EXPRESSION OF INTEREST
White Rose Extension Project (WREP) – EOI / Prequalification
Medium Voltage Variable Frequency Drives
EOI-101414-606

Mustang Canada Inc. is seeking prequalification responses from interested companies for provision of Medium Voltage Variable Frequency Drives for use on the Husky Energy White Rose Extension Project. Husky Energy is currently in the planning stages for this development which, subject to final company, partner and regulatory approvals, would include construction of a Wellhead Platform (WHP).

Interested companies must be qualified to conduct the work scope as outlined in the prequalification questionnaire.

Respondents are required to demonstrate their capabilities and experience via a formal response to this EOI/Prequalification advertisement. Respondents should provide a history of operations in the North Atlantic (or equivalent climate). Further details on Husky Energy and its Operating Environment are outlined below.

Mustang Canada Inc. strongly supports providing opportunities to Canadian, in particular Newfoundland and Labrador companies and individuals, on a commercially competitive basis. Pre-qualified companies will be required to complete a Canada/Newfoundland and Labrador Benefits Questionnaire at the Bid stage. Mustang Canada Inc. also encourages the participation of members of designated groups (women; Aboriginal peoples; persons with disabilities; and members of visible minorities) and corporations or cooperatives owned by them, in the supply of goods and services.

Please provide one (1) original and / or one (1) electronic copy of your formal response no later than Friday, January 17th at 3:00pm, NST to the address as shown below:

Mustang Canada Inc. Attn: Ms. Jaime Howard
17 Duffy Place Email: ProcurementWREP@mustangeng.com
St. John’s, NL Canada Tel: +1 (709) 793-3161
A1B 4M7

Background

Husky Energy has been active on Canada’s East Coast for more than 20 years. Husky Energy is the operator of the White Rose field and has several exploration prospects in the central part of the Jeanne d’Arc Basin.

Discovered in 1984, the White Rose offshore oil field is located in 120 m of water, 350 km east of St. John’s, Newfoundland and Labrador, Canada. The field consists of both oil and gas pools, including the South White Rose oil pool. The oil pool covers approximately 40 km² and contains an estimated 200-250 million barrels of recoverable oil.

A new WHP will be situated approximately 7 km west of the existing SeaRose Floating, Production, Storage, Offloading (FPSO) vessel.
Operating Environment

Husky Energy’s lease holdings on the Grand Banks are situated in one of the harshest ocean environments in the world:

- During the winter season (December - March), winds can reach 90 to 100 knots offshore.
- Fog from April to August can reduce visibility and impact crew changes by helicopter.
- Combined significant wave heights can reach 12.5 meters during the winter season.
- Surface water temperatures range from near 0°C to 22°C.
- Air temperatures range from -18.5°C to +25°C.
- Surface ocean currents up to 90 cm/sec have been measured. Mean surface currents range from 5 to 19 cm/sec.
- Sea ice, up to 100 centimeters thick, may reach the area from February to April, two to three years out of every ten.
- Icebergs pass through the area from March to July.

General Requirements

The selected company will be required to design, fabricate and test the equipment in compliance with Mustang Canada Inc. and Husky Energy requirements.

Scope of Work

1) The Medium Voltage Variable Frequency Drive package shall incorporate nine (9) VFD’s, with each VFD being fed from a 13.8 kV Switchboard.

Each variable frequency drive shall provide power and control to a dedicated down-hole Electric Submersible Pump (ESP) for artificial lift. Approximate down-hole depth for each pump is 4 km.

All VFD’s shall be 13.8 kV, 3 phase, 60 Hz input, rated 1000 HP.

Output shall be 3 phase, variable frequency, with output voltage typically 6.6 kV. *(Note: Output voltage is to be verified by pump vendor and is subject to change).*

The drives shall include all necessary ancillary equipment required for protection, control, communications, etc.
VFD's shall be complete with 18 pulse (minimum) input diode rectifier.

VFD's shall contain multi-level converters (PWM) with IGBT power modules.

The VFD's shall be completely factory built, suitable for an indoor installation, pre-wired, assembled and tested as a complete package by the VFD supplier. Customer specific drive, motor, and application data shall be pre-loaded into the operator interface and tested prior to shipment.

The major scope of work items for each package is as follows:

Design, fabrication, inspection, testing and certification of the Medium Voltage Variable Frequency Drive Package. Each package shall be complete with all auxiliary equipment necessary to make it a safe, operable, and stand-alone unit.

The Vendor's scope of supply shall include, but not be limited to:

- Complete mechanical & electrical design
- Package instrumentation control system design and interfaces
- Production of drawings and supporting documentation
- Procurement of materials
- Manufacture, fabrication and welding
- NDT, inspection and testing
- Performance testing
- Package string testing
- Instrument testing and calibration
- Electrical system design and interfaces
- Electrical testing
- Provision of AIA services for inspection / certification
- Painting and coatings/linings
- Mechanical completion
- Packing and preservation
- Sea-fastening
- Weighing and Center of Gravity (COG)
- Lifting equipment with certification
- Delivery
- Third party inspection and co-ordination
- Two year operational spares
- Insurance/mandatory spares
- Special tools required for O&M of the equipment
- Production of drawings / 3D model file
- Requested vendor documentation
- Technical manual and manufacturer’s data book
- Installation, commissioning and maintenance manuals
- Technical support during commissioning

2) Compliance with all Mustang Canada Inc. and Husky Energy project specifications and requirements, except for mutually agreed deviations. Also, responsible for ensuring that
Sub-vendors are capable of meeting all requirements and that they are supplied with the correct technical documentation and all relevant sections of the Purchase Order and all subsequent approved revisions of the relevant sections of the Requisition document.

3) Compliance with supplier / packager / manufacturer blueprints, drawings and specifications for all components that comprise the Medium Voltage Variable Frequency Drive Package, thus ensuring that form, fit and function for interchangeable components, systems and sub-systems are not adversely affected.

4) Submission of a comprehensive monthly progress report and critical path schedules detailing all items in the critical path and their progress for each month. As well as participation in a monthly status conference call.

5) Participation in at least one clarification meeting prior to award at the Client’s facility, a kickoff meeting after award at the packager’s facility, a HAZOP meeting at the Client’s facility, a design finalization meeting prior to design freeze at the Client’s facility, a pre-inspection meeting at the packager’s facility, a pre-FAT meeting at the packager’s facility, a control system PCS compatibility test at the packager’s facility prior to FAT, and a post-FAT punch list meeting at the packager’s facility with follow-up via e-mail. Also participation in a pre-commissioning meeting, as well as assistance in installation, pre-commissioning, commissioning, start-up and site acceptance tests.

6) Submission of all general arrangement drawings, instrumentation drawings, electrical drawings, cable schedules, PCS modbus / profibus interface lists, cause & effect diagrams, inspection and test plans, weld procedures, data sheets and other documents required to fully define and characterize the equipment being supplied and to enable Mustang Canada Inc. and Husky Energy to design the facility as well as install, inspect and maintain the equipment.

7) After drawings that have received final design approval for fabrication, the supplier shall then provide an as-shipped set of drawings to characterize the actual configuration of each package as it left the factory, an as-installed set of drawings to characterize the actual configuration of each package as it was installed and pre-commissioned in the topsides fabrication yard, and an as-built set of drawings to depict the actual configuration of each package after offshore commissioning.

8) Dual language (English / French) instructions for all equipment associated with fire suppression systems and for any submitted MSDS documents.

9) The supply of all instrumentation, electrical components, electrical systems and wiring with a CSA label and in accordance with all CSA requirements.

10) Compliance with Canadian and CNLOPB Regulatory requirements.

11) The supply of all special tools, capital spares, and start-up and commissioning spares as defined in the purchase order. Commissioning spares shall include spare cards and PLCs for any control systems. The supplier shall advise the Client when spares must be ordered so they can be manufactured with the main equipment.
12) Weighing of all equipment exceeding 5000 kg with load cells having an accuracy of +/- 1% of the measured value. The plan center of gravity shall also be verified using this equipment. Skids & systems shall not be disassembled to avoid the weighing of equipment in this fashion. A weight data sheet shall be supplied for all equipment provided. The supplier shall quantify the weight of all skids and major components as early as possible in the proposal and design phases and shall offer weight reduction alternatives for consideration by the Client.

13) The application of all necessary resources to meet agreed equipment delivery dates, especially after schedule slippages, parts scrapping and other unanticipated schedule impacts.

14) Export boxing and long-term preservation for all equipment.

15) Operator training

Submission and Registration Requirements:

Mustang Canada Inc. is committed to providing a safe, healthy and environmentally sound workplace for its employees, contractor and subcontractors. Interested companies must meet, at a minimum, all requirements of Mustang Canada Inc., as well as Husky Energy’s commitments related to Canada-Newfoundland and Labrador benefits and other appropriate regulatory processes. In addition, interested Companies are required to complete the Mustang Canada Inc. Supplier Pre-Qualification Questionnaire that must be submitted with their “Expression of Interest”. The questionnaire is available by contacting:

1. White Rose Extension Project Website  
   Tel: +1(709) 793-3113  
   E-Mail: ProcurementWREP@mustangeng.com  
   Website: http://sites.mustangeng.com/sites/BidPub/WhiteRose2

2. BIDS Newfoundland  
   Tel: +1(709) 738-6500 or 1-800-397-0393  
   Website: www.bids.ca

3. NOIA  
   Tel: +1(709) 758-6610  
   Website: www.noia.ca

Please note that any updates, bulletins and/or clarifications regarding the following procurement opportunity will be posted to the following website only.

Website: http://sites.mustangeng.com/sites/BidPub/WhiteRose2

Interested companies are advised to check regularly during the pre-submission period for any additional information that may be posted.
Schedule:

It is anticipated that the Request for Proposal (RFP) will be issued 1st Quarter 2014, with a planned award date 2nd Quarter 2014. The Required on Site (ROS) delivery for the Medium Voltage VFD Package is 2nd Quarter 2016.