

ANNEXURE - I

SPECIFICATIONS

SUB : Air Vessel Based Surge Control System for Urmodi LIS ,Stage - 1 Project.

REF :

Sl. No.	Description	Unit	Qty.
1	<u>DESIGN, FABRICATION, SUPPLY AND COMMISSIONING OF AIR VESSEL, SENSOR SHELL, AIR RECEIVER AND CONNECTING PIPING :</u> Design, Fabrication, Supply & Commissioning of Air Vessel & Sensor Shell including procurement of Boiler Quality Steel Plates, Cutting of Plates, Handling, Rolling, Fit-up, Pressing of Rolling, Tack Welding, Pressing of Dished Ends, Assembling, Full Welding, Dye penetration Test during welding, full radiography (10%) of welded joints. Hydraulic Testing to the Test Pressure, Cleaning of the Air Vessel, Sandblasting to the interior surface and Painting of two coat of primer for both inside & outside surface. Two coats of food grade epoxy paint for inside surface and two coat of Aluminium Painting to the outside surface (Average Painting DFT 80 Microns), Handling charges, cost of Electrodes Charges, gas, consumables, water for testing, labour charges etc. complete.		
a)	Design & Drawing Charges for Selection and Fabrication of Air Vessel, Air Receiver, Sensor Shell & Connecting Pipes. Also, Design & Drawings for Electrical Panels, Level Sensing Devices & Pneumatic Control System etc.,	Job	01
b)	Air Vessel - 36.8 M ³	No.	01
c)	Sensor Shell	No.	01

Sl. No.	Description	Unit	Qty.
d)	Catwalk / Operating Platform for Air Vessel :- Fabrication & Supply of Operating Platform to fix on the top of the Sensor Shell & side Air Vessel with required structurals.	Job	01
e)	Fabrication & Supply of 1000 x 450 mm x 8mm thick size Orifice to be installed in connecting pipe to Air Vessel & Main Line.	Nos.	02
f)	Providing Isolation Valves between Air Vessel & Sensor Shell, Level Gauge, drain valves for Sensor Shell, Level gauge & Air Receiver. Also providing Pressure Relief Valve for Air Vessel & Air Receiver.	Set	01
g)	Providing Connecting pipeline & 300 Isolation Valve		
i)	1000mm x 12 mm thick connecting pipe between Air Vessel & Mainline. Upto 10 mtrs	Job	01
ii)	1000mm cast steel, PN 1.6 double flanged Butterfly Valve. The work includes providing suitable size matching flanges with required fasteners & gaskets for isolating of Air Vessel & delivery manifold.	No.	01
iii)	200mm cast steel, PN 1.6 double flanged Butterfly Valve. The work includes providing suitable size matching flanges with required fasteners & gaskets for Draining of Air Vessel. Make : Weir BDK, Micon & R&D Multiples.	No.	01
3	Supply of Pneumatic Control System & Air Compressor (2 Nos.) for charging & bleeding the Air Chamber using 25mm dia & Specials etc. complete including 25mm pneumatic piping from air compressors to Air Receiver and Air Vessel via header assembly with necessary valves and specials, supports etc. The Compressor shall be receiver mounted type with 200 to 350 ltrs capacity receiver, FAD 25 to 35 M.cub @ 12 Kg/Cm.sq		
a)	Air Compressors – ELGI / IR / CP Make	No.	02
b)	Header assembly pneumatic piping, valves, specials etc., - Shridhan Make	Set	01

Sl. No.	Description	Unit	Qty.
4	<p><u>LIQUID LEVEL SENSING DEVICES :-</u> For Monitoring of Surge Vessel Levels following type of Level Switches / Gauge are provided covering full height of length of the air vessel with required Weatherproof enclosure.</p> <p>a) Magnetic Level Switch - b) Visual Water Level Gauge</p>	No. No.	01 01
5	<p><u>Air Chamber Control Panel :</u> Supply, Erection & Commissioning of Air Chamber monitoring Panel with front face housing all indications and control buttons lock and door on rear side with Level Control System with necessary provision to connecting to PLC</p>	No.	01
6	<p>Supply, Erection & Commissioning of LT Distribution Board with necessary SFU, LED Lamps, Volt Meter, Ammeter to distribute the power to compressors & Air Chamber Panel.</p>	No.	01
7	<p><u>CONTROL CABLES :</u> Supply & Laying of Control Cables / Power supply cable 1.1 KV grade copper / aluminium / PVC insulated sheathed armored with outer sheathing. CCI / UNISTAR / SUNCAB/ UNIVERSAL / PERGAON / Equivalent.</p>	Lot	01
8	<p>Transportation, unloading, Erection of Air Vessel (using suitable crane) from Fabrication shop to site</p>	Job	01
9	<p>Transportation of Surge Control Instrumentation & Piping System (Other than Air Vessel).</p>	Job	01
10	<p>Synchronising of all Electro-mechanical Equipments & commissioning of Surge Control System.</p>	Job	01