



South of Embley project

Expression of interest

High Voltage Switchgear

Package Number: 25977-000-MRA-ESM0-00001

Package Title: High Voltage Switchgear

General Description

Rio Tinto's South of Embley project is located approximately 40 km south-west of Weipa in far North Queensland, Australia. The Project site will require High Voltage (HV) Switchgear. The scope includes design, manufacture, assembly, painting, factory acceptance testing, pre-commissioning and supply of HV metal clad switchgear, as well as providing technical support during construction and commissioning.

Specific Scope Requirements

The scope of work includes four (4) 22kv switchgears, four (4) 6.6kv switchgears, three (3) 22kv Ring Main Unit (RMU) and each switchgear comprises of multiple panels.

The HV switchgear shall consist of all system components required to meet the performance, protection, safety, testing, and certification criteria of this specification. The plant shall be of standard manufacture, and be designed to provide reliability in operation and ease of inspection, maintenance, cleaning and repairs.

The switchgear (circuit breakers and contactors) shall be vacuum type, complying with AS 62271.100 and AS 60470. Trucks shall be horizontally withdrawable. The vacuum bottles shall be sealed for life. They shall be fitted with an appropriate means of checking contact wear whilst in-situ. The value at which current chopping occurs shall be minimal. It shall not be necessary to fit surge diverters to limit switching over voltages generated by the vacuum interrupters.

Facilities shall be provided to mechanically and electrically trip the circuit breaker. Electrical tripping and closing via the PCS shall be facilitated. No electrical operating controls shall be mounted on the front of the switchgear panel to close the circuit breaker, apart from relay test mode.

The switchgear shall have facility for being racked electrically and mechanically between the service and test positions from the front of the panel and remotely through PCS without opening any doors or entering any compartments. A dedicated motor starter shall be supplied as part of the

switchgear, and be located in control compartment, for motorised racking with sensitive overload protection to avoid any mechanical damage to the racking mechanism in case of mechanical jams.

Electrical interlocks shall be failsafe for motor starters and VSD feeders. Failure of supply or connections to any electrical interlock shall not produce or permit faulty operation.

Circuit breakers shall be supplied with all operating devices such as operating handle(s) and spring charge motors as required.

The operation of circuit breakers shall be of the trip-free design.

Reliable mechanically operated indicators shall be provided on each circuit breaker and contactor operating mechanism to show whether the circuit breaker or contactor is open or closed. This should be mechanically driven from that portion of the moving contact drive rod at ground potential, and be visible from the cubicle and also indicated remotely via the plant control system.

The environment is a bauxite mine located near Weipa, in the Cape York Peninsula, North Queensland. The area experiences extremes of tropical weather and the air can be laden with bauxite dust in very humid conditions. Normal service conditions as set out in AS 2650 will apply to switchboards.

Switchgear shall have a design life of at least 30 years and shall be suitable for periodic maintenance with intervals greater than 4 years. Switchboards will be installed in air-conditioned switchrooms; however equipment shall be designed for continuous operation in a 40°C ambient temperature. Equipment installed outdoors shall have a minimum IP56 degree of protection or be installed in an IP56 rated 316 stainless steel weatherproof enclosure.

The electrical design shall conform to all codes, standards, rules and regulations governing in the State of Queensland, Australia and all authorities having jurisdiction over the Project site.

Delivery Schedule

Forecast Award Date: Q2, 2016

In 2015, Rio Tinto is undertaking a detailed feasibility study on the Project that will inform a final investment decision. A decision is expected to be received in the final quarter of 2015. Future procurement decisions are dependent on board approval.

Construction of associated mine infrastructure is anticipated to take 36 months once final board approval is granted.

Instructions to Tenderers

If your business possesses the capability and capacity to perform the stated scope of work, please submit a registration of interest via the ICN Gateway at www.southofembley.icn.org.au.

Please ensure that:

- Your company profile on ICN Gateway is complete, up-to-date and accurate
- You register your interest as a Full Scope or Partial Scope supplier (where applicable), and
- You respond to all project-specific questions via the ICN Gateway.

More Information

Please contact the Industry Capability Network Queensland on +61 (7) 3364 0676 should you have any enquiries regarding this scope of work.

More information about the South of Embley Project can be found on the Rio Tinto website www.riotinto.com.

Disclaimer

Scope of Work is indicative only and is intended to be used as a summary description of work which may be required by Rio Tinto and may be subject to change. Full scopes of work will be made available to parties that are invited to tender. There is no undertaking to contract or proceed to a competitive process implied by this form. Further contact with interested suppliers will be at Rio Tinto's discretion.