**VALVE SPECIFICATION**

E-TSM 102 Appendix

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 01 Plant | 02 Location, Room No | | | 03 System No | | 04 Component No |
|  |  | | |  | |  |
| 05 Quantity | 06 Location, Referring to Containment | | | | | |
|  | Outside |  | Inside | |  | |
| 08 Date | 09 Revised; Date Item | | | | | |
|  |  | | | | | |

**VALVE FUNCTION**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 21 Valve Function | | | | | |
| Isolation valve |  | Check valve |  | Shut-off valve |  |

**OPERATING CONDITIONS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 Medium | | | | | | | 11 Operating Pressure | | | | | | | | 12 Operating Temperature | | | | | | | | | | | | |
|  | | | | | | |  | | | | | | | MPa |  | | | | | | | °C | | | | | |
| 13 Flow | | | | | | | 14 Normal position | | | | | | | | 15 Opening / Closing time | | | | | | | | | | | | |
|  | | m3/h | | | | | Open |  | | Close | |  | | | **Max:** | |  | **/** |  | | **Min:** | |  | | **/** |  | s |
| 16 Flow tending to | | | | | | | 17 Operating Frequency (No/yr) | | | | | | | | 18 Transients | | | | | | | | | | | | |
| Open |  | | Close | |  | |  | | | | | | | |  | | | | | | | | | | | | |
| 19 Ambient Conditions | | | | Pressure | | | | | Temperature | | | | Humidity | | | | | | | Radiation | | | | | | | |
| Normal | | | |  | | MPa | | |  | | °C | |  | | | R H % | | | |  | | | | mSv/h | | | |
| 20 Ambient Conditions | | | | Pressure | | | | | Temperature | | | | Humidity | | | | | | | Radiation | | | | | | | |
| Abnormal | | | |  | | MPa | | |  | | °C | |  | | | R H % | | | |  | | | | mSv/h | | | |

**DESIGN DATA**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22 Valve Type | | | | | | | 23 Design Pressure | | | | | | | | | | | | | | | | | | | | 24 Design Temp | | | | | | | | | | | | | | | | | | | | | 25 Flow coeff. | | | | | | | | | | | | | | | | | | | |
|  | | | | | | |  | | | | | | | | | | | | | | | | MPa | | | |  | | | | | | | | | | | °C | | | | | | | | | | Kv | | | | | | | | | |  | | | m3/h | | | | | | |
| 26 Connection Size | | | | | | | 27 Connection type | | | | | | | | | | | | | | | | | | | | 28 Bonnet Relief | | | | | | | | | | | | | | | | | | | | | 29 Nozzle for | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | Weld | | | | |  | | | | Flange | | | |  | Thread | | | |  | | Yes | | | | | | |  | | | | | No | | | |  | | | | | Body drain | | | | | | | | |  | | | Leakage test | | | | | | |  |
| 30 Max differential pressure when opening the valve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ΔP | | | | | | | | MPa  MPa | | | | | | | | | | | Upstream press. | | | | | | | | | | MPa | | | | | | | | | | | | Downstream press. | | | | | | | | | | | | | | | MPa | | | | | | | | | | | |
| 31 Max differential pressure when closing the valve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ΔP | | | | | | | | MPa  MPa | | | | | | | | | | | Upstream pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | MPa | | | | | | | | | | | |
| 32 Hard Facing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seat | | | | | | | | |  | | | | | | | | | | | | | | | | | | | Disc | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | |
| 33 Valve is end point of pressure boundary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Upstream press. | | | | | | | | | | | | |  | | |
| YES |  | | NO | | | |  | | | | If yes, no seat leakage shall occur at hydraulic test | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | MPa | | | | | | | Downstream press. | | | | | | | | | | |  | | | |
| 34 Stem Sealing Arrangement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single Packing | | | | |  | | | | | Double Packing with intermediate drain | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | Bellows with single packing | | | | | | | | | | | | | | | | | | | | | | | | |  |
| 35 Pivot Pin Sealing Arrangement (check valve) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 Body Bonnet Sealing Arrangement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single gasket | | | | | | | | | | | | | |  | | | | Provision for seal weld | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | Pressure Seal | | | | | | | | | | | | | | | |  | |
| 37.1 Electrical Position Indication | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 37.2 Mechanical Position Indication | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Open and Closed | | | | | | | | |  | | | | | | | | Continuous | | | | | | |  | | | | | | | | | Yes | | |  | | | | | | | | | | | No | | | | | | | |  | | | | | | | | | | | | |
| 38 Hydraulic removal of stem packing | | | | | | | | | | | | | | | | | | 39 Back seat | | | | | | | | | | | | | | | | | | | | | | | | | | | 40 Inservice Inspection | | | | | | | | | | | | | | | | | | | | | | |
| Yes | |  | | | | No | | | | | | | | |  | | | Yes | | | |  | | | | | | | | No | | | | |  | | | | | | | | | | Yes | | | | | | | | |  | | | | | No | | | |  | | | | |
| 41 Spring-Loaded Stem Nut | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yes | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | No | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | |
| 42 Connecting Pipe Dimension Inlet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 43 Connecting Pipe Dimension Outlet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | mm | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | mm | | | | | | | | | | | | | | | | | | |
| 44 Max Valve Length | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 45 Max Height | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | mm | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | mm | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46 Force on Disc / Stem | | | | | | | | |
| Max pressure |  | MPa Upstream press. | tending to open |  | tending to close |  | | N |
| Max pressure |  | MPa Downstream press. | tending to open |  | | | N | |

**MATERIAL**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 47 Restriction to Co-based material | | 48 Restrictions to PTFE | | | 49 Restrictions to Aluminium | | |
| Yes | No | Yes | | No | Yes | | No |
| 50 Connecting Pipe Inlet | | | 51 Connecting Pipe Outlet | | | | |
|  | | |  | | | | |
| 52 Body Bonnet | | | 53 Stem | | | | |
|  | | |  | | | | |
| 54 Disc | | | 55 Seat | | | | |
|  | | |  | | | | |
| 56 Gasket, Body Bonnet | | | 57 Stem Packing | | | | |
|  | | |  | | | | |
| 58 Connection flanges gasket | | | 59 Hard Facing | | | | |
|  | | | Seat | | | Disc | |

**QUALITY**

|  |  |  |  |
| --- | --- | --- | --- |
| 60 Quality Class | 61 Design acc. to: | 62 Inspection acc. to: | 63 Seismic class |
|  |  |  |  |
| 64 Surface treatment acc to: | 65 Tightness class (internal leakage) | 66Tightness class (leakage to atmosphere): | |
|  |  |  | |

**ACTUATOR**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 67 Pneumatic |  | Motor |  | | Handwheel | |  |
| 68 Spring-Loaded Stem Nut (if actuator is motor operated) | | | | Yes | | No | |

**DESIGN DATA ACTUATOR**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 69 Design Pressure | | | | | 70 Design Temperature | | | | 71 Actuating Medium | | | 72 Actuating Pressure | | | | | | |
|  | | | MPa | |  | | °C | |  | | | Max: |  | | Min: |  | | MPa |
| 73 Spring to | | | | | 74 Spring Force on Stem | | | | | | | | | | | | | |
| Open |  | Close | |  | Valve Open: |  | | | | N | Valve Closed: | | |  | | | N | |
| 75 Total gas force on stem at min actuating pressure (see item 72) | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | N | | | | | | | | | | |
| 76 Type | | | | | | | | | 77 Manufacturer | | | | | | | | | |
|  | | | | | | | | |  | | | | | | | | | |

**MOTOR**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 78 Specified Operating Time | | | | | | | | | | | | | | | | | | | | | | | | | | | 79 Voltage | | | | | | | | | | | | |
| Min: | |  | | | s | | | Max: | | |  | | | s | | | Normal: | | |  | | | | | | s |  | | | | | | | V | | | | | |
| 80 Position Indication | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No |  | | | | | Limit Switch | | | | | | | | |  | | | | Cont. Indication | | | | | | | | | |  | | | | Spec: | |  | | | | |
| 81 Req. Torque opening / closing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Start: | | |  | **/** | | |  | | | Nm | | | During Operation | | | | | | | |  | | | **/** |  | | | Nm | | Backseating | | | |  | | **/** |  | | Nm |
| 82 Max permitted Torque for the valve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Into open pos: | | | | | | | | |  | | | Nm | | | | | | Into close pos: | | | | |  | | | | | Nm | | | During operation: | | | | | |  | | Nm |
| 83 Valve Stem turns per full Stroke | | | | | | | | | | | | | | | | 84 Length of Stroke | | | | | | | | | | | | | | | | 85 Valve Stem Diameter | | | | | | | |
|  | | | | | | | | | | | | | | | |  | | | | | | mm | | | | | | | | | |  | | | | | | mm | |
| 86 Type | | | | | | | | | | | | | | | | | | | | | | 87 Manufacturer | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | |

**REMARK**

|  |
| --- |
| 88 Manufacturer to fill in item 46, 74, 81, 82, 83, 84 and 85: |
|  |