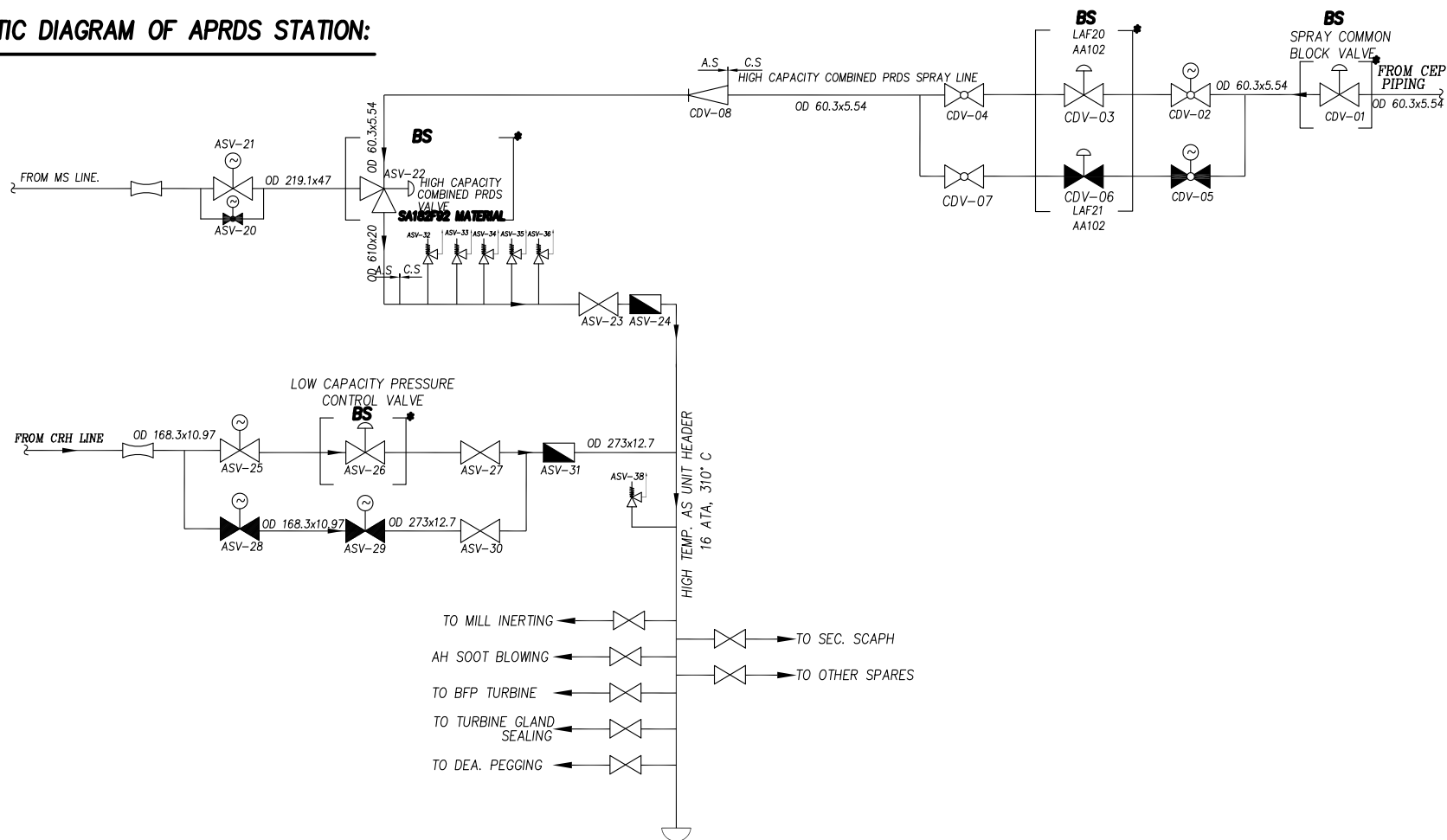


3-00-301-31358
DRAWING No

SCHEMATIC DIAGRAM OF APRDS STATION:



BS BIDDER SCOPE OF SUPPLY

CUST.NO: 7313 & 7314

NTPC LTD.
TELANGANA SUPER THERMAL POWER PROJECT
STAGE-1; 2 x 800MW
STEAM GENERATOR PACKAGE

DRAWN	CHECKED	APPROVED	DATE
E.KRITHIGA	C.SARAVANAN	R.PRABA	15.05.2017
TITLE	DRAWING No	REV	
AUX PRDS STATION SCHEME	3-00-301-31358	00	

SIZE A3

CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMBINED HC PRDS VALVE(ASV-22)	REV 01

GENERAL: THIS IS TO BE READ ALONG WITH TECHNICAL SPECIFICATION

GENERAL			
1. Valve tag No:	ASV-22		
2. Service:	High capacity combined PRDS valve (REFER ATTACHED THE ACTUAL LAYOUT EXTRACT FOR COMPLIANCE)		
3. KKS Tag No:	LBG10 AA101		
4. Qty Required per unit:	1 No.		
5. Total Qty Required:	2 Nos		
6. Manufacturer:	*		
7. Model No:	*		
BODY			
8. Type:	Thru ☐	3Way ☐	
	Z Type ☐	Angle ☒	
9. Form:	Globe ☒	Ball ☐	
	Butterfly ☐		
10. Size:	*		
11. Port Size:	*		
12. Connecting Pipe Size:	Inlet: OD 219.1x47(SA335 P92) Outlet: OD 610x20(SA335P91) Spray inlet: OD60.3x5.54(SA335P22)		
13. Body Rating:	ASME CL3500 SPL.(Dual class rating acceptable)		
14. Flow Direction:	SIDE ENTRY-BOTTOM EXIT		
15. Bonnet Type:	Standard ☐	Finned ☒	
	Extended ☒	Pr.Seal ☐	
(Bonnet joints of the internal threaded or union type will not be acceptable. Extension bonnets shall be provided when the max. temperature of flowing liquid is greater than 280 deg C)			
16. Material:	Body: ASTM A182 F92@ Packing: GRAFOIL Bolting: *		
17.	Suitable Matching pieces to match with pipe size and material specified shall be offered @ Allowable stress value at design temperature for F92 material as indicated in ASME BPV Code Case 2179-8 (2017) / ASME B31.1 Code Case 183-1 (2014) shall be reduced by 10% for design.		
18. Type of end connections:	Screwed ☐	BW ☒	SW ☐ Flanged ☐
Valve Edge preparation shall be as per attached drawing:3-80-300-19825; Inlet: Style 'X', d1=127.3 mm; Outlet: Style 'X', d1=572.6mm			
TRIM			
19. No.of Ports:	*		
20. Type :	Balanced		
21. Plug Characteristics:	L/LV/EP/MOD.PARABOLIC		
22. Guiding:	Cage ☒	Port ☐	
	Top ☐	Bottom ☐	
23. Stem Material:			
24. Plug Material:	Trim/cage material should be		
25. Seat Material:	suitable for design temperature		
26. Disc Material:	of 608 deg C		
27. Stem guide Material:			
28. Cage Material:			
ACTUATOR			
29. Type: (A)	Electric ☐	Pneumatic ☒	
	Hydraulic ☐		
(B)	DA/RA(AIR TO OPEN)		
30. Size:	*		
31. Supply Pressure:	5-8 kg/sqcm(a)		
Shut off Pressure:	8 kg/sqcm(a)		
32. Failsafe Position of valve:	Stayput ☒	Full Open ☐	
	Full Close ☐		
33. Diaphragm/Cylinder Pressure at	*		
	Valve full open:		
	Valve full close:		
34. Force required for process & Force required at Actuator:	*		
35. Actuator Sizing ΔP:	*		
36. If actuator electric fill in data sheet as per annexure furnished and shall comply with annexure-I specification:	NAPL		

						DRG NO : 4-00-306-41059	01
01	06.04.2018	ALTERATION	E.KRITHIGA	R.PRABHA	C.SARAVANAN		
00	12.05.2017	FRESH ISSUE	E.KRITHIGA	R.PRABHA	C.SARAVANAN	Page 1 of 4	
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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMBINED HC PRDS VALVE(ASV-22)	REV 01

POSITIONER			
37	Type:	Pneumatic ☐ Electronic ☐	39. If Pneumatic: Type: SMART Model: * Split Range: Yes ☐ No ☒ Controller signal: 4-20mA Air Supply: 5 kg/cm ² Input/output Yes ☒ No ☐ Pr.gauge required: By pass provision: Yes ☐ No ☒ Action: Direct ☐ Reverse ☐ Both ☒ Cam: =% ☐ Linear ☐ Both ☐
	Electro Pneumatic (SMART WITH FAIL FREEZE FACILITY WITH INBUILT POSITION FEEDBACK MODULE (4-20mA))#	☒	
	If Electronic Type:		
38	Model: Solid plate deversing contactors		
	Main Contactor: Solid State Thyristor ☐		
		Relay Switching ☐	
Also refer annexure – II position indicator required for valves and VCB.			

ACCESSORIES			
40.	Hand wheel:	Yes ☒ Side ☒ Top ☐	48. 36 way J.B with 2 Nos of 9 Pin Plug & socket connector and 1 No. of 5 Pin Plug & Socket Connector 49. Position Transmitter: Yes ☐ No ☒ <u>(Forms a part of SMART positioner)</u> Type: Pneumatic ☐ Electronic non-contact type ☐ Rating: 2 Wire 24V DC ☐ Output: 4-20mA ☐ 3-15 Psig ☐ 50. Torque switches : Yes ☐ No ☒ Qty: Rating: 51. Air Lock: Yes ☒ No ☐ Function: TO EFFECT STAYPUT Type: 3 way single acting ☐ 3 way double acting ☐ 52. Ambience: Dusty Corrosive ☒ Toxic Hazardous ☐ 53. Smart Positioner: To suit HART Protocol 54. Local positioner indicator: Required
41.	Air Filter:	Yes ☒ No ☐	
	Filter Size:	5 Micron ☒ 25 Micron ☐	
	Filter element Material:	Phosphor Bronze/Sintered Bronze	
42.	Limit Switches:	Yes ☒ No ☐	
	Qty:	1 at full open & 1 at full close	
	Rating:	240v.5Amp AC	
	No.of Contacts per switch:	2NO + 2NC	
43.	Solenoid valve to effect stayput:	Yes ☒ No ☐	
	Type 3 Way universal:	Yes ☒ No ☐	
	Rating 24V DC 2 wire Class H coil:	Yes ☒ No ☐	
44.	Vol. Booster:	Bidder to decide based on travel time specified in S.no:45	
45.	Travel Time:	< 10 sec	
46.	Installation:	Indoor ☐ Outdoor ☒	
47.	All accessories enclosure:	IP65 ^{\$}	

ACCESSORIES			
55	Seat Leakage:	FCI 70.2 Class IV ^{\$} ☒	59. Hookup Diagram: As per enclosed 60. Noise Level: Less than 85DBA at 1m from valve and piping system. The noise abatement shall be by valve body, trim design and not by use of silencers and external thermal insulation. 61. Performance Data: Linearity ± 1% Hysteresis ± 0.5% Sensitivity ± 0.5% Accuracy(Overall) ± 1%
		ISA ☐	
56	Approx. Weight(total) :	*	
57	Space req. for online service:	*	
58	Valve sizing as per ISA 75.01:	Yes ☒ No ☐	

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REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/MECH	Page 2 of 4	

62.	Medium:	SH Steam ☒	Sat. Steam ☐
		Water (saturated) ☐	
63.	Flow rate:	T/Hr	
64.	Operating inlet pressure:	kg/cm ² (a)	
65.	Operating inlet temperature:	°C	
66.	Outlet Pressure:	kg/cm ² (a)	
67.	Viscosity:	--	
68.	Operating (required.) Cv:		
69.	Operating noise level at 1 m from valve surface		
70.	Outlet Velocity:	m/s	

DESIGN DATA

		VALVE INLET	VALVE OUTLET	SPRAY SIDE	75.	Operating lift restriction:	10 to 80 % ^S
71.	Design Pressure, kg/cm ² (g):	297	20	42	76.	Lift at various operating conditions mentioned in slno.63 to 70:	*
72.	Design Temperature, °C:	608	497	508	77.	Downstream limitations:	*
73.	Valve exit outlet velocity restriction	8 m/s for liquid service; 150 m/s for steam service; 50% of sonic velocity for flashing service			78.	Upstream limitations:	*
74.	Rated Selected Cv of valve:				*	79.	Increase in signal: Air:

TESTING/INSPECTION: (AS PER APPROVED QP)

80.	Hydraulic test report:	Yes ☒	No ☐	84.	Valve functional test:	Yes ☒	No ☐
81.	Radiography:	Critical parts ☒	Total ☐	85.	Accessories functional test:	Yes ☒	No ☐
		Not required ☐		86.	Seat Leakage Test:	Yes ☒	No ☐
82.	IBR Test report Required :	Yes ☒	No ☐	87.	Material test report:	Yes ☒	No ☐
83.	Type test:	*		88.	Customer Inspection:		
	Cv test as per ISA 75.02 :	Required			In process:	Yes ☐	No ☐
	(i) At 100% of rated valve travel				Final:	Yes ☒	No ☐
	(ii) At each 10%(0-100%) of rated valve travel			89.	Third party inspection:	Yes ☐	No ☐
	*Type test to be done as per specification						

90	With Bid (3 sets)		
	C.V.HOOK UP DIAGRAM	Yes ☒	No ☐
	J.B WIRING DIAGRAM	Yes ☒	No ☐
	Catalogues	Yes ☒	No ☐
	Dimension drawing	Yes ☒	No ☐
	All data sheets	Yes ☒	No ☐
	Recommendations/ Limitations	Yes ☒	No ☐
	Contrary Report	Yes ☒	No ☐
	Deviation List	Yes ☒	No ☐
	Confirmatory report	Yes ☒	No ☐

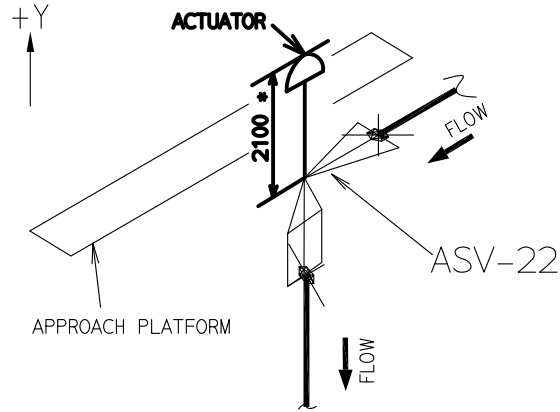
91.	Quality Plan(Enclosed):	Yes ☒	No ☐
92.	With equipment:		
	Dimensional drawing:	15 Sets + 1 CD	
	O & M:	15 Sets + 1 CD	
	Data Sheets:	15 Sets + 1 CD	
	Test Certificate:	03 Sets + 1CD	
93.	Valves sizing, Actuators sizing, noise level calculation required with bid (with formulae):	Yes ☒	No ☐

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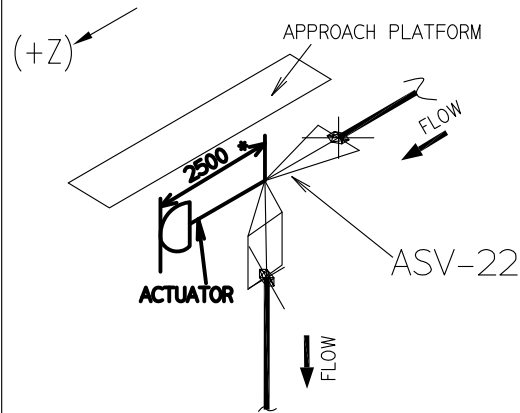
CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMBINED HC PRDS VALVE(ASV-22)	REV 01

SPARES			
94.	Commissioning Spares:	*	96. 2/3 Years Maintenance spares: *
95.	Mandatory Spares:	AS PER TECH SPEC	
OTHERS			
97.	Bidders experience list:	Required ☒	Not required ☐
98.	Operational feedback of such valves supplied elsewhere:	Required ☒	Not required ☐
99.	Equipment Guarantee:	Required ☒	Not required ☐
100.	System Guarantee:	Required ☒	Not required ☐
101.	<u>Service Contract for five years :- To quote separately:</u>		
102.	Commissioning of valves:	Required ☒	Not required ☐
NOTES			
1.* DENOTES BIDDER TO SPECIFY		2.\$ AS PER TENDER SPECIFICATION	
3. # AFTER INSPECTION, SMART POSITIONER TO BE PACKED SEPERATELY ALONG WITH THE CONTROL VALVE AND MOUNTING ACCESSORIES.THE SAME WILL BE OPENED AND INSTALLED ONLY DURING COMMISSIONING.			

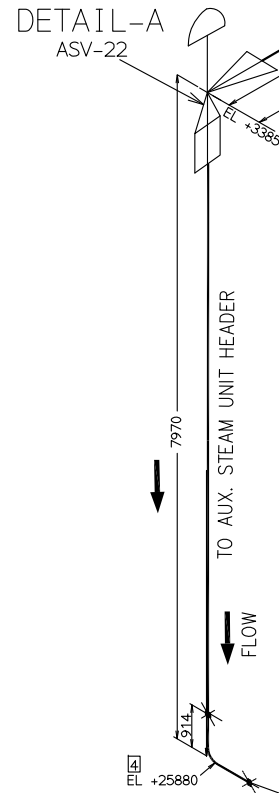
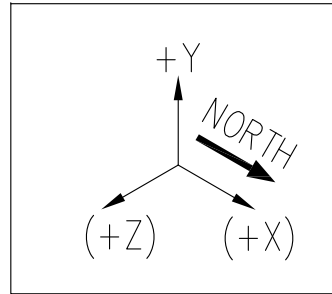
						DRG NO : 4-00-306-41059	01
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1-00-307-32845
DRAWING No.DETAIL-A
(OPTION-1)

*--DIMENSION INDICATES AVAILABLE SPACE FOR ACTUATOR (INCLUDING WITHDRAWAL SPACE) AS PER LAYOUT

DETAIL-A
(OPTION-2)

*--DIMENSION INDICATES AVAILABLE SPACE FOR ACTUATOR (INCLUDING WITHDRAWAL SPACE) AS PER LAYOUT



NOTES:

01. UPSTREAM STRAIGHT LENGTH AVAILABLE FROM CENTRE LINE OF VALVE - 2174mm
02. DOWNSTREAM STRAIGHT LENGTH AVAILABLE FROM CENTRE LINE OF VALVE INCLUDING ELBOW ARM LENGTH (ITEM NO 4) - 7970mm
03. VENDOR TO SELECT THE VALVE ACTUATOR ORIENTATION WITH EITHER OPTION-1 OR OPTION-2 ONLY.
04. SPACE FOR ACTUATOR LENGTH AVAILABLE IN +Y DIRECTION FROM CENTRE LINE OF VALVE INCLUDING WITHDRAWAL SPACE IS - 2100mm
05. SPACE FOR ACTUATOR LENGTH AVAILABLE IN +Z DIRECTION FROM CENTRE LINE OF VALVE INCLUDING WITHDRAWAL SPACE IS - 2500mm
06. ALL ACCESSORIES, HAND WHEEL, E.T.C OF THE CONTROL VALVE WHICH REQUIRES APPROACH/ACCESSIBILITY SHALL BE PROVIDED TOWARDS THE ACCESS PLATFORM SIDE ONLY (AS SHOWN IN DETAIL-A).

CUST NO.	7313	7314		REL NO.																	
CUSTOMER एन टी सी NTPC NTPC LTD. (A Government of India Enterprise)																					
NAME OF PROJECT. TELANGANA SUPER THERMAL POWER PROJECT PHASE - I (2 x 800 MW) STEAM GENERATOR PACKAGE																					
BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017			<table border="1"> <thead> <tr> <th>NAME</th> <th>SIGN</th> <th>DATE</th> <th>NO. OF VAR.</th> </tr> </thead> <tbody> <tr> <td>DRN B. SATISH</td> <td>-SD-</td> <td>14.03.2018</td> <td></td> </tr> <tr> <td>CHD B. SUKUMAR</td> <td>-SD-</td> <td>14.03.2018</td> <td></td> </tr> <tr> <td>APPD VENKAT</td> <td>-SD-</td> <td>14.03.2018</td> <td></td> </tr> </tbody> </table>			NAME	SIGN	DATE	NO. OF VAR.	DRN B. SATISH	-SD-	14.03.2018		CHD B. SUKUMAR	-SD-	14.03.2018		APPD VENKAT	-SD-	14.03.2018	
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APPD VENKAT	-SD-	14.03.2018																			
DEPT	GRADE OF UNTO. DIM	SCALE	WEIGHT (KG.)	REP. TO ASSY/OLD DRG.	ITEM NO.																
CODE	C / M / F																				
TITLE HC PRDS ISOMETRIC WITH SPACE AVAILABLE FOR ACTUATOR			CARD CODE U 01	DRAWING NO. 1-00-307-32845	REV 00																

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR LOW CAPACITY PRESSURE CONTROL VALVE(ASV-26)	REV: 01

GENERAL: THIS IS TO BE READ ALONG WITH TECHNICAL SPECIFICATION

GENERAL			
1. Valve tag No:	ASV-26		5. Total Qty Required: 2 Nos.
2. Service:	LOW CAPACITY PRESSURE CONTROL VALVE		6. Manufacturer: *
3. KKS Tag No:	LBG21 AA101		7. Model No: *
4. Qty Required per unit:	1 No.		
BODY			
8. Type:	Thru ☒ 3Way ☐	15. Bonnet Type:	Standard ☐ Finned ☒ Extended ☒ Pr.Seal ☐
9. Form:	Globe ☒ Ball ☐ Butterfly ☐	(Bonnet joints of the internal threaded or union type will not be acceptable. Extension bonnets shall be provided when the max. temperature of flowing liquid is greater than 280 deg C)	
10. Size:	*	16. Material:	Body: ASTM 217Gr.WC9/SA182F22
11. Port Size:	*		Packing: GRAFOIL
12. Connecting Pipe Size:	Inlet: OD 168.3x10.97(SA106Gr.C) Outlet: OD 273x12.7(SA106Gr.C)		Bolting: *
13. Body Rating:	ASME CL900	17.	Suitable Matching pieces of material P11/F11 to match with pipe size specified shall be offered
14. Flow Direction & Installation:	HORIZONTAL		
18. Type of end connections:	Screwed ☐ BW ☒ SW ☐ Flanged ☐	Valve Edge preparation shall be as per attached drawing:3-80-300-19825 Style 'D'; Inlet d1=147.4mm; Outlet d1=247.6mm	
TRIM			
19. No.of Ports:	*	23. Stem Material:	
20. Type :	Balanced	24. Plug Material:	
21. Plug Characteristics:	L/LV/EP/MOD.PARABOLIC	25. Seat Material:	316SS STELLITED WITH STELLITED FACED GUIDE POSTS AND BUSHINGS.
22. Guiding:	Cage ☒ Port ☐ Top ☐ Bottom ☐	26. Disc Material:	
		27. Stem guide Material:	
		28.	NOT USED
ACTUATOR			
29. Type: (A)	Electric ☐ Pneumatic ☒ Hydraulic ☐	33. Diaphragm/Cylinder Pressure at	*
(B)	DA/RA(AIR TO OPEN)	Valve full open:	
		Valve full close:	
30. Size:	*	34. Force required for process & Force required at Actuator:	*
31. Supply Pressure:	5-8 kg/sqcm(a)	35. Actuator Sizing ΔP:	*
Shut off Pressure:	8 kg/sqcm(a)	36. If actuator electric fill in data sheet as per annexure furnished and shall comply with annexure-I specification:	NAPL
32. Failsafe Position of valve:	Stayput ☒ Full Open ☐ Full Close ☐		

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR LOW CAPACITY PRESSURE CONTROL VALVE(ASV-26)	REV: 01

POSITIONER			
37.	Type:	Pneumatic ☐ Electronic ☐	 39. If Pneumatic: Type: SMART Model: * Split Range: Yes ☐ No ☒ Controller signal: 4-20mA Air Supply: 5 kg/cm² Input/output Yes ☒ No ☐ Pr.gauge required: By pass provision: Yes ☐ No ☒ Action: Direct ☐ Reverse ☐ Both ☒ Cam: =% ☐ Linear ☐ Both ☐
	Electro Pneumatic (SMART WITH FAIL FREEZE FACILITY WITH INBUILT POSITION FEEDBACK MODULE (4-20mA)) [#]	☒	
	If Electronic Type:		
	Model: Solid plate deversing contactors		
38.	Main Contactor:	Solid State Thyristor ☐	
		Relay Switching ☐	
Also refer annexure – II position indicator required for valves and VCB.			

ACCESSORIES			
40.	Hand wheel:	Yes ☒ Side ☒ Top ☐	48. 36 way J.B with 2 Nos of 9 Pin Plug & socket connector and 1 No. of 5 Pin Plug & Socket Connector 49. Position Transmitter: Yes ☐ No ☒ <u>(Forms a part of SMART positioner)</u> Type: Pneumatic ☐ Electronic non-contact type ☐ Rating: 2 Wire 24V DC ☐ Output: 4-20mA ☐ 3-15 Psig ☐ 50. Torque switches : Yes ☐ No ☒ Qty: Rating: 51. Air Lock: Yes ☒ No ☐ Function: TO EFFECT STAYPUT Type: 3 way single acting ☐ 3 way double acting ☐ 52. Ambience: Dusty Corrosive ☒ Toxic Hazardous ☐ 53. Smart Positioner: To suit HART Protocol 54. Local positioner indicator: Required
41.	Air Filter:	Yes ☒ No ☐	
	Filter Size:	5 Micron ☒ 25 Micron ☐	
	Filter element Material:	Phosphor Bronze/Sintered Bronze	
42.	Limit Switches:	Yes ☒ No ☐	
	Qty:	1 at full open & 1 at full close	
	Rating:	240v.5Amp AC	
	No.of Contacts per switch:	2NO + 2NC	
43.	Solenoid valve to effect stayput:	Yes ☒ No ☐	
	Type 3 Way universal:	Yes ☒ No ☐	
	Rating 24V DC 2 wire Class H coil:	Yes ☒ No ☐	
44.	Vol. Booster:	Bidder to decide based on travel time specified in S.no:45	
45.	Travel Time:	< 10 sec	
46.	Installation:	Indoor ☐ Outdoor ☒	
47.	All accessories enclosure:	IP65 ^{\$}	

ACCESSORIES			
55.	Seat Leakage:	FCI 70.2 Class IV ^{\$} ☒ ISA ☐	59. Hookup Diagram: As per enclosed 60. Noise Level: Less than 85DBA at 1m from valve and piping system. The noise abatement shall be by valve body, trim design and not by use of silencers and external thermal insulation. 61. Performance Data: Linearity ± 1% Hysteresis ± 0.5% Sensitivity ± 0.5% Accuracy(Overall) ± 1%
56.	Approx. Weight(total) :	*	
57.	Space req. for online service:	*	
58.	Valve sizing as per ISA 75.01:	Yes ☒ No ☐	

						DRG NO : 4-00-306-41060	01
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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR LOW CAPACITY PRESSURE CONTROL VALVE(ASV-26)	REV: 01

VALVE SIZING DATA																															
62.	Medium:	SH Steam ☒	Sat. Steam ☐	CONDITION REFER DRAWING NO. 4-00-306-41065 FOR VALVE SIZING DATA REFER STANDARD TABLE <table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> </tr> <tr> <td style="text-align: center;"><85dBA</td> <td style="text-align: center;"><85dBA</td> <td style="text-align: center;"><85dBA</td> </tr> <tr> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> </tr> </table>		*	*	*	<85dBA	<85dBA	<85dBA	*	*	*																	
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*	*	*																													
	Water (saturated)	☐																													
63.	Flow rate:	T/Hr																													
64.	Operating inlet pressure:	kg/cm ² (a)																													
65.	Operating inlet temperature:	°C																													
66.	Outlet Pressure:	kg/cm ² (a)																													
67.	Viscosity:	--																													
68.	Operating (required.) Cv:																														
69.	Operating noise level at 1 m from valve surface																														
70.	Outlet Velocity:	m/s																													
DESIGN DATA																															
71.	Design Pressure, kg/cm ² (g):	77.3		76.	Lift at various operating conditions mentioned in slno.63 to 70: *																										
72.	Design Temperature, °C:	390		77.	Downstream limitations: *																										
73.	Valve exit outlet velocity restriction	8 m/s for liquid service; 150 m/s for steam service; 50% of sonic velocity for flashing service		78.	Upstream limitations: *																										
74.	Rated Selected Cv of valve:	*		79.	Increase in signal: Air: To open the valve																										
75.	Operating lift restriction:	10 to 80 % ^{\$}																													
75(a). The valve stem travel range from min. flow to max. flow condition shall not be less than 50% of the total stem travel.																															
TESTING/INSPECTION: (AS PER APPROVED QP)																															
80.	Hydraulic test report:	Yes ☒	No ☐	84.	Valve functional test: Yes ☒ No ☐																										
81.	Radiography:	Critical parts ☒	Total ☐	85.	Accessories functional test: Yes ☒ No ☐																										
		Not required ☐		86.	Seat Leakage Test: Yes ☒ No ☐																										
82.	IBR Test report Required :	Yes ☒	No ☐	87.	Material test report: Yes ☒ No ☐																										
83.	Type test:	*		88.	Customer Inspection:																										
	Cv test as per ISA 75.02 :	Required			In process: Yes ☐ No ☐																										
	(i) At 100% of rated valve travel				Final: Yes ☒ No ☐																										
	(ii) At each 10%(0-100%) of rated valve travel			89.	Third party inspection: Yes ☐ No ☐																										
	*Type test to be done as per specification																														
DOCUMENTATION (REQUIRED)																															
90.	With Bid (3 sets)			91.	Quality Plan(Enclosed): Yes ☒ No ☐																										
	C.V.HOOK UP DIAGRAM	Yes ☒	No ☐	92.	With equipment:																										
	J.B WIRING DIAGRAM	Yes ☒	No ☐		Dimensional drawing: 15 Sets + 1 CD																										
	Catalogues	Yes ☒	No ☐		O & M: 15 Sets + 1 CD																										
	Dimension drawing	Yes ☒	No ☐		Data Sheets: 15 Sets + 1 CD																										
	All data sheets	Yes ☒	No ☐		Test Certificate: 03 Sets + 1CD																										
	Recommendations/ Limitations	Yes ☒	No ☐	93.	Valves sizing, Actuators sizing, noise level calculation required with bid (with formulae): Yes ☒ No ☐																										
	Contrary Report	Yes ☒	No ☐																												
	Deviation List	Yes ☒	No ☐																												
	Confirmatory report	Yes ☒	No ☐																												
<table border="1" style="width: 100%;"> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td rowspan="4" style="text-align: center; vertical-align: middle;">DRG NO : 4-00-306-41060</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">01</td> </tr> <tr> <td>01</td> <td>06.04.2018</td> <td>ALTERATION</td> <td>E.KRITHIGA</td> <td>R.PRABHA</td> <td>C.SARAVANAN</td> </tr> <tr> <td>00</td> <td>15.05.2017</td> <td>FRESH ISSUE</td> <td>E.KRITHIGA</td> <td>R.PRABHA</td> <td>C.SARAVANAN</td> </tr> <tr> <td>REV</td> <td>DATE</td> <td>ALTERATION</td> <td>PREPARED</td> <td>APPD/C&I</td> <td>APPD/MECH</td> </tr> </table>												DRG NO : 4-00-306-41060	01	01	06.04.2018	ALTERATION	E.KRITHIGA	R.PRABHA	C.SARAVANAN	00	15.05.2017	FRESH ISSUE	E.KRITHIGA	R.PRABHA	C.SARAVANAN	REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/MECH
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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR LOW CAPACITY PRESSURE CONTROL VALVE(ASV-26)	REV: 01

SPARES			
94.	Commissioning Spares:	*	96. 2/3 Years Maintenance spares: *
95.	Mandatory Spares:	AS PER TECH SPEC	
OTHERS			
97.	Bidders experience list:	Required ☒	Not required ☐
98.	Operational feedback of such valves supplied elsewhere:	Required ☒	Not required ☐
99.	Equipment Guarantee:	Required ☒	Not required ☐
100.	System Guarantee:	Required ☒	Not required ☐
101.	<u>Service Contract for five years :- To quote separately:</u>		
102.	Commissioning of valves:	Required ☒	Not required ☐
NOTES			
1.* DENOTES BIDDER TO SPECIFY		2.\$ AS PER TENDER SPECIFICATION	
3. # AFTER INSPECTION, SMART POSITIONER TO BE PACKED SEPERATELY ALONG WITH THE CONTROL VALVE AND MOUNTING ACCESSORIES.THE SAME WILL BE OPENED AND INSTALLED ONLY DURING COMMISSIONING.			

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMMON SPRAY BLOCK VALVE (CDV-01)	REV: 01

GENERAL: THIS IS TO BE READ ALONG WITH TECHNICAL SPECIFICATION

GENERAL			
1. Valve tag No:	CDV-01		5. Total Qty Required: 2 Nos.
2. Service:	COMMON SPRAY BLOCK VALVE		6. Manufacturer: *
3. KKS Tag No:	LAF10 AA101		7. Model No: *
4. Qty Required per unit:	1 No.		
BODY			
8. Type:	Thru ☒ 3Way ☐	15. Bonnet Type: Standard ☒ Finned ☐	
	Z Type ☐ Angle ☐	Extended ☐ Pr.Seal ☐	
9. Form:	Globe ☒ Ball ☐	(Bonnet joints of the internal threaded or union type will not be acceptable. Extension bonnets shall be provided when the max. temperature of flowing liquid is greater than 280 deg C)	
	Butterfly ☐	16. Material: Body: ASTM 216Gr.WCB/SA105	
10. Size:	*		Packing: GRAFOIL
11. Port Size:	*		Bolting: *
12. Connecting Pipe Size:	Inlet: OD 60.3x5.54(SA106Gr.B) Outlet: OD 60.3x5.54(SA106Gr.B)		17. Suitable Matching pieces to match with pipe size specified shall be offered
13. Body Rating:	ASME Cl.300		
14. Flow Direction & Installation:	HORIZONTAL		
18. Type of end connections:	Screwed ☐ BW ☐ SW ☒ Flanged ☐		
Valve Edge preparation shall be as per ASME STANDARDS			
TRIM			
19. No.of Ports:	*		23. Stem Material:
20. Type :	Balanced		24. Plug Material: 316SS STELLITED WITH STELLITED FACED GUIDE POSTS AND BUSHINGS OR EQUIVALENT
21. Plug Characteristics:	QUICK OPENING		25. Seat Material:
22. Guiding:	Cage ☒ Port ☐	26. Disc Material:	27. Stem guide Material:
	Top ☐ Bottom ☐	28. Not Used	
ACTUATOR			
29. Type: (A)	Electric ☐ Pneumatic ☒	33. Diaphragm/Cylinder Pressure at Valve full open: *	
	Hydraulic ☐	Valve full close: *	
(B)	DA/RA(AIR TO OPEN)		34. Force required for process & Force required at Actuator: *
30. Size:	*		35. Actuator Sizing ΔP: *
31. Supply Pressure:	5-8 kg/sqcm(a)		36. If actuator electric fill in data sheet as per annexure furnished and shall comply with annexure-I specification: NAPL
Shut off Pressure:	8 kg/sqcm(a)		
32. Failsafe Position of valve:	Stayput ☒ Full Open ☐		
	Full Close ☐		

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMMON SPRAY BLOCK VALVE (CDV-01)	REV: 01

POSITIONER : NOT REQUIRED			
37.	Type:	Pneumatic ☐ Electronic ☐	39.
	Electro Pneumatic (SMART WITH FAIL FREEZE FACILITY WITH INBUILT POSITION FEEDBACK MODULE (4-20mA)) [#]	☒	If Pneumatic: Type: SMART Model: *
	If Electronic	Type:	Split Range: Yes ☐ No ☒
38.	Main Contactor:	Model: Solid plate deversing contactors	Controller signal: 4-20mA
		Solid State Thyristor ☐	Air Supply: 5 kg/cm ²
		Relay Switching ☐	Input/output Pr.gauge required: Yes ☒ No ☐
	Also refer annexure – II position indicator required for valves and VCB.		By pass provision: Yes ☐ No ☒
			Action: Direct ☐ Reverse ☐ Both ☒
			Cam: =% ☐ Linear ☐ Both ☐
ACCESSORIES			
40.	Hand wheel:	Yes ☒ Side ☒ Top ☐	48.
41.	Air Filter:	Yes ☒ No ☐	36 way J.B with 2 Nos of 9 Pin Plug & socket connector and 1 No. of 5 Pin Plug & Socket Connector
	Filter Size:	5 Micron ☒ 25 Micron ☐	49.
	Filter element Material:	Phosphor Bronze/Sintered Bronze	Position Transmitter: Yes ☐ No ☒
42.	Limit Switches:	Yes ☒ No ☐	(Forms a part of SMART positioner)
	Qty:	1 at full open & 1 at full close	Type: Pneumatic ☐ Electronic non-contact type ☐
	Rating:	240v.5Amp AC	Rating: 2 Wire 24V DC ☐
	No.of Contacts per switch:	2NO + 2NC	Output: 4-20mA ☐ 3-15 Psig ☐
43.	Solenoid valve to effect stayput:	Yes ☒ No ☐	50.
	Type 3 Way universal:	Yes ☒ No ☐	Torque switches : Yes ☐ No ☒
	Rating 24V DC 2 wire Class H coil:	Yes ☒ No ☐	Qty:
44.	Vol. Booster:	Bidder to decide based on travel time specified in S.no:45	Rating:
45.	Travel Time:	< 10 sec	51.
46.	Installation:	Indoor ☐ Outdoor ☒	Air Lock: Yes ☒ No ☐
47.	All accessories enclosure:	IP65 ^{\$}	Function: TO EFFECT STAYPUT
			Type: 3 way single acting ☐
			3 way double acting ☐
			52.
			Ambience: Dusty Corrosive ☒
			Toxic Hazardous ☐
			53.
			Smart Positioner: To suit HART Protocol
			54.
			Local positioner indicator: Required
ACCESSORIES			
55.	Seat Leakage:	FCI 70.2 Class IV ^{\$} ☒	59.
		ISA ☐	Hookup Diagram: As per enclosed
56.	Approx. Weight(total) :	*	60.
57.	Space req. for online service:	*	Noise Level: Less than 85DBA at 1m from valve and piping system. The noise abatement shall be by valve body, trim design and not by use of silencers and external thermal insulation.
58.	Valve sizing as per ISA 75.01:	Yes ☒ No ☐	61.
			Performance Data:
			Linearity ± 1%
			Hysteresis ± 0.5%
			Sensitivity ± 0.5%
			Accuracy(Overall) ± 1%

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMMON SPRAY BLOCK VALVE (CDV-01)	REV: 01

VALVE SIZING DATA												
62.	Medium:	SH Steam ☐ Sat. Steam ☐	CONDITION REFER DRAWING NO. 4-00-306-41064 FOR VALVE SIZING DATA REFER STANDARD TABLE <table border="1" style="margin: 0 auto; width: 100%;"> <tr> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> </tr> <tr> <td style="text-align: center;"><85dBA</td> <td style="text-align: center;"><85dBA</td> <td style="text-align: center;"><85dBA</td> </tr> <tr> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> </tr> </table>	*	*	*	<85dBA	<85dBA	<85dBA	*	*	*
*	*	*										
<85dBA	<85dBA	<85dBA										
*	*	*										
	Water (saturated) ☒											
63.	Flow rate:	T/Hr										
64.	Operating inlet pressure:	kg/cm ² (a)										
65.	Operating inlet temperature:	°C										
66.	Outlet Pressure:	kg/cm ² (a)										
67.	Viscosity:	--										
68.	Operating (required.) Cv:											
69.	Operating noise level at 1 m from valve surface											
70.	Outlet Velocity:	m/s										
DESIGN DATA												
71.	Design Pressure, kg/cm ² (g):	42	76. Lift at various operating conditions mentioned in slno.63 to 70: * 77. Downstream limitations: * 78. Upstream limitations: * 79. Increase in signal: Air: To open the valve									
72.	Design Temperature, °C:	95										
73.	Valve exit outlet velocity:	8 m/s for liquid service; 150 m/s for steam service; 50% of sonic velocity for flashing service										
74.	Rated Selected Cv of valve:	*										
75.	Operating lift restriction:	-										
TESTING/INSPECTION: (AS PER APPROVED QP)												
80.	Hydraulic test report:	Yes ☒ No ☐	84. Valve functional test: Yes ☒ No ☐ 85. Accessories functional test: Yes ☒ No ☐ 86. Seat Leakage Test: Yes ☒ No ☐ 87. Material test report: Yes ☒ No ☐ 88. Customer Inspection: In process: Yes ☐ No ☐ Final: Yes ☒ No ☐ 89. Third party inspection: Yes ☐ No ☐									
81.	Radiography:	Critical parts ☒ Total ☐ Not required ☐										
82.	IBR Test report Required :	Yes ☒ No ☐										
83.	Type test:	*										
	Cv test as per ISA 75.02 :	Required										
	(i) At 100% of rated valve travel											
	(ii) At each 10%(0-100%) of rated valve travel											
	*Type test to be done as per specification											
DOCUMENTATION (REQUIRED)												
90.	With Bid (3 sets)			91. Quality Plan(Enclosed): Yes ☒ No ☐ 92. With equipment: Dimensional drawing: 15 Sets + 1 CD O & M: 15 Sets + 1 CD Data Sheets: 15 Sets + 1 CD Test Certificate: 03 Sets + 1CD 93. Valves sizing, Actuators sizing, noise level calculation required with bid (with formulae): Yes ☒ No ☐								
	C.V.HOOK UP DIAGRAM	Yes ☒ No ☐										
	J.B WIRING DIAGRAM	Yes ☒ No ☐										
	Catalogues	Yes ☒ No ☐										
	Dimension drawing	Yes ☒ No ☐										
	All data sheets	Yes ☒ No ☐										
	Recommendations/ Limitations	Yes ☒ No ☐										
	Contrary Report	Yes ☒ No ☐										
	Deviation List	Yes ☒ No ☐										
	Confirmatory report	Yes ☒ No ☐										

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR COMMON SPRAY BLOCK VALVE (CDV-01)	REV: 01

SPARES			
94.	Commissioning Spares:	*	96. 2/3 Years Maintenance spares: *
95.	Mandatory Spares:	AS PER TECH SPEC	

OTHERS			
97.	Bidders experience list:	Required ☒	Not required ☐
98.	Operational feedback of such valves supplied elsewhere:	Required ☒	Not required ☐
99.	Equipment Guarantee:	Required ☒	Not required ☐
100.	System Guarantee:	Required ☒	Not required ☐
101.	<u>Service Contract for five years :- To quote separately:</u>		
102.	Commissioning of valves:	Required ☒	Not required ☐

NOTES	
1.* DENOTES BIDDER TO SPECIFY	2.\$ AS PER TENDER SPECIFICATION
3. # AFTER INSPECTION, SMART POSITIONER TO BE PACKED SEPERATELY ALONG WITH THE CONTROL VALVE AND MOUNTING ACCESSORIES.THE SAME WILL BE OPENED AND INSTALLED ONLY DURING COMMISSIONING.	

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR SPRAY CONTROL VALVES (CDV-03 & CDV-06)	REV: 01

GENERAL: THIS IS TO BE READ ALONG WITH TECHNICAL SPECIFICATION

GENERAL			
1. Valve tag No:	CDV-03, CDV-06		
2. Service:	SPRAY CONTROL VALVES		
3. KKS Tag No:	LAF20 AA102 & LAF21 AA102		
4. Qty Required per unit:	2 Nos		
5. Total Qty Required:	4 Nos.		
6. Manufacturer:	*		
7. Model No:	*		
BODY			
8. Type:	Thru ☒ 3Way ☐	15. Bonnet Type: Standard ☒ Finned ☐	
	Z Type ☐ Angle ☐	Extended ☐ Pr.Seal ☐	
9. Form:	Globe ☒ Ball ☐	(Bonnet joints of the internal threaded or union type will not be acceptable. Extension bonnets shall be provided when the max. temperature of flowing liquid is greater than 280 deg C)	
	Butterfly ☐		
10. Size:	*		
11. Port Size:	*		
12. Connecting Pipe Size:	Inlet: OD 60.3x5.54(SA106Gr.B) Outlet: OD 60.3x5.54(SA106Gr.B)		
13. Body Rating:	ASME Cl.300		
14. Flow Direction & Installation:	HORIZONTAL		
16. Material:	Body: ASTM 216Gr.WCB/SA105 Packing: GRAFOIL Bolting: *		
17. Suitable Matching pieces to match with pipe size specified shall be offered			
18. Type of end connections:	Screwed ☐ BW ☐ SW ☒ Flanged ☐		
Valve Edge preparation shall be as per ASME STANDARDS			
TRIM			
19. No.of Ports:	*		
20. Type :	Balanced		
21. Plug Characteristics:	L/LV/EP/MOD.PARABOLIC		
22. Guiding:	Cage ☒ Port ☐	23. Stem Material:	
	Top ☐ Bottom ☐	24. Plug Material: 316SS STELLITED WITH STELLITED FACED GUIDE POSTS AND BUSHINGS OR EQUIVALENT	
		25. Seat Material:	
		26. Disc Material:	
		27. Stem guide Material:	
		28. NOT USED	
ACTUATOR			
29. Type: (A)	Electric ☐ Pneumatic ☒	33. Diaphragm/Cylinder Pressure at Valve full open: *	
	Hydraulic ☐	Valve full close:	
(B)	DA/RA(AIR TO OPEN)		
30. Size:	*		
31. Supply Pressure:	5-8 kg/sqcm(a)		
Shut off Pressure:	8 kg/sqcm(a)		
32. Failsafe Position of valve:	Stayput ☒ Full Open ☐	34. Force required for process & Force required at Actuator: *	
	Full Close ☐	35. Actuator Sizing ΔP: *	
		36. If actuator electric fill in data sheet as per annexure furnished and shall comply with annexure-I specification: NAPL	

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR SPRAY CONTROL VALVES (CDV-03 & CDV-06)	REV: 01

POSITIONER			
37.	Type:	Pneumatic ☐ Electronic ☐	39.
	Electro Pneumatic (SMART WITH FAIL FREEZE FACILITY WITH INBUILT POSITION FEEDBACK MODULE (4-20mA)) [#]	☒	If Pneumatic: Type: SMART Model: * Split Range: Yes ☐ No ☒ Controller signal: 4-20mA Air Supply: 5 kg/cm ² Input/output: Yes ☒ No ☐ Pr.gauge required: By pass provision: Yes ☐ No ☒ Action: Direct ☐ Reverse ☐ Both ☒ Cam: =% ☐ Linear ☐ Both ☐
38.	If Electronic Type:	Model: Solid plate deversing contactors	
	Main Contactor:	Solid State Thyristor ☐ Relay Switching ☐	
Also refer annexure – II position indicator required for valves and VCB.			
ACCESSORIES			
40.	Hand wheel:	Yes ☒ Side ☒ Top ☐	48.
41.	Air Filter:	Yes ☒ No ☐	36 way J.B with 2 Nos of 9 Pin Plug & socket connector and 1 No. of 5 Pin Plug & Socket Connector
	Filter Size:	5 Micron ☒ 25 Micron ☐	49.
	Filter element Material:	Phosphor Bronze/Sintered Bronze	Position Transmitter: Yes ☐ No ☒ (Forms a part of SMART positioner)
42.	Limit Switches:	Yes ☒ No ☐	Type: Pneumatic ☐ Electronic non-contact type ☐
	Qty:	1 at full open & 1 at full close	Rating: 2 Wire 24V DC ☐
	Rating:	240v.5Amp AC	Output: 4-20mA ☐ 3-15 Psig ☐
	No.of Contacts per switch:	2NO + 2NC	50.
43.	Solenoid valve to effect stayput:	Yes ☒ No ☐	Torque switches : Yes ☐ No ☒
	Type 3 Way universal:	Yes ☒ No ☐	Qty:
	Rating 24V DC 2 wire Class H coil:	Yes ☒ No ☐	Rating:
44.	Vol. Booster:	Bidder to decide based on travel time specified in S.no:45	51.
45.	Travel Time:	< 10 sec	Air Lock: Yes ☒ No ☐
46.	Installation:	Indoor ☐ Outdoor ☒	Function: TO EFFECT STAYPUT
47.	All accessories enclosure:	IP65 ^{\$}	Type: 3 way single acting ☐ 3 way double acting ☐
			52.
			Ambience: Dusty Corrosive ☒ Toxic Hazardous ☐
			53.
			Smart Positioner: To suit HART Protocol
			54.
			Local positioner indicator: Required
ACCESSORIES			
55.	Seat Leakage:	FCI 70.2 Class IV ^{\$} ☒ ISA ☐	59.
56.	Approx. Weight(total) :	*	Hookup Diagram: As per enclosed
57.	Space req. for online service:	*	60.
58.	Valve sizing as per ISA 75.01:	Yes ☒ No ☐	Noise Level: Less than 85DBA at 1m from valve and piping system. The noise abatement shall be by valve body, trim design and not by use of silencers and external thermal insulation.
			61.
			Performance Data:
			Linearity ± 1%
			Hysteresis ± 0.5%
			Sensitivity ± 0.5%
			Accuracy(Overall) ± 1%

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR SPRAY CONTROL VALVES (CDV-03 & CDV-06)	REV: 01

VALVE SIZING DATA														
62.	Medium:	SH Steam ☐	Sat. Steam ☐	CONDITION REFER DRAWING NO. 4-00-306-41064 FOR VALVE SIZING DATA REFER STANDARD TABLE <table border="1" style="width: 100%; text-align: center;"> <tr> <td>*</td> <td>*</td> <td>*</td> </tr> <tr> <td><85dBA</td> <td><85dBA</td> <td><85dBA</td> </tr> <tr> <td>*</td> <td>*</td> <td>*</td> </tr> </table>		*	*	*	<85dBA	<85dBA	<85dBA	*	*	*
*	*	*												
<85dBA	<85dBA	<85dBA												
*	*	*												
	Water (saturated)	☒												
63.	Flow rate:	T/Hr												
64.	Operating inlet pressure:	kg/cm ² (a)												
65.	Operating inlet temperature:	°C												
66.	Outlet Pressure:	kg/cm ² (a)												
67.	Viscosity:	--												
68.	Operating (required.) Cv:													
69.	Operating noise level at 1 m from valve surface													
70.	Outlet Velocity:	m/s												

DESIGN DATA					
71.	Design Pressure, kg/cm ² (g):	42	76.	Lift at various operating conditions mentioned in slno.63 to 70:	*
72.	Design Temperature, °C:	95	77.	Downstream limitations:	*
73.	Valve exit outlet velocity restriction	8 m/s for liquid service; 150 m/s for steam service; 50% of sonic velocity for flashing service	78.	Upstream limitations:	*
74.	Rated Selected Cv of valve:	*	79.	Increase in signal: Air:	To open the valve
75.	Operating lift restriction:	10 to 80 % ^{\$}			
75(a). The valve stem travel range from min. flow to max. flow condition shall not be less than 50% of the total stem travel.					

TESTING/INSPECTION: (AS PER APPROVED QP)					
80.	Hydraulic test report:	Yes ☒	No ☐	84.	Valve functional test: Yes ☒ No ☐
81.	Radiography:	Critical parts ☒	Total ☐	85.	Accessories functional test: Yes ☒ No ☐
		Not required ☐		86.	Seat Leakage Test: Yes ☒ No ☐
82.	IBR Test report Required :	Yes ☒	No ☐	87.	Material test report: Yes ☒ No ☐
83.	Type test:	*		88.	Customer Inspection:
	Cv test as per ISA 75.02 :	Required			In process: Yes ☐ No ☐
	(i) At 100% of rated valve travel				Final: Yes ☒ No ☐
	(ii) At each 10%(0-100%) of rated valve travel			89.	Third party inspection: Yes ☐ No ☐
	*Type test to be done as per specification				

DOCUMENTATION (REQUIRED)					
90.	With Bid (3 sets)			91.	Quality Plan(Enclosed): Yes ☒ No ☐
	C.V.HOOK UP DIAGRAM	Yes ☒	No ☐	92.	With equipment:
	J.B WIRING DIAGRAM	Yes ☒	No ☐		Dimensional drawing: 15 Sets + 1 CD
	Catalogues	Yes ☒	No ☐		O & M: 15 Sets + 1 CD
	Dimension drawing	Yes ☒	No ☐		Data Sheets: 15 Sets + 1 CD
	All data sheets	Yes ☒	No ☐		Test Certificate: 03 Sets + 1CD
	Recommendations/ Limitations	Yes ☒	No ☐	93.	Valves sizing, Actuators sizing, noise level calculation required with bid (with formulae): Yes ☒ No ☐
	Contrary Report	Yes ☒	No ☐		
	Deviation List	Yes ☒	No ☐		
	Confirmatory report	Yes ☒	No ☐		

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		DATASHEET FOR SPRAY CONTROL VALVES (CDV-03 & CDV-06)	REV: 01

SPARES			
94.	Commissioning Spares:	*	96. 2/3 Years Maintenance spares: *
95.	Mandatory Spares:	AS PER TECH SPEC	
OTHERS			
97.	Bidders experience list:	Required ☒	Not required ☐
98.	Operational feedback of such valves supplied elsewhere:	Required ☒	Not required ☐
99.	Equipment Guarantee:	Required ☒	Not required ☐
100.	System Guarantee:	Required ☒	Not required ☐
101.	<u>Service Contract for five years :- To quote separately:</u>		
102.	Commissioning of valves:	Required ☒	Not required ☐
NOTES			
1.* DENOTES BIDDER TO SPECIFY		2.\$ AS PER TENDER SPECIFICATION	
3. # AFTER INSPECTION, SMART POSITIONER TO BE PACKED SEPERATELY ALONG WITH THE CONTROL VALVE AND MOUNTING ACCESSORIES.THE SAME WILL BE OPENED AND INSTALLED ONLY DURING COMMISSIONING.			

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)								
		SIZING DATA FOR COMBINED HC PRDS VALVE								REV: 00

COMBINED PRDS VALVE SIZING DATA (ASV-22)

S.NO	PARAMETERS	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 8	CASE 9	CASE 10	CASE 11	MECH. DESIGN PARAMETERS
1.0 MAIN STEAM PARAMETERS AT HC PRDS INLET											
1.1	PRESSURE (kg/sqcm(a))	50	110	110	90	115	270	270	270	270	298
1.2	TEMPERATURE(deg C)	300	400	400	400	535	600	600	600	600	608
1.3	FLOW(t/hr)	134.70	185.90	209.41	147.15	192.70	40.17	203.82	231.42	235.78	
2.0 CEP SPRAY PARAMETERS AT HC PRDS INLET											
2.1	PRESSURE (kg/sqcm(a))	-	-	-	-	-	-	-	-	-	43
2.2	TEMPERATURE(deg C)	44.39	44.39	44.39	44.39	48.65	44.39	44.39	44.39	44.39	95
2.3	ENTHALPY(kcal/kg)	44.91	44.91	44.91	44.91	49.17	44.91	44.91	44.91	44.91	
2.4	FLOW(t/hr)	0.0	1.50	1.69	3.35	26.30	5.83	29.58	33.58	34.22	
3.0 AUXILIARY STEAM PARAMETERS AT HC PRDS OUTLET											
3.1	PRESSURE (kg/sqcm(a))	16	16	16	16	16	16	16	16	16	21
3.2	TEMPERATURE(deg C)	253.51	310	310	310	310	310	310	310	310	350
3.3	FLOW(t/hr)	134.7	187.4	211.1	150.5	219	46	233.4	265	270	
3.4	Cv REQUIRED	*	*	*	*	*	*	*	*	*	
3.5	OPERATING NOISE LEVEL AT 1.0 MTR	<85 dBA									
3.6	OUTLET VELOCITY	*	*	*	*	*	*	*	*	*	

NOTES:

1. THIS SIZING TABLE TO BE USED FOR SIZING OF HC PRDS VALVE (ASV-22), SPRAY BLOCK VALVE (CDV-01), SPRAY CONTROL VALVES (CDV-03, CDV-06).
2. *- BIDDER TO SPECIFY

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CI 12/01		CONTROL VALVE DATASHEET (IN ACCORDANCE WITH I.S.A FROM S20.51)	
		SIZING DATA FOR LOW CAPACITY PRESSURE CONTROL VALVE(ASV-26)	REV: 00

LOW CAPACITY PRESSURE CONTROL VALVE (ASV-26)

S.NO	PARAMETERS	CASE 6 NORMAL RUNNING AT 40% LOAD	CASE 6 NORMAL RUNNING AT 100% LOAD	CASE 7 NORMAL RUNNING AT 100% LOAD (CAPABILITY CHECK POINT)	MECH. DESIGN PARAMETERS
1.0 COLD REHEAT STEAM PARAMETERS AT LC PRV INLET					
1.1	PRESSURE (kg/sqcm(a))	26.19	64.93	64.93	78.3
1.2	TEMPERATURE(deg C)	376.36	370.35	370.35	390
1.3	FLOW(t/hr)	2.0	2.0	35.0	
2.0 AUXILIARY STEAM PARAMETERS AT LC PRV OUTLET					
2.1	PRESSURE (kg/sqcm(a))	16	16	16	21
2.2	TEMPERATURE(deg C)	368.11	325.66	325.66	350
2.3	FLOW(t/hr)	2.0	2.0	35.0	

NOTES:

- CASE-7 IS THE CAPABILITY CHECK POINT FOR LC PRESSURE REDUCING VALVE
- VALVE SELECTED SHALL BE SUITABLE FOR PASSING 35 t/hr AT RATED PARAMETERS.

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