



Release Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

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2016/11/22 11:10:35AM

Purchase Order: 2016-012-TSE-7001 MCC 9250 - VFD's & Soft Starters Enclosure

Supplier: Simark Controls Ltd. 10509 - 46 Street S.E., Calgary AB Canada T2C 5C2 Contact: Long Tran Telephone: 403-236-0580 Fax: 403-279-6553 E-mail: long.tran@simark.com Tax ID: Buyer: Cenovus FCCL Ltd. 500 Centre Street SE P.O. Box 766 Calgary, AB T2P 0M5 Currency: CAD Pay Terms: NET30 1st DWG Due: 16-12-2016 Ship Point: Calgary, AB Incoterm: FCA Calgary, AB AFE#: 16165217 Major/Minor: 8762-474 End Use: FC PLANT JDE PO #: 2016-012-TSE-7001 Insp. Level: 1	CONFIRMING ORDER - DO NOT DUPLICATE Total Price (All Taxes Extra): 28,209.00 Issue Date: November 25, 2016 This purchase order is issued to the seller subject to all conditions and instructions set forth herein and to the contents of the listed attachments Attachments Listed In Order Of Precedence Release Order Notes List of Technical Documents Seller Drawing and Data Required (SDDR) Drawing and Data Requirement Instructions Operating and Maintenance Manuals JI for Vendors - Data Book Requirements Inspection Requirements & Notification Form Expediting Requirements Packing, Storage & Shipping Instructions	All Communications To: Buyer: Sherry Ayres (403) 536-5038 E-mail: sherry.ayres@threestreams.com Mail Invoices To: See Purchase Order Notes Send Drawings, Data, Manuals To: Three Streams Engineering - Document Control Suite 401, 1925 - 18th Avenue N.E. Calgary, AB T2E 7T8 E-mail: tsedoccontrol@threestreams.com Deliver Equipment, Materials To: To Be Announced
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Authorized Owner's Agent

Signature

Date

Nov 23rd 2016

Printed Name

Eric Scachetti

Seller's Acceptance Of Order (Return Signed Copy)

One (1) copy of this order is to be duly signed and returned upon receipt. Retention for more than ten (10) working days shall constitute acceptance of this order in its entirety.

Signature

Date

Printed Name



Purchase Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

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Issue Date : 2016 November,25

Prices In CAD

Purchase Order: 2016-012-TSE-7001 MCC 9250 - VFD's & Soft Starters Enclosure

Item	Equipment Tag #	Quantity	Unit	Description	Ship Date	CWP Number	Unit Price	Total Price
001	W06-MCC-9250	1.00	each	<p>Nema 3R enclosure c/w backpan to include the followings:</p> <ul style="list-style-type: none"> - 200A main disconnect - 2x30HP VFD's as per datasheet. - 2x7.5HP 3 Phase, 480V, 60 Hz ABB Soft starter (PSE18-600-70) with I/O as per attached the PID. - 4 x Jog-Off-Auto selector switches mounted on panel door - 2 x 3 phase, 480VAC starter/contacter suitable for 1 hp c/w 2 N.O, 2 N.C. contacts and electronic overloads. - 2 x Off-Auto selector switches mounted on panel door - 2 x Green LED indicating lights mounted on panel door - 2 x Red LED indicating lights mounted on panel door - 480/120VAC Fused Control transformer - Input Power blocks, TVSS, Fuses and Fuse Holders. - Thermostatically Controlled Cooling/Heating. - Door Mounted Keypad for soft starters and VFD's - 2 x Ethernet adapter modules for VFD - Ethernet Cables as required - 1 x Stratix 2000 5 ports unmanaged ethernet switch - N-Tron-1002MC-LX-10 Media Converter - LED panel light c/w remote door switch - Panel receptacle - I/O terminal strips as required - Interposing relays as required - Fuses, Fuse Holders, Breakers, Wires, Wire Ducts c/w covers, Terminals, Lugs, tagging and Testing as required. - CSA certification for use in Non-Hazardous , general purpose location. <p>Tag ID(s): W06-MCC-9250</p> <p>Cost ID: 65 16165217-474EPGNRLPANL000000M</p>	2017/01/08		28,209.00	28,209.00
002	INSPECTION	1.00	lot	<p>Customer Inspection</p> <p>Tag ID(s): Inspection</p> <p>Cost ID: 65 16165217-474EPGNRLPANL000000M</p>			0.00	0.00



Purchase Order

2016-012 - FC W06 Hot Solvent

Three Streams Engineering

Issue Date : 2016 November 25

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Prices In CAD

Purchase Order: 2016-012-TSE-7001 MCC 9250 - VFD's & Soft Starters Enclosure								
Item	Equipment Tag #	Quantity	Unit	Description	Ship Date	CWP Number	Unit Price	Total Price
003	DOCUMENTATION	1.00	lot	Documentation as outlined in the SDDR and JH02-020 Rev 1 Tag ID(s): Documentation Cost ID: 65 16165217.474EPGNRLPANL000000M			0.00	0.00
				Line Items Total:				28,209.00
				VAT / GST (5%)				1,410.45
				Provincial Tax				0.00
				Purchase Order Total:				29,619.45



Release Order Notes

2016-012-TSE-7001 Rev 0

This order shall be in accordance with SOC # 400302

Release Order Inspection Level 1

Documentation Requirements:

Vendor Documentation as per the Seller Drawing and Data Required (SDDR) must be accompanied with a Document Transmittal List, listing all documents being submitted including reason for the submittal. Transmittal and all documentation to be sent to the following submittal address:

Three Streams Engineering
#401, 1925 - 18th Avenue N.E.
Calgary, AB T2E 7T8
Attn: Document Control
Email: tsedoccontrol@threestreams.com

To avoid potential delays in payment, please ensure that One (1) copy of the vendor documentation accompanies all shipments.

Shipping Instructions:

All shipments require a Shipping Release Authorization form.
Please contact Keith Coish at (403) 513-5804 or email keith.coish@threestreams.com for shipping instructions.

Packaging and Marking Additional Instructions:

Should (1) one tag consist of several components, these components **must:**

- a. Be assembled as one unit prior to shipment and be tagged accordingly
- OR
- b. All components must be bagged (boxed) and tagged as a complete individual unit. All such bags/boxes shall be clearly marked on the outside with the Tag and complete description of the product contained therein.

Invoicing:

Purchase Order prices are in Canadian Funds, which are fixed, firm and not subject to revision nor escalation or any adjustments due to currency fluctuations through delivery.

Any and all additional costs or deducts for any reason pertaining to this Release Order, whether through the Request for Information (RFI) process or otherwise, must be approved in writing prior to the work being performed. If for any reason, there are additional costs or deducts associated with an RFI, then the RFI shall show the amount in question. If this is not possible at the time the RFI is submitted, then a revised RFI must be submitted with the additional costs or deducts for approval prior to any work being performed unless instructed otherwise. Cenovus will not be liable or responsible for any of these un-approved costs.

To avoid delays in payment, please ensure that the Release Order Number is included in your invoice. In addition, no invoice will be approved for payment unless the vendor acknowledgement has been executed and returned. Invoicing must be submitted as noted in the above address and instruction.

INVOICING INSTRUCTIONS

Please submit all invoices electronically through the Open Invoice system. If you do not have an account, please contact elInvoicingOnboarding@cenovus.com to arrange setup and training.

Cenovus FCCL Ltd.
C/O Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, AB, Canada T2E 7T8
Attn: TSE Project Invoicing

If you have urgent invoicing requirements prior to setup and training, please email your invoices directly to Cenovus FCCL Ltd at Accounts.payable@cenovus.com clearly indicating:

“Attention To: Three Streams Engineering” in the email body

Customer Name: Cenovus FCCL Ltd. As Operator for FCCL Partnership

Customer Site: Cenovus FCCL Ltd. As Operator for FCCL Partnership

Customer Department: Accounts Payable

To ensure prompt payment, invoices must include the following information:

Release Order number, Item number, Quantity, Material description, Tag numbers (if any), Unit price and extension, Total invoice value, GST Registration Number (Canadian suppliers only), AFE# and cost codes.

All invoices will be paid net 30 days from receipt of a complete and accurate invoice from the Seller (not the date of the invoice). When more than one invoice is issued against an order, the final invoice shall be marked "Order Complete".

Terms of Payment: Progress: Net 30 Days as follows:

- 90% upon Shipment or Readiness to Ship
- 10% upon approval of Final Documentation per the Supplier Data and Drawing Requirements (SDDR) & the Vendor Databook Instructions

Cancellation Charges:

Per SOC # 400302

Change Orders:

Any and all additional costs or deducts for any reason pertaining to this Release Order, whether through the Request for Information (RFI) process or otherwise, must be authorized and approved in writing with a Release Order revision prior to the work being performed unless instructed otherwise in writing.

If for any reason, there are cost or delivery impacts associated with an RFI, the RFI shall be submitted with a Change Order showing the impacts. The Change Order must be approved in writing prior to any work being performed unless instructed otherwise. Cenovus will not be liable or responsible for any of these un-approved costs.

Proj. No.: 2016-012
Req. No.: TSE-7001
Revision: 0

[illegible]

Notes:



THREE STREAMS
ENGINEERING DIVISION
Foster Wheeler Canada Ltd

DOCUMENT NUMBER: FC1-46-DS-W06-VFD-9240A/B

TAG No.: W06-VFD-9240A/B PAGE 1 OF 2

CLIENT: CENOVUS

JOB No.: 2014-462

MR No.: 2016-012-TSE-7001

SMALL VARIABLE FREQUENCY DRIVE

SPECIFICATION: TR-46-SPC-00-006-01

PROJECT: FC W06 Hot Solvent

SERVICE: Propane Injection Pump

MANUFACTURER: ABB

SIZE: 30HP

QUANTITY: 2

NOTE: INFORMATION MARKED WITH ■ TO BE COMPLETED BY THE VENDOR

SITE CONDITIONS

ALTITUDE: 670M m (above sea level)
AMBIENT TEMPERATURE MAX.: 40 °C, MIN.: -40 °C

○ UNUSUAL CONDITIONS:

● DUST

○ CORROSIVE

○ GASES:

○ OTHER:

ENCLOSURE

● NEMA 1

○ OTHER:

POWER SYSTEM

VOLTAGE: 480 V, THREE-PHASE, 60 Hz

GROUNDING

● HIGH RESISTANCE AT: 2 A CONTINUOUS

○ OTHER:

FAULT LEVEL

ESTIMATED: 35 kA (SYM)

□ PROPOSED: kA (SYM)

CONTROL POWER

● 120V AC, 1-PHASE, 60 Hz

● OTHER: Unit Supplied 24VDC

EQUIPMENT REQUIRED

● DRIVE

○ OUTPUT REACTOR

○ INPUT BREAKER

○ SWITCH/FUSE

○ INPUT CONTACTOR

○

○ ISOLATING TRANSFORMER

○

○ INPUT REACTOR (X=3%)

○

MOTOR DATA

VOLTAGE: 480 V PHASE: 3 SIZE: 22.4 kW

FLA.: 38.1 A S.F.: 1.15

MOTOR DE-RATING: % LEAD LENGTH: m

INSULATION CLASS/TEMP. RISE:

OTHER DATA:

RE-ACCELERATION AFTER POWER LOSS

○ AUTOMATIC FROM PRESENT SPEED

○ AUTOMATIC AFTER TIME DELAY

● EXTERNAL SIGNAL

○

ACCELERATION TIME: s DECELERATION TIME: s

LOAD DATA

TYPE

○ ESP ○ CENTRIFUGAL ● PROGRESSING CAVITY

○ RECIPROCATING No. STROKES: ○ FLYWHEEL

DEVICE

○ COMPRESSOR

○ FAN

● PUMP

○ SPEED REDUCER

RATIO:

SPEED RANGE: TBA rpm to TBA rpm BASE: 1750 rpm

LOAD CHARACTERISTIC

○ CONSTANT TORQUE STARTING TORQUE: Nm

○ CONSTANT POWER RUNNING TORQUE: Nm

● VARIABLE TORQUE ○ HIGH STARTING TORQUE

SPECIAL DUTY

○ HIGH SHOCK

○ PULSATING

BREAKING/REGENERATION

○ BREAKING REQUIRED

○ REGENERATION REQUIRED

DRIVE INFORMATION

RATING: kVA, V, 44 A

RECTIFIER

○ DIODE

○ SCR

INVERTER

○ IGBT

○ GTO

○ OTHER:

PWM SWITCH RANGE: Hz TO Hz

FURTHER DESCRIPTION: ABB Model# ACS550-U1-059A-4HD

POWER LOSS RIDE THROUGH: ms

HEAT DISSIPATION (at 60 Hz, 100 % load): W □ FANS INCLUDED

DIMENSIONS

L: 262 mm W: 203 mm H: 688 mm

WEIGHT: 24 kg

FULL SPEED DATA

NOISE: dBA AT 1 METER

EFFICIENCY: %

POWER FACTOR: %

INPUT CURRENT HARMONICS DATA:

DRIVE PROTECTION FROM INPUT SPIKES:

RISE TIME OF OUTPUT VOLTAGE: μs

ANALOG OUTPUTS:

NOTES: 1. All inputs and outputs to be wired by vendor to a separate terminal strips.

2. Vendor to ensure equipment is rated for the class of wire to be used.

3. VFD's to be mounted in a Nema 3R enclosure.

REV	DESCRIPTION	DATE	BY	LDE	PE	REV	DESCRIPTION	DATE	BY	LDE	PE
0	Issued for Purchase	2016/11/16	ZA	ZA	ZA						



THREE STREAMS
ENGINEERING DIVISION
Foster Wheeler Canada Ltd

DOCUMENT NUMBER: FC1-46-DS-W06-VFD-9240A/B

TAG No.: W06-VFD-9240A/B PAGE 2 OF 2

CLIENT: CENOVUS

JOB No.: 2016-012

MR No.: 2016-012-TSE-7001

SMALL VARIABLE FREQUENCY DRIVE

SPECIFICATION: TR-46-SPC-00-008-01

PROJECT: FC W06 Hot Solvent

SERVICE: Propane Injection Pump

MANUFACTURER: ABB

SIZE: 30HP

QUANTITY: 2

NOTE: INFORMATION MARKED WITH ■ TO BE COMPLETED BY THE VENDOR

■ DESCRIPTION OF DIGITAL LINK INTERFACE AND DATA

COMM. PROTOCOL

- | | |
|-----------------------------------|---|
| <input type="radio"/> CONTROL NET | <input type="radio"/> DEVICE NET |
| <input type="radio"/> MODBUS RTU | <input checked="" type="radio"/> ETHERNET |
| <input type="radio"/> PROFI BUS | <input type="radio"/> _____ |
| <input type="radio"/> DH+ | <input type="radio"/> _____ |
| <input type="radio"/> RIO | <input type="radio"/> _____ |

DATA TRANSFER SPEED: _____

TRANSFERABLE DATA: _____

HARDWARE AND CABLE REQUIREMENTS: _____

DRIVE NETWORKING OPTIONS: _____

■ OTHER DRIVE FEATURES

- ☒ Door mounted keypad
- ☒ CSA Approvals (or equivalent)
- ☒ Bottom Line Access
- ☒ Bottom Load Access
- ☒ Door mounted J-O-A selector SWITCH
- ☒ Venting & space heater for enclosure
- ☒ Door Mounted 200A Disconnect Switch

ADDITIONAL FUNCTIONS:

- FREQUENCY RANGE: _____ TO _____ Hz
- ☐ MOTOR PROTECTION RELAY: _____
 - ☐ GROUND FAULT RELAY: _____
 - ☐ THERMAL OVERLOAD RELAY: _____
 - ☐ THERMISTOR RELAY: _____
 - ☐ RTD MONITOR: _____
 - ☐ REMOTE/LOCAL SELECTOR SWITCH (in MCC)
 - ☐ START BUTTON (in MCC) ☐ STOP BUTTON (in MCC)
 - ☐ LOCAL SPEED CONTROL (in MCC)
 - ☒ 4-20 mA SPEED CONTROL
 - ☒ 4-20 mA SPEED INDICATION
 - ☒ CONTROL TRANSFORMER: _____ VA

OTHER REQUIREMENTS: _____

NOTES:

REV	DESCRIPTION	DATE	BY	LDE	PE	REV	DESCRIPTION	DATE	BY	LDE	PE
0	Issued for Purchase	2016/11/16	ZAM	ZAM							



SELLER DRAWING AND DATA REQUIREMENTS (SDDR)	REV	DATE	DESCRIPTION	BY
FC W06 Hot Solvent MCC-9250 VFD and Soft starter enclosure	0	16-Nov-16	Issued For Purchase	ZA

2016-012-TSE-7001

DOCUMENT DESCRIPTION	WITH QUOTE	AFTER ORDER PLACEMENT					
		FOR APPROVAL ¹			CERTIFIED/AS BUILT/FINAL ²		
	QTY/TYPER	QTY/TYPER	WKS ³	DATE	QTY/TYPER	WKS ³	DATE
DRAWINGS							
General Drawings and Diagrams							
Drawing Index							
Bill of Materials		1P	3	ARO	1P/D/M	2	WS
Civil Drawings							
Building / Architectural Drawings							
Structural Drawing Details							
Foundation / Skid Drawings							
P.Eng Stamped Building Schedules							
Support / Foundation Loading Diagrams							
Anchor Bolt Location & Drawings							
Electrical Drawings							
Electrical Equipment Layout Drawings		1P	3	ARO	1P/D/M	2	WS
Electrical Interconnection, Schematics and Wiring Diagrams		1P	3	ARO	1P/D/M	2	WS
Junction Box / Panel Layouts		1P	3	ARO	1P/D/M	2	WS
Motor Drawings / Diagrams							
Instrumentation Drawings							
Instrument Dimensional Drawings							
Mechanical Drawings							
General Arrangement Drawings							
Detail Fabrication / Shop Drawings							
Assembly / Erection Drawings							
Piping Spool Drawings							
HVAC Schematic / Flow Diagram							
Process Drawings							
Process Flow Diagrams							
Piping and Instrument Diagrams							
DATA							
General and Miscellaneous Data							
Engineering Calculation Sheets - Instrument Sizing							
Data Sheets - Marked Up by Vendor							
Performance Curves							
Equipment Catalog Data		1P	2	ARO	1P/D/M	2	WS
Weight & Dimensions		1P	2	ARO	1P/D/M	2	WS
Lifting Study							
Assembly / Disassembly Sizes & Weights Data							
Production Schedule		1P	2	ARO			
Nameplate Photos							
Operating Instructions					1P/D/M	2	WS
Maintenance, Lubrication / Fluid & Materials Requirements							
Priced Spare Parts for Start-up and 2 Years Operations							
Procedures, Reports and Certificates							
Quality Control Procedures							
WPS, PQR and Weld Procedure Summary							
Shipping, Handling & Storage Procedures					1P/D/M	2	WS
Installation / Erection Procedure							
Inspection Test Plan (ITP)							
CRN							
NDE Maps							
Non-Destructive Examination (NDE) Reports							
WPS Log							
Welder Log & Qualification							
Weld Map							
Material Test Reports (MTR's) or Mill Certificates ⁶							
PWHT Report and Charts							
Hydrostatic Test Gauge Certificate							
Hydrostatic Test Report / Certificate							
Completed and Signed ITPs							
Painting, Coating and Lining Inspection Reports							

SELLER DRAWING AND DATA REQUIREMENTS (SDDR) FC W06 Hot Solvent MCC-9250 VFD and Soft starter enclosure 2016-012-TSE-7001	REV	DATE	DESCRIPTION	BY
	0	16-Nov-16	Issued For Purchase	ZA

DOCUMENT DESCRIPTION	WITH QUOTE	AFTER ORDER PLACEMENT					
		FOR APPROVAL ¹			CERTIFIED/AS BUILT/FINAL ²		
	QTY/TYPE	QTY/TYPE	WKS ³	DATE	QTY/TYPE	WKS ³	DATE
MTR Map							
Bolt Torque Inspection Report							
All Code Required Regulatory Forms							
Components Rating vs. Application Area Classification							
Non-Conformance Report (NCR) Log							
CSA / Canadian & Alberta Electrical Code Approval					1P/D/M	2	WS
HAT / FAT/ Function Testing Procedure							
Deficiency Punch List / Inspection Release							
RFI's & RFI Log							
Any other Code Required documents - NACE							
Additional Reports and Certificates - Mechanical							
Running Performance Test Report							
NPSH Test Report							
Letter / Certificate of Material Compliance							
Dismantle and Inspection after Test Report							
Report Carbon Equivalent Factor							
Noise Level Test Reports / Certificates							
Vibration Test Reports							
Dimensional Check Report							
Shipping and Packing Report							
Additional Reports & Certificates - Electrical							
Electrical Equipment List							
Function Test / Run Test / Motor Test Reports							
Megger Test Records							
Motor Performance Curve							
Electrical Circuit Test Record							
Shutdown Key							
Additional Reports & Certificates - Instrumentation							
Instrument Mechanical Run or Dynamic Test Records							
Instrument Index							
PSV Record							
Calibration Certificate							
VENDOR DATA BOOK ⁴		1P			1P	2	AS
MUD COPY ⁵					1H		WS

- NOTES**
- All drawings "For Approval" must be approved by Three Streams. Three Streams will use the following codes listed below. If re-issue is required drawings must be re-issued in a timely manner from the vendor.
Code A: Approved without exception. Proceed with fabrication and issue final drawings
Code B: Approved except as marked. Proceed with Fabrication and re-issue drawings
Code C: Not approved. Revise drawings as marked and re-issue for approval.
Code D: Not required for review. Received for information
 - All documents listed under "Certified/As Built/Final" to be supplied for approval by Three Streams prior to inclusion in final data book as per "4". Vendor to provide as-built stamped drawings for all purchaser supplied construction drawings.
 - Vendor to provide/confirm weeks and committed dates.
 - The vendor data book supplied to Three Streams is to contain all of the documents listed above under "Certified/As Built/Final" that are marked with "D". All documents must be Code A or Code D. Data book must be in the format specified.
 - The Mud Copy which gets shipped with each equipment is in addition to the Vendor Data Book. The documents above marked with "M" are the minimum requirements for the Mud Copy. An electronic copy of the Mud Copy should be sent to Three Streams prior to shipment for approval c/w photo verification of inclusion. Any items not included in the Mud Copy must be noted as deficiency and approved before shipment. THE COVER SHEETS OF MUD BOOKS MUST CONTAIN THE CWP#, PO# and EQUIPMENT TAG#.
 - MTRs for ship loose material shall be included in Mud Copy. MTRs of all other items shall be included in Vendor Data Book.
 - Costs of dwgs and data to be included in quotation. Client reserves the right to withhold 10% of purchase price until dwgs and data are received.

LEGEND				ACCEPTANCE	
FORMAT FOR SUBMISSION		DATE CODES		Vendor acceptance of above document requirements and timelines	
H	Hardcopy	ARO	After Receipt of Order	Signature	Date
E	Electronic Copy - Native (e.g.. *.dwg)	AS	After Shipment		
P	Electronic Copy- PDF	BS	Before Shipments		
M	Copy to be included in Mud Copy - min reqmnts	WS	With Shipment		
D	Copy to be included in Vendor Data Book				

DRAWING & DATA REQUIREMENT INSTRUCTIONS

(In the event of an Order, the following will be applicable):

1. Supplier shall submit all drawing and data requirements as outlined in the attached Drawings & Data Requirement Form. This schedule of data requirements shall be fulfilled before rendering final invoices.
2. All documents must show equipment numbers, Purchase Order numbers, and Supplier's own title, drawing and revision numbers.
3. Supplier shall submit all drawings and data in English.
4. Dimensions, weights, and measures for drawings to be in SI Units.
5. All documents shall be submitted to:
Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, Alberta T2E 7T8

Attention: Document Control
Email: tsedoccontrol@threestreams.com
6. One (1) field copy of all Record Data is to be shipped with the equipment. This shall include all documents as listed in the Seller's Drawing and Data Requirements (SDDR). The Supplier shall make every reasonable attempt to have all requested data included.
7. Drawings and data approval does not relieve Supplier of his responsibility to meet purchase order conditions relating to duty specifications, material design or construction, and delivery requirements.
8. Supplier shall submit a set of electronic files of the final "Certified Correct" Supplier data and other final Supplier document in addition to the regular submittal of Reproducible and hard copies.
9. Final Electronic data format, including drawings, shall be Acrobat file: pdf.
10. The Supplier will abide by the following notes when submitting drawings to the buyer:
 - All final submissions shall be Certified As-Built drawings and documentation.
 - All inserts and documents in the manuals by Suppliers shall be Certified and As-Built drawings, documents and information.
 - Final Drawings are to be certified and show, adjacent to the title block; customers purchase order number and manufacturers' serial number.

OPERATING AND MAINTENANCE MANUALS

Operating instructions shall include:

- a. Simplified flow diagrams showing capacity of equipment, and key valves and instructions required for starting and stopping equipment.
- b. Descriptions of how equipment operates, as well as normal operating conditions to be expected, alarm conditions, and abnormal operating parameters.
- c. Caution notes as to dangerous or critical situations, which may occur due to poor operating procedures or malfunction of equipment.
- d. Trouble-shooting check lists.
- e. Shutdown: Describe in detail how the equipment is shutdown under normal and emergency conditions and prepared for maintenance.
- f. Safety, alarm shutdown - safety practices should be included in all procedures in every section of manual. A drawing should be included showing the interconnection of alarms and shutdown.
- g. Appendix of key drawings and schedules.

Maintenance instructions shall include:

- a. Pictures, diagrams and procedures showing means of disassembly, calibration, repair and adjustment for all components.
- b. Expanded views with parts lists of each item of assembled equipment.
- c. Normal routine preventative maintenance procedures and scheduling.
- d. Lubrication and gland packing schedules for all equipment.

Composite Instruction Manuals

A complete assembled manual, which includes all installation, calibration, maintenance instruction and spare parts identification for all devices supplied on the Purchase Order. The cover sheet will list the Purchase Order number and revision, and all Tag Numbers for all devices supplied on the Purchase Order.

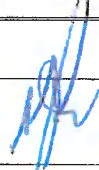
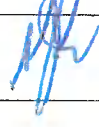
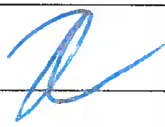


Document No. JI-02-020

Document Type: Job Instruction

Applicable to: CVE Purchase Orders

Job Instruction for Vendors - Data Book Requirements

Rev.	Date	Reason for Issue	Prepared By	Checked By	Approved By
0	2014-08-06	Incorporated for all Cenovus Projects	PMK		
1	2016-08-05	Updated corporate logos and references	MP		



JI FOR VENDORS – DATA BOOK REQUIREMENTS

Document No.
JI-02-020

Rev.1

Page 2 of 6

1.0 PURPOSE

The purpose of this JI is to provide instruction on the preparation and submittal of Vendor Data Books by the Vendor to TSE Document Control.

2.0 DEFINITIONS AND ACRONYMS

Code A	Approved without exception. Proceed with fabrication and issue final drawings.
Code B	Approved except as marked. Proceed with fabrication and reissue drawings.
Code C	Not approved. Revise drawings as marked and reissue for approval.
Code D	Not required for review. Received for information
TSE	Three Streams Engineering Engineering Division (Amec Foster Wheeler)

3.0 WHAT IS TO BE INCLUDED IN THE DATABOOKS

All documents listed in the SDDR must be included in the Vendor Data Book with acceptance Codes A and D only. All documents must be "Certified/As Built/Final". Refer to the "Vendor Documentation Flow Chart" for details of TSE/Vendor approval procedures.

4.0 FORMAT OF DATA BOOKS REQUIRED

The Vendor is required to submit ONE properly bookmarked electronic copy (single merged PDF) of the final Vendor Data Book to TSE Document Control through email or uploaded to the TSE FTP site for approval. The Vendor Data Book will then undergo a squad check review and will be returned to the Vendor with Coding listed above. The Vendor will make the required revisions and resubmit the Vendor Data Book if the squad check review is Code B or C. This process will be repeated until the final Vendor Data Book is Code A approved.

NOTE: A separate set of Vendor Data Books are required for EACH tagged piece of equipment, except for Bulk Items such as SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction). For instance, if the purchase order has 2 tags, P-2010 and P-2011, two separate Vendor Data Books should be provided for each tag; specifically, one Vendor Data Book PDF for P-2010 and one Vendor Data Book PDF for P-2011.

Bulk Items, SP Items and Instrumentation will have ONE DATA BOOK PER PO# (PDF). See **7.0 SPECIAL CASES** of this job instruction.



5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS

The Vendor Data Book will contain the following:

COVER PAGE

TABLE OF CONTENTS

Before submitting the final Vendor Data Book, Vendors shall submit a Table of Contents (PDF) formatted according to the five sections listed below. The Table of Contents will undergo a squad check review. Once the Table of Contents has been squad check reviewed as Code A (see **2.0 Definitions and Acronyms** of this job instruction), the final Vendor Data Book can be submitted.

SECTION 1: PURCHASE ORDER

This section shall contain:

1. The latest revision of the purchase order
2. The latest SDDR form from the purchase order

NOTE: If multiple POs are present (only applies to Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters, see **7.0 SPECIAL CASES** of this job instruction), they shall be sorted in ascending and numerical order.

SECTION 2: DATA SHEETS

This section shall consist of:

1. The Certified/As Built/Final Data Sheet

NOTE: For Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction) for which multiple tags are included in the data book, the data sheets are to be sorted in alphabetical and then numerical order. It is imperative that a separate data sheet be created for each Tag number assigned to equipment.

SECTION 3: AS BUILT DRAWINGS AND CALCULATIONS

This section shall contain ALL Certified/As Built/Final:

1. Drawings (Except for those pertaining to the quality control section)
 - a. Organized by type of drawing (i.e., Mechanical, Electrical, etc.), then by Tag number alphabetically, and then numerically
2. Calculations
 - a. Organized by type of calculation (i.e. Mechanical, Electrical, etc.), then by Tag number alphabetically, and then numerically.



SECTION 4: CATALOGUE DATA AND MANUALS

This section shall contain:

1. All catalogue data
2. All manuals
 - a. Manuals need to be separated with a cover sheet indicating:
 - i. Name of original equipment manufacturer
 - ii. Name of Vendor (Supplier), if different than that of manufacturer
 - iii. Title of the catalogue and/or manual
 - iv. Tag number(s) that the catalogue and/or manual is associated with (Example: Fisher-Instrument Supply regulators 67C Series Catalogue Data (FV-1315, FV-1316, FV-1320, FV-1485, HV-1310, TV-101)
3. All Spare Parts Lists
4. Long Term Storage Requirements

SECTION 5: QUALITY CONTROL DOCUMENTS

This section shall contain the following types of documentation:

- ABSA Data Reports
- Name Plates
- Inspection and Testing
- Welding Procedures
- Qualifications and Maps
- NDE Testing and Hydro-testing
- Material Records
- Travel Sheets
- Bill of Materials
- Packing Slip

Documents shall be separated with a colored cover sheet indicating the content of the documents (i.e. Test Reports, etc., matching the Table of Contents), as well as the tag number for each document.

6.0 ELECTRONIC COPY FORMAT

The Electronic Vendor Data Book (PDF) is to meet the following requirements:

1. One electronic copy is to be provided per Data Book that will contain ONE properly bookmarked PDF and named by Tag ID or PO Number (for Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction).
2. The electronic copy can be submitted as a PDF to TSE Document Control through email, CD, or uploaded to the TSE FTP site.



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3. All pages must be rotated upright for reading.
4. Within Section 4 (Catalogue Data and Manuals) of the Vendor Data Book, each catalogue data and manual cover sheet must be bookmarked by Manufacturer, Title and Tag ID (if more than one tag is present). Example: Sulzer Pumps – Horizontal Multi-Stage Pumps.
5. Within Section 5 (Quality Control Documents) of the Vendor Data Book, the PDF will be bookmarked on each tab or cover page indicating the document content (i.e. MTR's, Test Reports, etc., matching the Index).
6. The electronic copy shall contain all of the information into a single merged properly bookmarked PDF per Tag ID or PO Number, as per the requirements above, with bookmarks referencing the five section names and contents within each section.
7. Data sheets must be bookmarked by Tag ID when more than one data sheet is present.
8. Drawings must be organized by type of drawing or calculation (i.e., Mechanical, Instrumentation, etc.), and then by Tag ID (if more than one tag is present).

7.0 SPECIAL CASES

7.1 PACKAGED EQUIPMENT

Packaged equipment contains multiple pieces of equipment that are assembled, or work together. As a general rule, various tag identification numbers and corresponding data will be included within the packages.

The following steps shall be taken by the Vendor to ensure proper turnover of "packaged equipment" data.

1. A Vendor Data Book (PDF) will be created for the whole "package". Each tag number will be bookmarked within the PDF file of the package Vendor Data Book.
2. A Vendor Data Book (PDF) will ALSO be created for EACH type of tagged equipment that is within the package and submitted per **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction. The exception to this will be Bulk Items, SP Items, Instrumentation, and identical items such as glycol heaters (see **7.0 SPECIAL CASES** of this job instruction).



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7.2 INSTRUMENTATION

For purchase orders containing Instrumentation only, the Vendor does not need to submit separate data books per tag number to TSE Document Control. The Vendor shall submit one data book (PDF) per purchase order with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

7.3 NON-TAGGED EQUIPMENT PURCHASE ORDERS

For purchase orders containing non-tagged equipment only (e.g., manual valves), the Vendor shall provide one data book per purchase order (PDF) with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

7.4 BULK ITEMS/SPECIALTY ITEMS (SP's) PURCHASE ORDERS

For purchase orders containing Specialty Items only (SP) and Bulk Items (which includes manual valves, pipes, fittings, and glycol heaters), the Vendor does not need to submit separate data books per Tag Number to TSE Document Control. The Vendor shall submit one data book per purchase order (PDF) with the same structure as described in **5.0 VENDOR DATA BOOK CONTENT REQUIREMENTS** of this job instruction.

INSPECTION REQUIREMENTS

1.0 General

- 1.1 Inspection is the selective review, observation and evaluation of engineering, procurement, manufacturing operations, quality control systems and programs to determine the Seller's compliance with contractual quality requirements.
- 1.2 The following inspection classes are an integral part of this Purchase Order. The quality control systems and programs, to determine the Seller's compliance with contractual quality requirements, shall not relieve the Seller from any obligation to comply with the requirements of this Purchase Order.
- 1.3 The Seller's price shall take into account these Inspection Requirements.

2.0 Scope

- 2.1 When material and/or equipment (goods) covered by this Purchase Order are subject to shop inspections by the Buyer, DO NOT SHIP prior to release by the Buyer's Inspection Representative.
- 2.2 The Buyer's Inspection Representative shall have the right to witness tests and inspect the goods at Seller's plant(s) or Seller's sub-suppliers plant at any time during manufacture. Seller or Seller's Sub-suppliers shall provide access to, and copies of Quality Assurance Manuals, plans and records, controlled copies, if so requested.
- 2.3 The Seller shall include in any Order to a sub-supplier those specifications included with this Purchase Order, which governs the manufacturing or testing of the goods produced by each sub-supplier.
- 2.4 When in the Buyer's opinion an initial inspection visit will be beneficial in achieving a quality product, it will be indicated on the quality surveillance plan and, in such cases, fabrication is not to commence until this meeting is held. Seller's management personnel who are responsible for the quality requirements shall participate in the initial quality surveillance.
- 2.5 The Seller shall furnish the Buyer's Inspection Representative with unpriced copies of their Purchase Orders for plates, forgings, pressure containing parts and fabricated sub-assemblies during the first quality surveillance visit.
- 2.6 The Buyer's Inspection Representative, upon sufficient notice to Seller, shall be allowed access to Seller's sub-suppliers' quality control and quality verification records in order to review compliance to the specifications and applicable codes and/or standards.
- 2.7 Seller shall provide an Inspection and Test Plan detailing processes involved in the supply and manufacture of the equipment including methods of and procedures for verification. This shall include all major Sub Vendors. Each (ITP) shall include, as a minimum, all manufacturing functions, a list of specifications to be met, a description of tests to ensure compliance and identify who will perform verification of tests.
- 2.8 The Buyer shall have the right to conduct and carry out external audits for compliance with the approved Quality Program or Quality Plan.
- 2.9 Seller shall provide a safe working environment for Buyer's representative(s) and shall alert Buyer's representative to all known potential hazards.
- 2.10 Seller shall assure that the quality of the equipment/materials provided directly or indirectly are in complete accordance with the Purchase Order and its referenced specifications and all attachments and amendments thereto are met.

3.0 Responsibility

- 3.1 The responsibility to properly manufacture and thoroughly inspect the material and/or equipment rests solely with the Seller. This responsibility shall include material and/or equipment received from or fabricated by the Seller's sub-suppliers.
- 3.2 The fact that material or equipment may have been surveyed and released to ship by the Buyer's Inspection Representative does not relieve the Seller of the responsibility to supply material or equipment that meets all the requirements specified in the Purchase Order documents. Final inspection and acceptance will be at the jobsite.

4.0 Definitions

4.1 Quality Surveillance Plan

The quality surveillance plan (Item 6.0) reflects the minimum surveillance activities but in no way limits the activities that may be attended by the Buyer's Inspection Representative. The final witness and hold points will be established during the initial inspection.

4.2 Witness Points (Observations or Verification Points)

Verification points are defined as critical steps in manufacturing and testing where witnessing or verification to confirm compliance with the quality requirements is considered necessary. The Seller is obligated to advise the Buyer's Inspection Representative of witness point dates in advance. The Seller may proceed past a verification point providing permission to proceed is requested and obtained in writing from the Buyer's Inspection Representative.

4.3 Hold Points

Hold points are defined as critical steps in the manufacturing or testing where witnessing by the Buyer's Inspection Representative is mandatory. Fabrication or testing must not proceed past a hold point. The Seller is obligated to advise the Buyer's Inspection Representative of hold point dates in advance and in sufficient time to permit Buyer's Inspection Representative to attend on the required hold point date.

4.4 Inspection Levels

The Inspection Levels (page 3) reflect the minimum surveillance activities but in no way limits the activities that may be attended by the Buyer's Inspection Representative. The final witness and hold points will be established during the initial inspection.

To assist the Seller in understanding the Buyer's inspection level system, the following brief definitions are offered. The Buyer retains the right to change the level during the duration of the fabrication cycle.

5.0 Note:

The Inspection Company will be appointed by the Owner and/or Owner's Representative, and the Vendor advised.

6.0 Quality Surveillance Levels

☐

Level 0 Quality Surveillance Not Required

☒

Level 1 Final Quality Surveillance

- SCOPE:**
1. Final inspection upon completion of manufacture.
 2. Documentation review.
 3. Final Inspection Release
 4. Project Expediting

☐

Level 2 Limited Scope Quality Surveillance

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Pre-inspection meeting
 3. Visits as necessary for inspection during manufacture
 4. Witness of hold points and final testing
 5. Documentation review
 6. Final inspection release.
 7. Project Expediting

☐

Level 3 Full Scope Quality Surveillance

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Agreed Quality Plan prior to manufacture
 3. Pre-inspection meeting
 4. Frequent monitoring and inspection at discretion of Buyer and/or Representative during manufacture
 5. Witness of all testing
 6. Full documentation review
 7. Final inspection release.
 8. Project Expediting

☐

Level 4 Resident Quality Surveillance

- SCOPE:**
1. Approval of manufacturer's QC system prior to award
 2. Agreed Quality Plan prior to manufacture
 3. Pre-inspection meeting
 4. Continual monitoring and inspection during manufacture
 5. Witness of all testing
 6. Full documentation review
 7. Final inspection release.
 8. Project Expediting



Inspection Notification TR-80-FRM-00-100-01

Project : _____

Project Number: _____

P.O. No.:		Date of Inspection:	
Description:		Surveillance Level:	
		Notification No.:	

Supplier		Sub-supplier	
Name:		Name:	
Address:		Address:	
Contact Name:		Contact Name:	
Phone:		Phone:	
E-mail:		E-Mail:	

Equipment Tag No(s)		

Inspection Information	
Activity:	
ITP Item:	
Location:	
Time:	

Additional Comments:

Notification shall be sent to:	
QSC (email):	
QSR (email):	
Package Expeditor (email):	
QSC Lead (email):	



Inspection Notification TR-80-FRM-00-100-01

Project : _____

Project Number: _____

Note: Inspection Notification is to be sent a Minimum **5 Days** prior to any Hold point identified on the ITP for Alberta Inspections. For out of Province Inspections **10 Days** notification is required. For changes to the Notification a minimum of **48hrs** is required.

EXPEDITING REQUIREMENTS

This Order and all Sellers' sub-orders for major equipment and material, including Seller furnished drawings and data, are subject to expediting action by Buyer and/or Owner. The seller shall grant free access to his plant or plants (including sub-supplier plants) to Buyers and/or Owner's Expediter for the purpose of establishing delivery dates.

In addition to, and without limiting the expediting and delivery requirements described in the General Conditions, the following requirements are applicable

- If requested, Seller shall furnish Buyer's Expediter with a complete and detailed bar chart schedule (or similar type) which identifies the scheduled start and completion dates for engineering activities, material procurement and receipt, fabrication, sub-assembly, final assembly, testing and preparation for shipment to meet the required shipment date specified in the Order. The detailed bar chart schedule shall be submitted to Buyer's Expediter no later than twenty one (21) days after award of a Purchase Order. In addition, Seller shall furnish a progress report every twenty-one (21) days thereafter in sufficient detail to allow a realistic evaluation of progress towards Order completion.
- Sellers sub-orders must include all applicable Buyer Specifications, Supplier Quality Surveillance requirements and expediting requirements and shall show sub-supplier's name, purchase order number, description of the material being purchased and promised shipment date. Unpriced Copies of Seller's major sub-orders shall be submitted to Buyer's Expediter no later than one (1) week after commitment by Seller.
- Drawings and other data requested by referenced specification and attachments to this order are to be submitted to:

Three Streams Engineering
Suite 401, 1925 – 18th Avenue N.E.
Calgary, Alberta T2E 7T8

Attention: Document Control
Email: tshedoccontrol@threestreams.com

- Seller shall notify Buyer's Expediter, in writing, of any actual or anticipated delays immediately upon their discovery. Such notice will include estimated period of delay, cause of delay and corrective actions being taken by Seller.
- Seven (7) working days prior to shipment, Seller shall notify TSE expediting contact to confirm/obtain final routing, carrier and destination instructions.

PACKING / STORAGE / SHIPPING & MARKING INSTRUCTIONS

1.0 GENERAL

- 1.1 Seller shall include but not be limited to the following guidelines for preservation, protection and packaging of materials and equipment. These guidelines are in place for the protection of the material and equipment from mechanical damage, freezing and atmospheric corrosion during transit, and to prevent damage due to rough handling and vibration.
- 1.2 It will be the responsibility of the Seller to provide Buyer's Agent with their standard Preservation Procedure as well as any Special Packaging and Storage Requirements to ensure full warranty protection as described in the Purchase Order.

2.0 PACKAGING / STORAGE GUIDELINES

- 2.1 The packaging will be done in such a manner as to prevent damage due to rough handling, condensation corrosion and vibration. Should fungus protection be required such treatment will not be applied to electrical contacts or current carrying metal surfaces.
- 2.2 All items shall be clear of debris, dirt and foreign matter (thoroughly clean inside and out) prior to shipment preparation, and as a minimum, all items whether shipped in boxes or affixed to pallets shall be waterproof.
- 2.3 The Seller shall ensure that loose shipped items or accessories that are removed from the main equipment or equipment that require field assembly, are placed in separate packages or bundles according to the categories listed in Paragraph 2.13 and then labeled indicating the Purchase Order number, name of the main machine to which the accessory belongs, name of the accessory, accessory (part) number and position number on the assembly drawings. These items must be clearly indicated on a packing slip attached to the bill of lading.
 - 2.3.1 Any instrumentation or other small attachments, subject to damage due to vibration or jarring, must be removed, sleeved in polyethylene and sealed or packaged in waterproof vapour barrier packages and clearly marked as to location to be reinstalled. All resulting openings must be sealed.
 - 2.3.2 Special tools shall be separately packaged, shipped, identified as per loose shipped accessories and marked as "Special Tools".
 - 2.3.3 Recommended spare parts shall be separately marked as "Commissioning spares" or "Operating spares" as specified by the Buyer. The Seller will also clearly identify the item or items and the equipment component which they are intended for.
- 2.4 Packaged /prefabricated (skid mounted) equipment will be required to have all components properly blocked and braced for shipment. All temporary blocking and bracing will be painted red for clear identification for removal upon installation at site. If some of the components extend beyond the package base, a special approval will be required from Buyer's representative. When no approval is given, the components must be disassembled, packaged separately and resulting openings protected and sealed.
 - 2.4.1 Control panels that are not attached to the skid will be affixed to either pallet or runners and securely covered with polyethylene.
 - 2.4.2 All gauges that are deemed stable for transport will have their glass face taped in an "X" manner.
 - 2.4.3 All bolted connections shall be properly tightened as per mechanical requirements prior to shipment.

- 2.4.4 The Seller shall ensure that all hinged openings are securely located or banded closed to prevent possible opening during shipping.
- 2.4.5 Items with exposed rubber parts or linings shall be wrapped with an opaque, air tight plastic cover secured with tape. Desiccant shall not be used to protect rubber products.
- 2.5 Equipment shall be bolted to the package (pallet) base whenever possible. Equipment not bolted to the base shall be protected and held in a fixed position by banding, chock blocks, bracing and packing material.
- 2.6 Valves that are strapped to pallets or shipped in boxes shall have ends /openings sealed to prevent moisture or foreign matter from entering, and all valves will be in the closed position and the wheel or handle removed and marked as to correspond with the reinstallation.
- 2.7 The packaging shall be done in such a manner as to prevent damage due to condensation corrosion:
 - 2.7.1 Desiccant shall be required in all types of protection and packaging when condensation or vapour diffusion across vapour barriers would create a condition in the interior of the package harmful to the contents. Desiccant shall be fully contained in bags (to prevent dispersion), securely fixed in place and easily removed. The package shall indicate that desiccants shall be checked weekly and changed as necessary.
 - 2.7.2 Internal surfaces subject to rusting shall be protected by vapour phase inhibitors, rust preventatives or by a suitable desiccant. After treatment, all openings must be plugged or otherwise sealed.
 - 2.7.3 All items shall be clean before application of any anti-corrosive material. Machined and bright surfaces shall be coated with an anti-corrosive material.
 - 2.7.4 Components with non-drainage crevices or chambers shall be covered and protected at all times from entrance of water and debris.
 - 2.7.5 Pump and compressor interiors shall be coated or flushed with an easily removable anti-corrosive material. Lube oil and auxiliary piping shall be flushed with a corrosive preventative material that is soluble in the fluid to be carried by the piping.
 - 2.7.6 Rust inhibitors shall be compatible with the normal charge of oil or easily removed by flushing when used on lubricated parts. Oil recommended for normal operation or a compatible substitute shall be used when filling or flushing.
- 2.8 In cases where the Seller is responsible to load equipment/materials as per the delivery /freight terms of the Purchase Order, the Seller shall ensure that items which are subject to damage by rubbing are separated by wooden strips. The Seller and Buyer's representative (when present) will ensure that padding is placed under chains that contact the materials. In all cases the Seller shall ensure that the transporter secures (chains down) the equipment at locations that will not cause undue stress and damage during transport (i.e. nozzles or flanged are not to be used).
- 2.9 When specified by Buyer, goods are to be tarped prior to transporter leaving Seller premises.
- 2.10 Sharp corners and small protuberances shall be protected against being knocked off during transport, loading and unloading.
- 2.11 Shipping saddles, cradles, bolsters, and chock blocks shall be contoured to the outside curvature of equipment and located so that local bending or damage of the equipment will not occur. Steel wrapper plates shall be used when necessary to distribute the load and protect the equipment.

2.12 Cylindrical equipment shall be mounted on shipping saddles. When possible, installation saddles on equipment should be used as shipping saddles.

2.13 Packing Categories

Main Piece(s) of Equipment
Equipment Accessories
Spare Parts
Special Tools
Tools and Spare Parts for One Year Operation

2.14 No release for shipment shall be given until written authorization to do so has been received from the Buyer.

3.0 SHIPPING INSTRUCTIONS

A copy of these instructions must be included and shall also apply to each of your Purchase Orders directed to sub-suppliers making shipment directly to the jobsite.

3.1 Unless otherwise agreed, pre-pay all freight charges to jobsite and invoice at cost as a separate item. Charges must be supported by a copy of the Carrier's documentation.

3.2 C.O.D. shipments will not be accepted and will be returned to the Seller with all associated costs to the Seller's account.

3.3 As a minimum, the Buyer's Project name, Purchase Order number, item number, equipment and tag number(s) must appear on all equipment, crates, containers, shipping papers and packing lists

3.4 The packing list must be attached in a visible waterproof envelop and affixed to the outside of each container with one (1) copy attached to the bill of lading. Packing list must clearly identify each item, indicating quantity of items shipped and quantity of items being back ordered.

3.5 At least five (5) working days prior to readiness of shipment, provide (via fax or email), the following information to the Buyer:

- Purchase Order Number
- Item number
- Quantity being shipped
- Number, size, gross weight of packages
- Method of transport
- Special arrangements required for handling
- Estimated time of arrival at destination.

3.6 On Purchase Orders where Buyer's right to Quality Surveillance is exercised, no shipment shall be made without the Buyer's Quality Surveillance Inspector's "Release to Ship".

3.7 On the day of shipment, forward to the Buyer (by fax) as per instructions on Purchase Order, the following documents, with the original copies forwarded via courier:

- Itemized Packing List and Weight List
- Material Safety Data Sheets for Hazardous Goods (if applicable)

4.0 LIFTING /HANDLING REQUIREMENTS

4.1 Packing shall be done in such a manner to enable cargo handling by forklift, cranes, slings, bogies, skids, or manual manipulation as size and weight permits. If site is remote, and if there is an absence of heavy lifting facilities at all points of transit, packing case size and weights shall be taken into consideration.

- 4.2 Should the Purchase Order equipment weigh two (2) or more than two (2) metric tons, the weight, center of gravity and hoisting position shall be marked with international trade transportation practice marks and illustrative marks on the two sides of each case so as to facilitate loading, unloading and handling.
- 4.3 In accordance with the characteristics and different requirements in loading, unloading and shipping different Purchase Order equipment the package shall be conspicuously marked with "Handle with Care", "Right Side Up", "Keep Dry", etc. and with appropriate international trade practice marks and illustrative marks.

5.0 SHIPPING IDENTIFICATION MARKS

- 5.1 Each case, box, crate, piece, etc. must be stenciled on two sides in clear, legible characters. On bundles the marks are to be "embossed on metal tags", which shall be wired securely to the bundle at the end and in the middle.
- 5.2 Indelible and ultraviolet resistant inks, paint and metal labels shall be used to preclude obliteration in any way of marks, shipping instructions and handling symbols.
- 5.3 Marks must be legible and shall not be less than thirty (30) mm in height.
- 5.4 Only those marks provided on the Purchase Order, plus any cautionary markings and special handling symbols will appear. In no instance will advertising or marks which indicate contents or other extraneous information appear. Refer to illustration for an example of marks.

Shipping marks are as follows (colour coding, if required):

Project: _____

P.O. Number: _____

Equipment Description: _____

Tag Number: _____

Gross/Net Weight (kg): _____

Dimensions (cm): _____

Case Number/Bale _____ of _____

Number: _____

6.0 EQUIPMENT TAGGING

- 6.1 Each item of equipment is to be furnished with either an aluminum or stainless steel name plate (as detailed in the RFQ), identified with the Purchase Order number, tag number and other data as required by the specifications and/or data sheets.
- 6.2 Any other tagged components (ie. Instruments, valves, etc) supplied with the equipment are to be furnished with a stainless steel tag, securely fastened and stamped with the Buyer's component tag number.

7.0 VALVE TAGGING

- 7.1 All valves shall be furnished with a stainless steel tag, securely fastened and stamped with the Cenovus tag number.