



KGN-GDD-038-2018.

TENDER FOR SUPPLY OF INSTRUMENT SPARES FOR OLKARIA GEOTHERMAL POWER PLANTS.

21ST March, 2018

Further to the tender ref no. KGN-GDD-038-2018 - Tender for Supply of Instrument Spares for Olkaria Power plants, KenGen hereby issues Addendum No. 1 as follows;

ADDENDUM NO. 1:

The schedule for Olkaria II instrument spares: schedule 2 has been amended as shown below

SCHEDULE 2: OLKARIA II

Item	Description	Specifications	Manufacturer	Quantity
PRESSURE INSTRUMENTS				
1.	Pneumatic Pressure Calibration Pump (Hand pump)	<p>Pressure Range: 0.95bar vacuum to 600bar</p> <p>Pressure Resolution: 0.1mbar</p> <p>Accuracy: At least 0.2% fs</p> <p>Material:</p> <p>Ram/adapters: Stainless steel</p> <p>Body: Stainless steel/aluminium</p> <ul style="list-style-type: none"> • Compatible Reference Digital pressure gauge. • Fine adjustment valve. • Pressure release valve. • Pressure / Vacuum selector • Adjustable stroke for varying maximum pressure output (over pressure protection). • Set of threaded stainless steel BSP and NPT adaptors for unit under test both Male and female of the following sizes 1/8", 1/4", 3/8", 1/2". • Flexible hose to item under test. • High quality carrying case, with a set of washers, seals. <p>For additional instruments.</p> <ul style="list-style-type: none"> • Manufacturers calibration certificate • Be protected against contamination by process fluid (hydraulic/pneumatic). 		4
2.	FLOW SWITCH (vacuum pump)	<p>Model no. TD2-8D00-032/ TEC-A110-002</p> <p>Serial no. 114391-05-005</p> <p>Supply volt 24VDC</p> <p>Max Pressure 207 bar</p> <p>TMC-A110-006</p> <p>RELAY DPDT 8A/24VDC at 40°C</p>	Magnetrol	4

3.	LEVEL TRANSMITTER (SEAL PIT)	GUIDED WAVE RADAR AND INTERFACE TRANSMITTER 3301HA1S1V5AM0425CANAMIS4CIQ4 Tag lit 34014 Serial no.2030865 Power supply 11-42 VDC Output 4-20mA/HART	Rosemount	3
4.	VIBRATION PICK UP (Generator)	Asset condition monitoring Relative probe assembly Catalogue no.24701-16-10-00-083-03-02 MOD # 3-VE(Y) 53003 TORQUE 600 IN -LBS+ or - 10 IN-LBS	Bently Nevada	4
5.	PH TRANSMITTER	ROSEMOUNT ANALYTICAL solu comp Xmt Model no. OXMT-P-HT-11 S/N A09625875 Range:0-14pH Output:4-20mA Dc	Rosemount	2
6.	PH SENSOR	Model no.10385+-02-10 Max Temp 212F/100°C Max Pressure 100PSIg/791KPa Max related Pressure 54PSIg/542KPa FOR USE WITH MODEL 54e ANALYSER RTD PT100 Serial no.D09-64-7579 Rosemount analytical, Inc	Rosemount	2

Item	Description	Specifications	Manufacturer	Quantity
7.	Valve Actuator (Scrubber drain LCV)	Actuator Type: Pneumatic (diaphragm) Model: 1052 Size: 33 Fail Position: Open Air Supply pressure: 5.5 to 8barg Act orientation: Vertical, R H mounting Hand wheel type: Gear operated with clutch. Input signal: 4-20mA is 0% to 100%, Reverse Acting. Service Conditions	Fisher	1

		<p>Process Fluid: Water (Geothermal Steam Condensate) Flow Rate: <ul style="list-style-type: none"> • Normal: 2.9 m³/h • Max: 52 m³/h Inlet Temperature: 150 °C Outlet pressure: 1.5 bar abs Inlet Pressure: 5 bar abs Specific Gravity: 0.92</p> <p>Valve Body/Bonnet Type: Ball ANSI B16.5 Class 150# Size: 38 mm Maximum Pressure: 13.5barg Temperature: 197 °C End connection: ANSI B16.5 Class 150 Body/Bonnet material: 316 SS FLC face finish: RF End external material: 316 SS Flow direction: Open (forward) Packing material: PTFE Packing Type: V-ring</p> <p>Trim Rated travel: 90 degrees Plug material: 316SS Seat material: STELLITE Stem Material: 17-4PH SS</p>		
8.	<p>Complete Valve Assembly Including Compatible Actuator (Steam Venting PCV)</p>	<p>Service Conditions Process Fluid: Separated Geothermal Steam Flow Rate: <ul style="list-style-type: none"> • Normal: 53.3 kg/s • Maximum: 80 kg/s Inlet Temperature: 161 to 177.7 °C Inlet Pressure: 5.32 to 7.87 bar abs Outlet pressure: 3.77 to 5.37 bar abs Specific Weight: 2.76 to 4.20 kg/m³ Allowable SPL: 95 to 106dBA</p> <p>Valve Body Type: V-Ball Model: V150 Size: 400 NB ANSI CLASS 150# Maximum Pressure: 13.5barg Maximum Temperature: 197 °C</p>	Fisher	1

		<p>Body Material: ASTM A216 WCC End Connection: 400 NB ANSI RF Flange Face Finish: ANSI B16.5 Flow Direction: Forward Packing material: PTFE Packing Type: V-ring Trim Type: Standard – HD Seal Size: 16 inch Rated travel: 90% Characteristic: Equal Percentage Rated Cv: 7840; FL: 0.37; XT: 0.135 Ball material: 317 CR PL Seat material: Alloy 6 HD Bearing Material: PEEK Stem Material: 17-4PH H1075 Actuator Type: Double Acting Pneumatic Piston Model: 1061 Size 80 Eff Area: 88.5 Minimum Required Pressure: 4.1barg Maximum Allowable Pressure: 10.3barg Fail Position: Fixed Air Supply pressure: 5.5 to 6.9barg Input signal: 4-20mA is 0% to 100%</p>		
9.	<p>Valve Actuator (Cooling Water Control Valve)</p>	<p>Actuator Type: Pneumatic (diaphragm) Model: 1052 Size: 60 Fail Position: Closed Air Supply pressure: 5.5 to 8barg Act orientation: Vertical, Parallel mounting Hand wheel type: Gear operated with clutch. Input signal: On/Off Solenoid, Energise to open. Service Conditions Process Fluid: Cooling Water (Geothermal Steam Condensate) Flow Rate: • Normal: 292 m³/h</p>	Fisher	1

		<ul style="list-style-type: none"> • Max: 438 m³/h <p>Inlet Temperature: 22 °C Outlet pressure: 1.63 bar abs Inlet Pressure: 3.3 bar abs Specific Gravity: 0.999</p> <p>Valve Body/Bonnet Type: Butterfly Size: 250 mm Maximum Pressure: 4.5barg Temperature: 50 °C End connection: ANSI B16.5 Class 150 Body/Bonnet material: 316 SS FLC face finish: RF End external material: 316 SS Flow direction: Open (forward) Packing material: PTFE Packing Type: V–ring</p> <p>Trim Rated travel: 90 degrees Plug material: 316SS Seat material: PTFE Stem Material: 17-4PH SS</p>		
10.	Valve Actuator (Non-Condensable Gas Control Valve)	<p>Actuator Type: Pneumatic (diaphragm) Model: 1052 Size: 60 Fail Position: Closed Air Supply pressure: 5.5 to 8barg Act orientation: Vertical, R H Mounting Hand wheel type: Gear operated with clutch. Input signal: On/Off Solenoid, Energise to open.</p> <p>Service Conditions Process Fluid: Non-Condensable Gas Flow Rate: <ul style="list-style-type: none"> • Normal: 2514 kg/h • Max: 3143 kg/h Inlet Temperature: 26.4 °C Outlet pressure: 1.63 bar abs Inlet Pressure: 3.3 bar abs Specific Weight: 0.26 Required Cv (Fully open): <ul style="list-style-type: none"> • Normal Flow: 2514 kg/h • Max Flow: 3143 kg/h </p>	Fisher	1

		<p>Valve Body/Bonnet Type: Butterfly Size: 300 mm Maximum Pressure: 3.4barg Temperature: 196 °C End connection: ANSI B16.5 Class 150 Body/Bonnet material: 316 SS FLC face finish: RF End external material: 316 SS Flow direction: Open (forward) Packing material: PTFE Packing Type: V-Ring</p> <p>Trim Rated travel: 90 degrees Plug material: 316SS Seat material: PTFE Stem Material: 17-4PH SS</p>		
11.	Valve Actuator (Reinjection Control Valve)	<p>Actuator Type: Pneumatic (diaphragm) Model: 1052 Size: 40 Modulating: Yes Fail Position: Closed Air Supply pressure: 5.5 to 8barg Act orientation: Vertical Actuator, Parallel Mounting Hand wheel type: Gear operated with clutch. Input signal: 4-20mA is 0% to 100 % Open, Direct acting.</p> <p>Positioner Type: Electro pneumatic HART smart</p> <p>Service Conditions Process Fluid: Geothermal steam condensate Flow Rate:130m3/h Inlet Temperature: 37.3 °C Inlet Pressure: 10.5 bar abs Specific Weight: 0.994</p> <p>Valve Body/Bonnet Type: Butterfly Size: 100 mm Maximum Pressure: 14barg/50°C Temperature: 196 °C End connection: ANSI B16.5 Class 150</p>	Fisher	1

		<p>Body/Bonnet material: 316 SS FLC face finish: RF End external material: 316 SS Flow direction: Open (forward) Packing material: PTFE Packing Type: V-Ring</p> <p>Trim Rated travel: 90 degrees Plug material: 316SS Seat material: PTFE Stem Material: 17-4PH SS</p>		
1 2	Digital Pressure Calibrator	<p>Range: 0 to 70bar Accuracy: 0.025% FS Media: Gas, Liquid Display: Dual-line 6 full digit LCD with LED backlight Pressure Units: Pa, kPa, MPa, psi, bar, mbar, inH₂O, mmH₂O, inHg, mmHg Pressure Port: ¼” inch NPT Electrical Connection: 4mm sockets Over Pressure Warning: 120% Data Logger: Storage capacity at least 30 files Power: Battery: Rechargeable Li-ion Polymer battery with at least 40 hours working time External power: 110/240Vac through a power adapter Enclosure: Housing: Aluminum Wetted parts: 316L SS Weight: <1kg Communication port: RS232 (or other suitable port such as USB) Accessories:</p> <ul style="list-style-type: none"> • 2 Test leads • 2 Test hoses • Carry case • Spare rechargeable Li-ion polymer battery • USB to RS232 adapter <p>Traceable calibration certificate must be provided</p>		1

<p>1 3 .</p>	<p>Solenoid Valve</p>	<p>Operation: Timer-Operated, Electronic Valve Type: Solenoid Model: 1/4" (4477-AS) Max. Working Pressure: 300 psig Min-Max Fluid Temperature: 35-180°F Inlet Connection: 3/8" NPT Outlet Connection: 3/8" NPT Orifice Size:7/16" Cycle Time: Adjustable, 1-60 minutes Drain Time: Adjustable, 1-30 seconds Power Supply: 115V-1Ph-60HZ Overall Size (Inches):1.25 x 6.5 x 5.5 (W x D x H) Dimensions (Inches):9 x 7 x 5</p>	<p>Pneumatic valves</p>	<p>2</p>
----------------------	------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------	----------

SCHEDULE 2: OLKARIA II INSTRUMENT SPARES

Item	Description	Quantity	Unit Price	Total Cost
1.	Pneumatic pressure calibration pump (hand pump)	4		
2.	Flow switch (vacuum pump)	4		
3.	Wave guided radar Level transmitter (seal pit)	3		
4.	Vibration pick up (Generator)	4		
5.	PH transmitter	2		
6.	PH sensor	2		
7.	Valve Actuator	1		
8.	Complete Valve Assembly Including	1		
9.	Valve Actuator (Cooling Water	1		
10.	Valve Actuator (Non-Condensable	1		
11.	Valve Actuator (Reinjection	1		
12.	Digital Pressure Calibrator	1		
13.	Solenoid Valve			

FOR LOCAL SUPPLIERS	
Sub-Total	
Discount (%) if any	
Other Charges e.g. transport, handling	
Total Cost to Olkaria Power Station	
Country of Origin	
Currency of Tender	
Delivery Period	

ACKNOWLEDGEMENT OF ADDENDUM NO.1

We, the undersigned hereby certify that the Addendum is an integral part of the document and the alterations set out in the Clarification/Addendum have been incorporated in the tender proposal.

Signed.....

Tenderer.....

Date.....