company's TPO.
- 3) Subcontract administration issues shall be discussed with the Company's PO.

4.1.4 Project Plan

- 1) The Seller shall prepare a Project Plan that integrates each element of subcontract management into a concise written document.
- 2) The Project Plan shall identify the Seller's key personnel in this project and describe their individual roles and responsibilities. In addition to the POC, the key personal identified shall include, at a minimum, the Fabrication Facility Manager, Quality Manager, Testing/Validation Coordinator, and Logistics Officer.
- 3) The Project Plan shall include the proposed Project Schedule.

4.1.5 Progress Meetings and Written Notification

- 1) As the lead time is 36-39 months due to the availability of Pfeiffer, no regularly scheduled progress meetings shall be scheduled until notification is given in writing by Pfeiffer that fabrication activities are commencing. However, meetings can be called by either the TPO or the Seller's POC, at any time given sufficient notice.
- 2) Written notification shall be transmitted by the POC to the TPO at a minimum, for the following events:
 - Receipt of key materials and subcomponents
 - Commencement of fabrication operations as signified by machining, pre-assembly or similar activities
 - Commencement of pump assembly
 - Completion of pump assembly

- Validation activities (including leak check)
 - Packaging
- 3) The Seller shall prepare and send minutes of meetings to the TPO for review and approval within 5 business days.

4.2 Performance Requirement 2 – Factory Acceptance and Validation Testing

As the OKTA 1500 GM is a COTS pump, the vendor may use their standard factory acceptance and validation methodology.

The pump will be used in a tritium process and is accordingly classified as SIC-1. The safety function of the pump is to maintain confinement and as such, verification of the helium leak rate is safety critical.

The pump and its supporting accessories such as, Variable Frequency Drive (VFD) and sensors, shall work in a static magnetic field of up to 15 mT.

Pfeiffer shall supply the procedure used for helium leak detection to US ITER prior to commencement of helium leak detection testing (HLT). Qualifications of personnel involved in the performance of the HLT as well as the responsible party for writing and approving the HLT procedure, shall be submitted for review by US ITER. At a minimum, the HLT Performer shall be certified a Level II and the procedure author at Level III, per the requirements of ISO 9712 [3.2.1]. Additionally, a leak detection report shall be submitted to US ITER for review.

At a minimum, helium leak detection shall verify the following:

- 1) Leak rate from process volume to external atmosphere shall be $<1 \times 10^{-9}$ Pa*m³/s (air equivalent)
- 2) Leak rate through the labyrinth seal separating the process volume and the pump motor shall be no greater than 0.15 Pa*m³/s.
- 3) Leak rate of purge gas connection for dynamic seal from the supply shall be to the order of 1×10^{-8} Pa*m³/s.

Note that a deviation request to relax these values will not be accepted.

US ITER reserves the right to reject receipt of any pump which does not meet the leak rate requirement.

Additionally, the calibration information for the equipment used and the certifications for personnel who execute the procedure shall be provided.

4.3 Performance Requirement 5 – Documentation

4.3.1 Contractor Release Note:

- 1) Each delivery of hardware to the ITER site shall have a Contractor Release Note. The Contractor Release Note (CRN) is a document that, for an equipment/service:
 - identifies the applicable requirements,
 - certifies that the equipment/service complies with these requirements,
 - records the status of the documentation, and
 - highlights any outstanding obligation.
- 2) The Company is responsible for obtaining IO approval. The pipe supports shall not be delivered until the CRN has been accepted by the Company. A standard form [3.1.5] is provided by the Company for documenting the CRN.
- 3) The Seller shall not submit the CRN until all manufacturing and inspection operations are complete.

4.3.2 Certificate of Conformity

- 1) The Seller shall prepare a Certificate of Conformity for the pumps. The Certificate of Conformity shall state that the supplied pumps are conform to the IO validated design and the additional requirements imposed in this SOW. The designated POC shall submit the completed Certificate of Conformity to the TPO.
- 2) The Seller may use any suitable format for the Certificate of Conformity. At a minimum, the Certificate of Conformity shall include:
 - Manufacturer's details (name, address, etc.)
 - Item identification details (pump model and serial number)
 - Declaration that the equipment meets the applicable requirements (specifically list requirements documents)
 - Any standards the item complies with
 - Signature of Sellers authorized representative.

4.3.3 Manufacturing Dossier

- 1) The Seller shall prepare a Manufacturing Dossier for the roots pumps and submit it to the Company for approval. The Manufacturing Dossier shall consist of the documents agreed upon during the first progress meeting. At minimum, the Manufacturing Dossier shall contain the documents listed below, when applicable:

- Contractor Release Note
 - A copy of the validation and acceptance testing.
 - A copy of the helium leak test procedure, calibration information, and personnel qualifications (for each pump supplied)
 - Approve Deviation Requests (if applicable)
 - Approved Non-Conformance Reports (if applicable)
 - Certificate of Conformity
- 2) The Manufacturing Dossier shall also include:
- Cover page that identifies the item(s) (part and /or serial number, and name) as well as a space for signature of the Sellers's authorized representative and dates signed
 - Table of Contents with the page number on which each section begins
 - Summary page describing key points relevant to fabrication of the part(s)
 - Inclusive page numbers (x of x) for the entire dossier
 - Optical Character Recognition (OCR) of the dossier before delivery to the Company

4.4 Performance Requirement 6 – Data Management

4.4.1 Language and Units

- 1) All documentation submitted for satisfaction of this SOW shall be in the English language.
- 2) All dimensions and parameters shall be reported in SI units (e.g., mm, kg, N, MPa, °C) as the primary units.

4.4.2 Company Provided Information

Information provided by the Company to the Seller shall not be used for any activity except those specified by this Statement of Work.

4.4.3 Original Copies

The Seller shall keep and maintain the original copies of all signed documents. These copies shall be supplied to the Company as part of the Manufacturing Dossier. The Seller shall provide electronic copies of all documentation in searchable Portable Document Format (.pdf). Electronic documents shall be supplied to the Company using email, USB storage device, or file transfer tools such as the ORNL File Upload System, Drop Box, or other such electronic tool for securely transferring large files.

5 PACKAGING, LOADING, AND STORAGE

5.1 Packaging Loading and Storage

5.1.1 Packaging

The Seller shall package and prepare each pump for shipment to the ITER site in Cadarache, France. The packaging shall protect the equipment from any conditions (e.g., shock, impact, weather, etc.) which could cause damage to the supports resulting in nonconformity with applicable requirements. The seller shall provide a Package Design Document which includes the proposed packaging design as well as analysis showing it can withstand air, land, and sea transport.

The Seller is required to mark each package with the following:

- Subcontract number
- Delivery address
- Consignor (Seller's name, address, and contact information)
- Package number (as identified on the packing list)
- ITER Support Identification Number(s)
- Vacuum Class (VQC-1)
- Gross Weight (kg)
- Net Weight (kg)
- Handling instructions (in English)
- Lifting/Lashing/Jacking points
- Center of Gravity (in 3 dimensions)
- Compliance marks (e.g., ISPM-15, CE) (if applicable)

5.1.2 Loading

The Seller is required to load items to be transported onto the LSP conveyance (e.g., truck, van, trailer, vessel, ocean container, air freight container, rail car) at the factory. In doing so, Seller shall provide all necessary and customary equipment, personnel, and safety equipment for proper loading into the vehicle.

5.1.3 Storage of finished Products

The Company, at its discretion, may require Seller to postpone the date of shipment by up to sixty (60) days from the agreed upon shipment. If the date of the shipment is postponed, the Seller shall, at no additional cost, store finished products in a safe and secure manner that protects their condition and preserves the integrity of all components and packaging. If the storage is required beyond sixty (60) days, Seller agrees to good faith negotiation of extended storage terms.

5.2 Creation and Submittal of Pre-Shipment Documentation

NOTE: All documentation must be completed in the English language.

The Seller shall provide information and documentation required for international shipment in accordance with the following schedule:

5.2.1 Pre-Shipment Deliverable Package No. 1

A pre-shipment Deliverable Package shall be provided by the Seller no later than *10 business days after the Project Kick-off Meeting*.

Pre-Shipment Deliverable Package #1 is to contain the following items:

- 1) Written notice of the planned date on which the goods will be packaged and available for shipment.
- 2) Contact information for Seller's Shipping/Logistics coordinator.
- 3) Technical characteristics of the packaged components as follows:
- 4) Physical data and drawings showing dimensions, total and distributed weights, center of gravity (in 3 dimensions), shipping orientation;
- 5) Address of the location where items are to be picked up by the LSP.
- 6) Documentation (e.g., Material Safety Data Sheet) regarding relevant compliance regimes, such as Export Control, Transportation of Dangerous Goods, and Environmental Protection;
- 7) Identification of any items that have been identified as Safety Important Components (SIC) or Protection Important Components (PIC).
- 8) Conditions or precautions to be respected when moving, loading/offloading, handling/sliding, and storing/marshaling to include, when required, specific provisions and controls to be performed and recorded while under the control of the LSP;
- 9) Documentation confirming that packaging is designed to protect components from damage and contamination, considering anticipated environmental conditions and multimodal (e.g., highway, ocean) handling/transit accelerations;
- 10) Packaging specification including confirmation of compliance with international packing standards (e.g., International Standard for Phytosanitary Measures (ISPM)-15, Conformance Européenne/CE certification for relevant package lifting appurtenances such as eyes/rings), agree barcoding requirements and regulations relating to packaging materials used. **NOTE: All packaging using wood products must comply with the requirements of ISPM-15;**
- 11) Definition of packaging/frame, when the components are packed or tarped, including any particular procedures for handling, moving, clean-up, maintenance, storage;

- 12) Specification for securing and hanging packages/frames including jacking/lifting/lashing conditions, procedures, and acceptable securing points;
- 13) Identification of specialized equipment/hardware (e.g., custom lifting fixture) interface requirements between each point of use within the supply chain. **NOTE: any specialized packing/handling frame or tool should be detailed in drawings, meet relevant domestic and international requirements (e.g., Occupational Safety and Health Administration, CE), and is subject to approval by LSP.**
- 14) Description of Interface between Seller and LSP (e.g., release conditions for loads, Seller's loading means, etc.);
- 15) Technical data concerning monitors (e.g., shock, vibration, tilt, acceleration, temperature) utilized to detect events during transit which may cause damage to components.

5.2.2 Pre-Shipment Deliverable Package No. 2

Pre-Shipment Deliverable Package #2 is to be provided no later than ninety (90) days prior to planned date of shipment.

Pre-shipment Deliverable Package #2 is to contain the following items:

- Written confirmation of the date goods will be ready for shipment or submit revised shipment date for approval.
- Contact information for Seller's Shipping/Logistics coordinator
- Fabrication value of goods (for insurance purposes-should not include destination site support services)
- Transport drawings with sufficient detail to facilitate lifting/lashing/stowage and approval of the operators (e.g., steamship line, air carrier).
- The following business documents (in English language):
 - a) **Pro-Forma**/commercial invoice on Seller's letterhead listing at a minimum:
 - Subcontract number
 - Description and quantity of goods
 - Value of goods
 - Incoterm 2010 rule
 - Schedule B number (for U.S. exports) or Harmonized System code
 - Country of origin
 - Export control determinations (e.g., "ECCN: EAR99, No Export License required")

- **Consignee: Note – If shipped to the ITER site, use the address below:**

ITER Organization
Route de Vinon sur Verdon, CS90 046
13067 St. Paul lez Durance CEDEX, France
Contact: Yanchun Qiao (+33-4-42-17-62-57;
Cell: +33-6-26-31-29-96) Yanchun.Qiao@iter.org

- **Duty Free Declaration**

Shipments on behalf of the ITER International Fusion Energy Organization (“ITER Organization”) for its official use are eligible for duty-free customs clearance under the Agreement on the Privileges and Immunities of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project, done in Paris on 21 November 2006 and ratified, accepted and approved by the People’s Republic of China, EURATOM (for the European Union and Switzerland), the Republic of India, Japan, the Republic of Korea and the Russian Federation. DIPLOMATIC SHIPMENT on behalf of the ITER Organization. FOR DUTY-FREE CUSTOMS CLEARANCE.

- **Consignor** (Seller’s name, address, and contact information)
- b) Itemized packing list on Seller’s letterhead detailing the following at a minimum for each package:
- Subcontract Number
 - Package number (sequential number assigned to each package.
 - Package type (e.g., wooden crate, item on pallet, etc.)
 - Seller’s equipment/component identification number(s)
 - ITER Pipe Support Identification Number (s)
 - Item Description
 - Quantity of each item
 - Gross Weight (kg)
 - Net Weight (kg)
 - Dimensions (cm)
 - Volume (m³)
 - Special Handling Instructions
 - Storage Instructions (e.g., indoor, conditioned space)

- **Declaration of Integrity**

The undersigned hereby certifies that the components and package(s) described on this Packing List meet the contractual requirements with the exception of any approved deviations and non-conformance reports specified in the associated documentation.

NOTE: The invoice, packing list and other documents, where appropriate, must be acceptable to the country's Customs agency. The LSP shall review submitted documents and request amendments where required. If amendments are requested, Seller must update and submit revised documents within seven (7) days.

- c) Export Control License(s) or other authorized documents if required.

5.2.3 Pre-Shipment Package No. 3

Pre-Shipment Deliverable Package #3 is to be provided no later than two weeks prior to planned date of shipment.

Pre-shipment Deliverable Package #3 is to contain the following items:

Evidence of appropriate proof testing and certification for any custom lifting apparatus that will travel with the item and be utilized during loading and unloading operations.

5.2.4 Pre-Shipment Package No. 4

Pre-Shipment Deliverable Package #4 is to be provided no later than one week prior to planned date of shipment.

Pre-Shipment Deliverable Package #4 is to contain the following:

1. Any remaining information needed to facilitate appropriate completion of transport documents such as Bills of Lading or Air Waybills.
2. Data elements and authorizations (e.g., Shipper's Letter of Instruction, Power of Attorney) required for LSP submission of electronic filings in the Automated Export System (AES) when necessary
3. Dangerous Goods Declaration if required for Transport.

5.2.5 Package Marking

The Seller is required to mark each package with the following

- Subcontract number
- Delivery address
- Consignor (Seller's name, address, and contact information)
- Package number (as identified on the packing list)

- ITER Pipe Support Identification Number(s)
- Gross Weight (kg)
- Net Weight (kg)
- Special Handling Instructions
- Lifting/Lashing/Jacking points
- Center of gravity (in 3 dimensions)

5.2.6 Deviations from Planned Date of Shipment

Seller shall immediately notify the TPO and procurement Officer, in writing, of any actual or potential change to the agreed-upon date of shipment.

6 **QUALITY ASSURANCE**

6.1 **Quality Program**

The Seller's Quality Program shall be implemented and sufficient to ensure that the quality of items produced, or services provided will meet all the requirements as stated in this document and as contracted. The Seller must produce the items or services in accordance with their quality assurance program as identified in their subcontract with the Company. Changes to the program that could affect the items or services must be approved by the Company in advance.

6.2 **Access for Source Surveillance Inspections**

As part of the Company's quality assurance program, source surveillance activities may be conducted at the Seller's facility or any sub-tier seller facility that the Company determines necessary to ensure quality objectives are met. Representatives of the Company, US Department of Energy, or other ITER-affiliated organizations (e.g., IO) may accompany the source surveillance team and inspectors as observers. Such surveillance may include auditing and monitoring of production processes, in-process inspection and controls, chemical or physical certifications, final inspection and tests, preparation for shipment, and review of certification data. The Seller shall provide the source surveillance team and inspectors, including observers, access to all data and operating areas pertinent to the subcontract without exception. Source surveillance by the Company representatives, source surveillance team, or inspectors shall not constitute equipment acceptance by the Company and shall in no way relieve the Seller of the responsibility to furnish acceptable items.

To ensure the safety of Company's representatives and observers that visit the Seller's facilities, the Seller shall provide relevant information about their facility safety procedures including, for example, safety glasses, hearing and respiratory protection, emergency preparedness, rally point, and general safety rules. Upon arrival, the Seller shall review typical workplace hazards with the representatives and discuss the applicable facility safety procedures.

6.3 Seller-Requested Deviation

The Seller may propose deviations from the specifications, drawings, or other technical or administrative requirements of this procurement. Where time is a consideration, the Seller may communicate the proposed deviation directly to the TPO (via e-mail correspondence), with a copy to the Company's Procurement Officer. The request should identify the affected items, drawing/specification number and revision number, a **description of the proposed deviation, and the engineering justification for it**. A form is provided to assist the Seller in requesting a Deviation from the company [3.1.2]. The Company's TPO will evaluate the technical aspects and document a recommendation (cannot be verbal) to the Procurement Officer, who will communicate acceptance or disapproval to the Seller.

NOTE: The acceptance of a deviation request in no way limits or affects the warranty provision of the subcontract. Such a request shall not establish a precedent or obligation to accept existing or future items not conforming to all provisions of the subcontract.

6.4 Non-Conformances

The Company expects to receive equipment items, components, materials, software, and documentation that conform to all codes, standards, specifications, and procedures in the subcontract. When a nonconforming condition is identified, the Seller shall follow the US ITER *Nonconformance Report Procedure* [3.1.3] to control the nonconforming item or process, document the condition and bring the issue to closure.

The Seller shall:

- 1) Identify and segregate when practical, the non-conforming item,
- 2) Stop any further work on the item until a decision is made,
- 3) Provide written notification of the discovered nonconformance and the discovery date (via email, copy of internal NCR form, US ITER NCR form partially filled out) to the TPO, with a copy to the Procurement Officer and QARO, as soon as possible but no longer than five (5) business days from discovery.
- 4) After discovery process is complete, provide any additional details, proposed dispositions, and justifications (as necessary) to the Company in a Nonconformance Report using US ITER's *Non-Conformance Report Form* [3.1.4].

NOTE: The issuance and acceptance of a nonconformance report in no limits or affects the warranty provision of the subcontract. Such a request shall not establish a precedent or obligation to accept existing or future items not conforming to all provisions of the subcontract.

Two categories of nonconformances are considered: Major and Minor. The categorization will be made by the Company with concurrence from the IO Technical Responsible Officer. Generally, a Major nonconformity is one that could affect a critical requirement, such as performance, safety, reliability, operability, traceability, interchangeability, or regulatory requirements. Minor nonconformances normally are those with no such impact.

Major Non-Conformance

Nonconformances identified as Major will require completion of a Root Cause Analysis (RCA). Following the RCA, the proposed remedial action for a major nonconformance shall be implemented only after written acceptance from the Company.

Minor Non-Conformance

If the Company decides the non-conformance is not a major non-conformance, the Seller shall take actions to resolve the non-conformance within its own quality system. However, the remedial action may only be implemented following written approval by the company.

Examples of minor nonconformances could include (but are not limited to) the following:

- Slight variance from a tolerance specified on a design drawing that has no impact on equipment form, fit, or function.
- Noncompliant cleanliness of material at receipt inspection that is remedied during fabrication by an approved cleaning process.
- Failure of packaging that did not result in damage to the material or equipment.
- Failure to adequately complete an administrative process (e.g., document review & approval matrix) that does not affect the quality of final product.
- Flow controller accuracy range not consistent with manufacturer's data sheet, but data was correctable after calibration of the device.

7 DELIVERABLES

The following deliverables shall be submitted according to a timeframe which supports the approved schedule for this work and subcontract closeout. These deliverables include nine (9) OKTA 1500 GM roots pumps as well as all documentation generated to show compliance and satisfactory completion of this statement of work and the associated technical specification.

7.1 Roots Pumps

7.1.1 Required Hardware Deliverables

Table 1 lists the items and quantities required for fulfillment of this statement of work and the associated contract.

Table 1. Required Supports Listed by Tab Number

Hardware Deliverable Identifier	Equipment Description	Quantity
HD1	Okta 1500 GM Roots Pumps	9
HD2	3 Phase, 400Vac cabling (for use with equipment in France), 50 meters in length	9 sets
HD3	Power supply with inverter	9 units
HD4	Variable Frequency Drive	9 units
HD5	Applicable Sensors	As needed
HD6	Communication port (Such as RJ 45)	9 (One for each pump)
HD7	Structural Supports	1 per pump delivered; 9 for main scope

7.1.2 Optional Scope Hardware

The company reserves the option to add the below listed hardware to the scope of this statement of work. Note that this hardware shall only be added as deliverables for this Statement of Work if written notification is given by the Procurement Officer. If this option is exercised, the company and Seller shall revise the contract accordingly.

Table 2. Optional Hardware Deliverables - Pumps

Optional Deliverable Identifier	Equipment Description	Quantity
OD1	Okta 1500 GM Roots Pumps	6 pumps
OD2	3 Phase, 400Vac cabling (for use with equipment in France), 50 meters in length	6 sets
OD3	Power supply with inverter	6 units
OD4	Variable Frequency Drive	6 units
OD5	Applicable Sensors	As needed
OD6	Communication port (Such as RJ 45)	6 (One for each pump)
OD7	Structural Supports	1 per pump delivered; six if additional pumping scope is exercised

7.2 Documentation

The documentation deliverables and the corresponding sections of this SOW are listed in the table below.

Table 3. Documentation Deliverables

Document Deliverable Identifier	Document Name	Referenced Section
DD1	Project Kick-Off Meeting Minutes	Section 4.1.1
DD2	Project Plan	Section 4.1.4
DD3	Progress Meeting Notes	Section 4.1.5
DD4	Helium Leak Test Procedure	Section 4.2
DD5	Contractor Release Note	Section 4.5.1
DD6	Certificate of Conformity	Section 4.5.2
DD7	Manufacturing Dossier	Section 4.5.3
DD8	Package Design Documentation	Section 5.1
DD9	Pre-shipment Transportation Documentation	Section 5.2
DD10	Quality Plan	Section 6.3
DD11	Deviation Requests (if applicable)	Section 6.5
DD12	Non-Conformance Reports (if applicable)	Section 6.6