

Single Well Control Panel - Check List

I. WELL TYPE

- | | | |
|----|--------------------|-----|
| A. | Single | Yes |
| B. | Dual | No |
| | 1. Dual Completion | No |
| | 2. Dual Flow-line | No |

II. INPUTS

- | | | |
|-----------|--|---------------------------|
| A. | Supply to panel | Yes |
| | 1. Air | No |
| | 2. Gas | No |
| | a. Sweet | No |
| | — b. Sour | No |
| | 3. Hydraulic | No |
| | 4. Electric | 230/400V, 3 phases, 50 Hz |
| | 5. Supply Pressure | |
| B. | Flow-line PSL (Pressure Switch Low) | Yes |
| | 1. Field mount (pressure transmitter) | Yes |
| | 2. Panel mount | No |
| | 3. Second PSH (Pressure Switch High) | No |
| C. | Other inputs | Yes |
| | 1. SSV (Surface Safety Valve)
Shutdown from Master Control Panel | Yes |
| | 2. SCSSV
(Surface Controlled Subsurface Safety Valve)
shutdown from Master Control Panel | Yes |

The logic is configured such that in the normal operating mode SSV cannot be opened until SCSSV has been opened. This is the normal operating sequence for opening the well.

- | | |
|---|----------------------------|
| 3. ESD (Emergency Shut Down) | Yes (approx. 10 m from CP) |
| 4. TSE (Temperature Safety Element) | Yes |
| 5. Line Heater PSL (Pressure Sensor Low) | No |
| 6. Sand probe | No |
| 7. Other | |
| a. Pressure transmitter 4-20mA (see attached ...) | Yes |
| b. DCS of facility | Yes |

Annex A

III. OUTPUTS, actuator manufacturer data

A. SSV Surface Safety Valve (Master Valve) Yes

In the types:

- valve size 4 1/16", working pressure 3000 PSI – with volume 3,5 l
- valve size 4 1/16", working pressure 2000 PSI – with volume 3,5 l
- valve size 3 1/8", working pressure 3000 PSI – with volume 3 l
- valve size 3 1/8", working pressure 2000 PSI – with volume 3 l

B. Other SDV'S Shut down valves No

III. OUTPUTS,

C. SCSSV SITP according to SCSSV usually 2000 psig Yes

Hydraulic static pressure on the wellhead in range (30-150 bar)

E. ESD/TSE (consider 2 fusible plugs, one for Christmas tree and one for technological house) Yes

F. DCS Yes

IV. Controls

A. Block and bleed relays Yes
1. SSV (Wing) No
2. SSV (Master) Yes
3. SCSSV Yes
4. Other No

V. INDICATION

A. Pressure Gauges Yes
1. Inputs No
2. Outputs (pressure gauge and lights (green/red) for SSV, SCSSV, Panel control pressure and pump) Yes

Annex A

- B. Remote Indication** **Yes**
- 1. Indication of position in oil tank Low Low Level **Yes**
 - 2. Oil pressure in SCSSV **Yes**
 - 3. Pump motor running signal – stop/run **Yes**
 - 4. Oil pressure in SSV **Yes**
 - 5. Indication of position in oil tank Low Level **Yes**

VI. MISCELLANEOUS CONTROLS

- A. Ability to manually pump SCSSV and SSV open** **Yes**
- B. Level switch on hydraulic reservoir** **Yes**
- 1. Level switch High (transmitter) **Yes**
 - 2. Level switch Low (transmitter) **Yes**
 - 3. Low Low will stop the pump **Yes**
- C. PSL test circuit** **Yes**

VII. INSTALLATION KIT

- A. Stand/Field Mounted Design** **Yes**
- A.1.** Distance from wellhead tree.....max. 10 m
- B. Heater for control panel** **Yes**

VIII. SITE CONDITIONS

- A. Onshore** **X**
- C. Maximum temperature** 40 °C
- D. Minimum temperature** -29 °C

IX. DOCUMENTATION/CERTIFICATION REQUIREMENTS:

Index	Description	For tender	For delivery
A,	Certificate of Origin (each component)	YES (sample)	YES
B,	Certificate of Compliance/Conformity	YES (sample)	YES
C,	Certificate of Calibration	YES (sample)	YES
D,	Quality Plan	YES	YES

Annex A

E,	Maintenance/Inspection Report	YES (sample)	YES
F,	Manufacture/Production Schedule	YES	
G,	Recommended Spare Parts List	YES	YES
H,	Third Part Certification (ATEX, PED)	YES (sample)	YES
I,	CE Marking Required		YES
J,	List of recommended hydraulic fluids	YES	YES
K,	Certificate of material	YES (sample)	YES

Point F – we require this point to be fulfilled by each individual order, no later than 21 days after receiving the individual order.

Comments:

This device will be installed in the EU country it means that must comply with the EU rules.