



CONTROL VALVE SPECIFICATION SHEET

(IN ACCORDANCE WITH I.S.A. FORM S20.51)

PROJECT:

RIHAND STPP 2X500MW

CUST.No: 7047,7048

GENERAL:

1. Valve tag No. : ASS-128, ASS-131
2. Service : SECONDARY SCAPH DRAIN TANK
LEVEL CONTROL VALVE & BYPASS VALVE
3. Line No./Vessel No. : --
4. Qty. required per unit : 2 Nos.

5. Manufacturer : *
6. Model No. : *
7. Rating : ASME CI 300
8. Total Qty Required : 2 Nos.

BODY:

9. Type : Thru ☒ 3 Way ☐
Z type ☐ Angle ☐
☐
10. Form : Globe ☒ Ball ☐
Butterfly ☐ ☐
11. Size : *
12. Port Size : *
13. Connecting pipe size : Inlet : OD 114.3x6.02
Outlet : OD 114.3x6.02
14. Body rating : ASME CI. 300

16. Bonnet type : Standard ☒ Finned ☐
Extended ☐ Pr. seal ☐
☐
17. Material : Body : ASTM A 217 Gr WC6
Packing: GRAFOIL
Bolting : *
18. Flow direction : HORIZONTAL
19. Suitable matching pieces to match with pipe size specified shall be offered.

15. Type of end connections : Screwed ☐ BW ☒ SW ☐
NPI ☐ BSPT ☐ BS ☐
Flanged ☐ ☐ ☐
ANSI ☐ DIN ☐

Edge Preparation as per BPS. STY.'D'; d1=102.26

TRIM:

20. No. of ports : *
21. Type : Balanced ☒ Unbalanced ☐
22. Plug characteristics: ~~L/LV/EP/MODIFIED PARABOLIC~~
23. Guiding : Cage ☒ Port ☐ Top ☐
Bottom ☐

24. Stem material : SS316 STELLITED
25. Plug material : 17-4 PH SS
26. Seat material : 17-4 PH SS
27. Disc material : 17-4 PH SS
28. stem guide material : SS316 STELLITED
29. Quick change trim Yes ☒ No ☐

ACTUATOR:

30. Type : Electric ☐ Pneumatic ☒
Hydraulic ☐ DA/RA (AIR TO OPEN)
31. Size : *
32. Supply : 45 PSIG
33. Failsafe position : Stayput ☒
of valve. Full Close ☐ Full Open ☐

34. Diaphragm/Cylinder pressure at
Valve full open : *
Valve full close : *
35. Force required for process &
Force available at actuator. : *
36. Actuator sizing ΔP : *
37. If actuator electric fill in
data sheet as per annexure : NAPL
furnished and shall comply
with annexure-I specification.

MDL No: 7047-2-108-005

NTPC DOC NO. 1250-101-PC-PVI-Y-046
DRG. NO:

00	18.02.10	FRESH ISSUE	KONDAPA	R.PRABHA	R.SESHAGIRI
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

4-00-306-39174

REV
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POSITIONER:

38. Type : Pneumatic ☐ Electronic ☐
 DA/RA Electro Pneumatic (SMART) ☒
 SMART MAKE : SIEMENS
 MODEL NO: 6DR5211-0EN00-0AA0+6DR4004-8J

39. If Electronic : Type :
 Model : Solid plate deversing contactors
 Main contactor : Solid state thyristor : ☐
 Relay Switching : ☐
 Also refer annexure - II
 position indicator reqd. for Valve & VCB

40. If Pneumatic : Type : SMART
 Model : *
 Split range : Yes ☐ No ☒
 Controller Signal : 4-20 mA
 Air supply : 5 Kg/cm²
 Input/Output Pr. guage
 Required : Yes ☒ No ☐
 By pass provision : Yes ☐ No ☒
 Action : Direct ☐ Reverse ☐ Both ☒
 Cam : =% ☐ Linear ☐ Both ☐

ACCESSORIES:

41. Handwheel : Yes ☒ Side ☒ Top ☐
 42. Air filter : Yes ☒ No ☐
 Filter Size : 5 Micron ☐ 25 Micron ☒
 43. Limit Switches : Yes ☒ No ☐
 Qty. : 1 at full open &
 : 1 at full close
 Rating : 240v. 5Amp. ac
 No of contacts per switch : 2NO + 2NC
 44. Solenoid valve to effect
 Stayput : Yes ☒ No ☐
 Type : 3 Way universal: Yes ☒ No ☐
 Rating : 24V DC 2 wire
 Class H coil : Yes ☒ No ☐
 45. Vol. booster : Yes ☐ No ☒
 46. Travel time : < 10 sec
 47. Installation : Indoor ☐ Outdoor ☒
 48. All accessories enclosure : IP55

49. Position transmitter : Yes ☐ No ☒
 Type : Pneumatic : ☐ Electronic Non contact type ☒
 Rating : 2 wire 24V DC: ☒
 Output : 4-20 ma : ☒ 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
 53.1. Local Position Indicator: Required
 54. 36 way I.B. with 2 Nos. of 9 pin Plug & Socket connector and 1 No. 5 pin Plug & Socket connector.

MISCELLANEOUS:

54. Seat leakage : FCI 70.2 class ☒ IV
 I.S.A : ☐ ☐
 55. Approx. weight (total) : *
 56. Space requirements for : *
 online servicing

57. Valve sizing as per
 ISA 75.01 : Yes ☒ No ☐
 58. Velocity Required inside Trim : < 5 m/sec
 59. Plug and Socket Connection to be provided :

VALVE SIZING DATA:

61. Medium : SH Steam ☐ Sat. Steam ☐
 Water(Saturated) ☒
 62. Flow rate in T/Hr
 63. Operating inlet pressure in Kg/cm² (a)
 64. Operating inlet temperature in °C
 65. Outlet pressure in Kg/cm² (a)
 66. Viscosity : ---
 67. Operating (required) Cv
 68. Operating noise level at 1.0 metre from valve surface
 69. Outlet velocity

CONDITION			
1 (100% BMCR)	2 (30% BMCR)	3 (30% BMCR) (6" AMB)	4 (40% BMCR)
17.0	30.4	38.4	4.7
1.2	1.2	1.2	1.2
90	90	90	90
0.8	0.8	0.8	0.8

REFER STANDARD TABLE

*	*	*	*
< 85dBA	< 85dBA	< 85dBA	< 85dBA
*	*	*	*

18.02.10 KONDAPA R.PRABHA
 DATE PREPARED APPROVED/C&I APPROVED/MECH

DRG. NO: 4-00-306-39174 REV 00

DESIGN DATA:

70. Design Pressure Kg/cm²(g) 20
 71. Design Temperature °C : 260 °C
 72. Rated/Design/Selected Cv of valve : *
 73. Velocity restriction : 8m/sec for liquid service
 150m/sec for steam service

74. Operating lift restriction : 15 to 80 % .

75. lift at various operating

Conditions 1 TO 4 : *

76. Down stream limitations : *

77. Up stream limitations : *

78. Increase in signal :

Air : To Open the valve

TESTING/INSPECTION: (AS PER APPROVED QP)

79. Hydraulic test report : Yes ☒ No ☐
 80. Radiography : Critical Parts : ☒ Total ☐
 Not required : ☐
 81. IBR test report : Req'd. : ☒
 82. Type test : Capacity Evaluation by *
 ISA S39.2/5 39.4 : Required.
 83. Valve functional test : Yes ☒ No ☐

* Type test to be done atleast for one no on this consignment.

84. Accessories functional : Yes ☒ No ☐
 Test :

85. Seat leakage test : Yes ☒ No ☐

86. Material test report : Yes ☒ No ☐

87. Customer Inspection :
 In process : Yes ☐ No ☐
 Final : Yes ☒ No ☐

88. Third Party inspection : Yes ☐ No ☐

DOCUMENTATION: (Required)

89. With bid. (3 sets)
 C.V. HOOK UP DIAGRAM : Yes ☒ No ☐
 J.B WIRING DIAGRAM : Yes ☒ No ☐
 Catalogues : Yes ☒ No ☐
 Dimensional drawing : Yes ☒ No ☐
 All data sheets : Yes ☒ No ☐
 Recommendation /
 Limitation : Yes ☒ No ☐
 Contrary report : Yes ☒ No ☐
 Deviation list : Yes ☒ No ☐
 Confirmatory report : Yes ☒ No ☐
 90. Quality plan (enclosed) : Yes ☒ No ☐

91. With equipment :
 Dimensional drawing : 15 Sets
 O & M : ---do---
 Data Sheets : ---do---
 Test certificate : 1RTF + 3 Sets

92. Valve sizing, actuator sizing,
 noise level calculations required
 with bid(with formulae) : Yes ☒ No ☐

SPARES:

94. Commissioning spares : *
 95. Mandatory spares : AS PER TECH SPCN

96. 2/3 Years maintenance spares : *

OTHERS:

97. Bidders experience list : Required ☒ Not required ☐
 98. Operational feed back of such valves supplied elsewhere : Required ☒ Not required ☐
 99. Equipment guarantee : Required ☒ Not required ☐
 100. System guarantee : Required ☒ Not required ☐
 101. Service contract for 5 Years : - To quote seperately
 102. Commissioning of the valves : Required ☒ Not required ☐

NOTES:

1. * DENOTES BIDDER TO SPECIFY

18.02.10	KONDAPA	R.PRABHA	R.SESHAGIRI
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH

DRG. NO:

4-00-306-39174

REV

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CI 12/01



CONTROL VALVE SPECIFICATION SHEET

(IN ACCORDANCE WITH I.S.A. FORM S20.51)

PROJECT:

RIHAND STPP - 2x500MW

CUST.No: 7047

GENERAL: THIS IS TO BE READ ALONG WITH TECHNICAL SPECIFICATION PC: TSP: MAUDA: CV

1. Valve tag No. AS-04
2. Service : A C PLANT
PRESSURE CONTROL VALVE
3. Line No./Vessel No. : --
4. Qty. required per unit : 1 No.

5. Manufacturer : *
6. Model No. : *
7. Rating : ASME CL. 300
8. Total Qty Required : 1 No. /2 Units
(COMMON FOR 2 UNITS)

BODY:

9. Type : Thru ☒ 3 Way ☐
Z type ☐ Angle ☐
☐
10. Form : Globe ☒ Ball ☐
Butterfly ☐ ☐
11. Size : *
12. Port Size : *
13. Connecting Pipe size: Inlet : OD 114.3x6.02
Outlet : OD 168.3x7.11
14. Body rating : ASME CL. 300

16. Bonnet type : Standard ☒ Finned ☐
Extended ☐ Pr. seal ☐
☐
17. Material : Body : ASTM A 217 Gr WCB
Packing: GRAFOIL
Bolting : *
18. Flow direction : HORIZONTAL
19. Suitable matching pieces to match with pipe size specified shall be offered.

15. Type of end connections : Screwed ☐ BW ☒ (Steam side) SW ☐ (Spray side)
NPI ☐ BSPT ☐ BS ☐
Flanged ☐ ☐ ☐
ANSI ☐ DIN ☐

Edge Preparation as per BPS.

TRIM:

20. No. of ports : *
21. Type : Balanced ☒ Unbalanced ☐
22. Plug characteristics: ~~L/LV/EP~~ / ~~MODIFIED EP~~
23. Guiding : Cage ☒ Port ☐ Top ☐
Bottom ☐

24. Stem material : SS316 STELLITED
25. Plug material : SS316 STELLITED
26. Seat material : SS316 STELLITED
27. Disc material : 17-4 PH SS
28. stem guide material : SS316 STELLITED
29. Quick change trim Yes ☒ No ☐

ACTUATOR:

30. Type : Electric ☐ Pneumatic ☒
Hydraulic ☐ DA/RA (Air To Open)
31. Size : *
32. Supply : 45 PSIG
33. Failsafe position : Stayput ☒
of valve. Full Close ☐ Full Open ☐

34. Diaphragm/Cylinder pressure at
Valve full open : *
Valve full close :
35. Force required for process &
Force available at actuator. : *
36. Actuator sizing ΔP : *
37. If actuator electric fill in
data sheet as per annexure : NAPL
furnished and shall comply
with annexure-I specification.

MDL No: 7047-2-208-008

NTPC DOC NO. 1240-101-PC-PVI-Y-113

DRG. NO:

4-00-306-39176

REV

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00	18.02.10	FRESH ISSUE	P.KONDAPA	R.PRABHA	R.SESHAGIRI
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

POSITIONER:

38. Type : Pneumatic ☐ Electronic ☐
DA/RA Electro Pneumatic (SMART) ☒
SMART MAKE : SIEMENS
MODEL NO: 6DR5211-0EN00-0AA0+6DR4004-8J

39. If Electronic : Type :
Model : Solid plate deversing contactors
Main contactor : Solid state thyristor : ☐
Relay Switching : ☐
Also refer annexure - II
position indicator reqd. for Valve & VCB

40. If Electro Pneumatic : Type : SMART

Model : *

Split range : Yes ☐ No ☒

Controller Signal : 4-20 mA

Air supply : 5 Kg/cm²

Input/Output Pr. guage :

Required : Yes ☒ No ☐By pass provision : Yes ☐ No ☒Action : Direct ☐ Reverse ☐ Both ☒Cam : =% ☐ Linear ☐ Both ☐**ACCESSORIES:**

41. Handwheel : Yes ☒ Side ☒ Top ☐
42. Air filter : Yes ☒ No ☐
Filter Size : 5 Micron ☐ 25 Micron ☒
43. Limit Switches : Yes ☒ No ☐
Qty. : 1 at full open &
: 1 at full close
Rating : 240v. 5Amp. ac
No of contacts per switch : 2No + 2NC
44. Solenoid valve to effect
Stayput : Yes ☒ No ☐
Type : 3 Way universal: Yes ☒ No ☐
Rating : 24V DC 2 wire
Class H coil : Yes ☒ No ☐
45. Vol. booster : Yes ☐ No ☒
46. Travel time : <10 Sec
47. Installation : Indoor ☐ Outdoor ☒
48. All accessories enclosure : IP55

49. Position transmitter : Yes ☐ No ☒Type : Pneumatic : ☐ Electronic Non contact type ☒Rating : 2 wire 24V DC: ☒Output : 4-20 ma : ☒ 3-15 paig ☐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

53.1. Local position Indicator: Required.

54. 36 way J.B. with 2 Nos. of 9 pin Plug & Socket connector and 1 No. 5 pin Plug & Socket connector.

MISCELLANEOUS:

54. Seat leakage : ANSI B16.104 class ☒ IV
I.S.A : ☐ ☐
55. Approx. weight (total) : *
56. Space requirements for : *
online servicing

57. Valve sizing as per
ISA 75.01 : Yes ☒ No ☐

58. Velocity Required inside Trim : < * m/sec

59. ~~All electrical terminating : plug & socket type~~**VALVE SIZING DATA:**

61. Medium : SH Steam ☐ Sat. Steam ☒
Water(saturated) ☐
62. Flow rate in T/Hr
63. Operating inlet pressure in Kg/cm² (a)
64. Operating inlet temperature in °C
65. Outlet pressure in Kg/cm² (a)
66. Viscosity : ---
67. Operating (required) Cv
68. Operating noise level at 1.0 metre from valve surface
69. Outlet velocity

CONDITION

1	2	3
0.5	1.5	6.5
16	16	16
210	210	210
9	9	9

REFER STANDARD TABLE

*	*	*
<85 dBA	<85 dBA	<85 dBA
*	*	*

18.02.10 P.KONDAPA R.PRABHA
DATE PREPARED APPD/C&I APPD/Mech

DRG. NO:

4-00-306-39176

REV

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70. Design Pressure Kg/cm² (g) : 20

71. Design Temperature °C : 260 °C

72. Rated/Design/Selected Cv of valve ; *

73. Velocity restriction : Less than 0.3 MACH

74. Operating lift restriction : 10 to 80 % .

75. lift at various operating	
Conditions 1 TO 3	: *
76. Down stream limitations	: *
77. Up stream limitations	: *
78. Increase in signal Air	: To open the Valve

79.	Hydraulic test report	:	Yes	☒	No	☐
80.	Radiography : Critical Parts	:		☒	Total	☐
	Not required	:		☐		☐
81.	IBR test report : Req'd.	:		☒		☐
82.	Type test : Capacity Evolution by					
	ISA S39.2/5 39.4	:	Required.			
83.	Valve functional test	:	Yes	☒	No	☐

84.	Accessories functional	:	Yes	☒	No	☐
	Test	:				
85.	Seat leakage test	:	Yes	☒	No	☐
86.	Material test report	:	Yes	☒	No	☐
87.	Customer Inspection	:				
	In process	:	Yes	☐	No	☐
	Final	:	Yes	☒	No	☐
88.	Third Party inspection	:	Yes	☐	No	☐

89.	With bid. (3 sets)			
	C.V. HOOK UP DIAGRAM	: Yes	☒	No ☐
	J.B WIRING DIAGRAM	: Yes	☒	No ☐
	Catalogues	: Yes	☒	No ☐
	Dimensional drawing	: Yes	☒	No ☐
	All data sheets	: Yes	☒	No ☐
	Recommendation /			
	Limitation	: Yes	☒	No ☐
	Contrary report	: Yes	☒	No ☐
	Deviation list	: Yes	☒	No ☐
	Confirmatory report	: Yes	☒	No ☐
90.	Quality plan (enclosed)	: Yes	☒	No ☐

91. With equipment :
 Dimensional drawing : 15 Sets
 O & M ** : ---do---
 Data Sheets : ---do---
 Test certificate : 1RTF + 3 Sets

92. Valve sizing, actuator sizing,
 noise level calculations required
 with bid(with formulae) : Yes ☒ No ☐

94. Commissioning spares	:	*
95. Mandatory spares	:	As per specification

96. 2/3 Years maintenance spares : *

97. Bidders experience list	:	Required	☒	Not required	☐
98. Operational feed back 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 5 Years : -- To quote seperately</u>					
102. Commissioning of the valves	:	Required	☒	Not required	☐

1. * DENOTES BIDDER TO SPECIFY

18.02.10	P.KONDAPA	R.PRABHA	R.SESHAGIRI	DRG. NO:	4-00-306-39176	REV
DATE	PREPARED	APPD/C&I	APPD/Mech			00

CI 12/01



CONTROL VALVE SPECIFICATION SHEET

(IN ACCORDANCE WITH I.S.A. FORM S20.51)

PROJECT:

RIHAND STPP 2X500MW

CUST.No: 7047,7048

GENERAL:

1. Valve tag No. : ASS-122 & ASS-125
 2. Service : PRIMARY SCAPH DRAIN TANK
 LEVEL CONTROL VALVE & BYPASS VALVE
 3. Line No./Vessel No. : --
 4. Qty. required per unit : 2 Nos.

5. Manufacturer : *
 6. Model No. : *
 7. Rating : ASME CI 300
 8. Total Qty Required : 2 Nos

BODY:

9. Type : Thru ☒ 3 Way ☐
 Z type ☐ Angle ☐
 10. Form : Globe ☒ Ball ☐
 Butterfly ☐
 11. Size : *
 12. Port Size : *
 13. Connecting pipe size : Inlet : OD 88.9x5.49
 Outlet : OD 88.9x5.49
 14. Body rating : ASME CI. 300

16. Bonnet type : Standard ☒ Finned ☐
 Extended ☐ Pr. seal ☐
 17. Material : Body : ASTM A 217 Gr WC6
 Packing: GRAFOIL
 Bolting : *
 18. Flow direction : HORIZONTAL
 19. Suitable matching pieces to match with pipe size specified shall be offered.

15. Type of end connections : Screwed ☐
 NPI ☐
 Flanged ☐
 ANSI ☐

- BW ☒ SW ☐
 BSPT ☐ BS ☐
 DIN ☐

Edge Preparation as per BPS. STY.'D'; d1=79.0

TRIM:

20. No. of ports : *
 21. Type : Balanced ☒ Unbalanced ☐
 22. Plug characteristics: ~~L/V/EP~~ / MODIFIED PARABOLIC ☒
 23. Guiding : Cage ☒ Port ☐ Top ☐
 Bottom ☐

24. Stem material : SS316 STELLITED
 25. Plug material : 17-4 PH SS
 26. Seat material : 17-4 PH SS
 27. Disc material : 17-4 PH SS
 28. stem guide material : SS316 STELLITED
 29. Quick change trim Yes ☒ No ☐

ACTUATOR:

30. Type : Electric ☐ Pneumatic ☒
 Hydraulic ☐ DA/RA (AIR TO OPEN)
 31. Size : *
 32. Supply : 45 PSIG
 33. Failsafe position : Stayput ☒
 of valve. Full Close ☐ Full Open ☐

34. Diaphragm/Cylinder pressure at
 Valve full open : *
 Valve full close : *
 35. Force required for process &
 Force available at actuator. : *
 36. Actuator sizing ΔP : *
 37. If actuator electric fill in
 data sheet as per annexure : NAPL
 furnished and shall comply
 with annexure-I specification.

MDL No: 7047-2-108-004

NTPC DOC NO. 1240-101-PC-PVI-Y-045
 DRG. NO:

00	18.02.10	FRESH ISSUE	KONDAPA	R.PRABA	R.SESHABARI
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

4-00-306-39171

REV
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POSITIONER:

38. Type : Pneumatic ☐ Electronic ☐
 DA/RA Electro Pneumatic (SMART) ☒
 SMART MAKE : SIEMENS
 MODEL NO: 6DR5211-0EN00-0AA0+6DR4004-8J

39. If Electronic : Type :
 Model : Solid plate deversing contactors
 Main contactor : Solid state thyristor : ☐
 Relay Switching : ☐
 Also refer annexure - II
 position indicator reqd. for Valve & VCB

40. If Pneumatic : Type : SMART

Model : *
 Split range : Yes ☐ No ☒
 Controller Signal : 4-20 mA
 Air supply : 5 Kg/cm²
 Input/Output Pr. guage
 Required : Yes ☒ No ☐
 By pass provision : Yes ☐ No ☒
 Action : Direct ☐ Reverse ☐ Both ☒
 Cam : =% ☐ Linear ☐ Both ☐

ACCESSORIES:

41. Handwheel : Yes ☒ Side ☒ Top ☐
 42. Air filter : Yes ☒ No ☐
 Filter Size : 5 Micron ☐ 25 Micron ☒
 43. Limit Switches : Yes ☒ No ☐
 Qty. : 1 at full open &
 : 1 at full close
 Rating : 240v. 5Amp. ac
 No of contacts per switch : 2NO + 2NC

44. Solenoid valve to effect
 Stayput : Yes ☒ No ☐
 Type : 3 Way universal: Yes ☒ No ☐
 Rating : 24V DC 2 wire
 Class H coil : Yes ☒ No ☐
 45. Vol. booster : Yes ☐ No ☒
 46. Travel time : < 10 sec
 47. Installation : Indoor ☐ Outdoor ☒
 48. All accessories enclosure : IP55

49. Position transmitter : Yes ☐ No ☒
 Type : Pneumatic : ☐ Electronic Non contact type ☒
 Rating : 2 wire 24V DC: ☒
 Output : 4-20 ma : ☒ 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
 53.1. Local Position Indicator: Required
 54. 36 way JB with 2 No. of
 9 Pin Plug & Socket connector
 and 1 No. 5 Pin Plug & Socket connector

MISCELLANEOUS:

54. Seat leakage : FCI 70.2 class ☒ IV
 I.S.A : ☐ ☐
 55. Approx. weight (total) : *
 56. Space requirements for : *
 online servicing

57. Valve sizing as per
 ISA 75.01 : Yes ☒ No ☐
 58. Velocity Required inside Trim : < 5 m/sec
 59. Plug and Socket Connection to be provided :

VALVE SIZING DATA:

61. Medium : SH Steam ☐ Sat. Steam ☐
 Water(Saturated) ☒
 62. Flow rate in T/Hr
 63. Operating inlet pressure in Kg/cm² (a)
 64. Operating inlet temperature in °C
 65. Outlet pressure in Kg/cm² (a)
 66. Viscosity : ---
 67. Operating (required) Cv
 68. Operating noise level at 1.0 metre from the valve surface
 69. Outlet velocity

CONDITION		
1 (30% BMCR)	2 (100% BMCR)	3 (40% BMCR)
26.2	12.5	3.6
1.2	1.2	1.2
90	90	90
0.8	0.8	0.8

REFER STANDARD TABLE

*	*	*
< 85dBA	< 85dBA	< 85dBA
*	*	*

18.02.10 KONDAPA R.PRABA
 DATE PREPARED APPROVED/C&I APPROVED/MECH

DRG. NO:

4-00-306-39171

REV

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DESIGN DATA:

70. Design Pressure Kg/cm²(g) : 20
71. Design Temperature °C : 260 °C
72. Rated/Design/Selected Cv of valve : *
73. Velocity restriction : 8m/sec for liquid service
150m/sec for steam service
74. Operating lift restriction : 15 to 80 %

75. lift at various operating Conditions 1 TO 3 : *
76. Down stream limitations : *
77. Up stream limitations : *
78. Increase in signal :
Air : To Open the valve

TESTING/INSPECTION: (AS PER APPROVED QP)

79. Hydraulic test report : Yes ☒ No ☐
80. Radiography : Critical Parts : ☒ Total ☐
Not required : ☐
81. IBR test report : Req'd. : ☒
82. Type test : Capacity Evaluation by *
ISA S39.2/5 39.4 : Required.
83. Valve functional test : Yes ☒ No ☐

* Type test to be done atleast for one no on this consignment.

84. Accessories functional : Yes ☒ No ☐
Test :
85. Seat leakage test : Yes ☒ No ☐
86. Material test report : Yes ☒ No ☐
87. Customer Inspection :
In process : Yes ☐ No ☐
Final : Yes ☒ No ☐
88. Third Party inspection : Yes ☐ No ☐

DOCUMENTATION: (Required)

89. With bid. (3 sets)
- C.V. HOOK UP DIAGRAM : Yes ☒ No ☐
- J.B WIRING DIAGRAM : Yes ☒ No ☐
- Catalogues : Yes ☒ No ☐
- Dimensional drawing : Yes ☒ No ☐
- All data sheets : Yes ☒ No ☐
- Recommendation /
Limitation : Yes ☒ No ☐
- Contrary report : Yes ☒ No ☐
- Deviation list : Yes ☒ No ☐
- Confirmatory report : Yes ☒ No ☐
90. Quality plan (enclosed) : Yes ☒ No ☐

91. With equipment :
Dimensional drawing : 15 Sets
O & M : ---do---
Data Sheets : ---do---
Test certificate : 1RTF + 3 Sets
92. Valve sizing, actuator sizing,
noise level calculations required
with bid(with formulae) : Yes ☒ No ☐

SPARES:

94. Commissioning spares : *
95. Mandatory spares : AS PER TECH SPCN

96. 2/3 Years maintenance spares : *

OTHERS:

97. Bidders experience list : Required ☒ Not required ☐
98. Operational feed back of such valves supplied elsewhere : Required ☒ Not required ☐
99. Equipment guarantee : Required ☒ Not required ☐
100. System guarantee : Required ☒ Not required ☐
101. Service contract for 5 Years : - To quote seperately
102. Commissioning of the valves : Required ☒ Not required ☐

NOTES:

1. * DENOTES BIDDER TO SPECIFY

18.02.10	KONDAPA	R.PRABA	R.SESHAQIRI
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH

DRG. NO:

4-00-306-39171

REV

00



CONTROL VALVE SPECIFICATION SHEET

(IN ACCORDANCE WITH I.S.A. FORM S20.51)

PROJECT:

RIHAND STPP 2X500MW

CUST.No: 7047,7048

GENERAL:

1. Valve tag No. : ASS-25, ASS-28,
ASS-20 & ASS-23
2. Service : PRIMARY SCAPH A & B
FLOW CONTROL VALVE & BYPASS VALVE
3. Line No./Vessel No. : ---
4. Qty. required per unit : 4 Nos.

5. Manufacturer : *
6. Model No. : *
7. Rating : ASME CI 300
8. Total Qty : 4 Nos
Required

BODY:

9. Type : Thru ☒ 3 Way ☐
Z type ☐ Angle ☐
☐
10. Form : Globe ☒ Ball ☐
Butterfly ☐ ☐
11. Size : *
12. Port Size : *
13. Connecting pipe size : Inlet : OD 168.3x7.11
Outlet : OD 168.3x7.11
14. Body rating : ASME CI. 300

16. Bonnet type : Standard ☒ Finned ☐
Extended ☐ Pr. seal ☐
☐
17. Material : Body : ASTM A 217 Gr WCB
Packing: GRAFOIL
Bolting : *
18. Flow direction : HORIZONTAL
19. Suitable matching pieces to match with pipe size specified shall be offered.

15. Type of end connections : Screwed ☐ NPI ☐ Flanged ☐ ANSI ☐

- BW ☒ BSPT ☐ DIN ☐
SW ☐ BS ☐

Edge Preparation as per BPS. STY.'D'; d1=155.6

TRIM:

20. No. of ports : *
21. Type : Balanced ☒ Unbalanced ☐
22. Plug characteristics: ~~L/V/EP~~ ☒ MODIFIED PARABOLIC
23. Guiding : Cage ☒ Port ☐ Top ☐
Bottom ☐

24. Stem material : SS316 STELLITED
25. Plug material : 17-4 PH SS
26. Seat material : 17-4 PH SS
27. Disc material : 17-4 PH SS
28. stem guide material : SS316 STELLITED
29. Quick change trim Yes ☒ No ☐

ACTUATOR:

30. Type : Electric ☐ Pneumatic ☒
Hydraulic ☐ DA/RA (AIR TO OPEN)
31. Size : *
32. Supply : 45 PSIG
33. Failsafe position : Stayput ☒
of valve. Full Close ☐ Full Open ☐

34. Diaphragm/Cylinder pressure at
Valve full open : *
Valve full close : *
35. Force required for process &
Force available at actuator. : *
36. Actuator sizing ΔP : *
37. If actuator electric fill in
data sheet as per annexure : NAPL
furnished and shall comply
with annexure-I specification.

MDL No: 7047-2-108-002

NTPC DOC NO. 1240-101-PC-PVI-Y-043
DRG. NO:

00	18.02.10	FRESH ISSUE	KONDAPA	KONDAPA	R.SESHAGIRI
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

4-00-306-39172

REV
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POSITIONER:

38. Type : Pneumatic ☐ Electronic ☐
DA/RA Electro Pneumatic (SMART) ☒
SMART MAKE : SIEMENS
MODEL NO: 6DR5211-0EN00-0AA0+6DR4004-8J

39. If Electronic : Type :
Model : Solid plate deversing contactors
Main contactor : Solid state thyristor : ☐
Relay Switching : ☐
Also refer annexure - II
position indicator reqd. for Valve & VCB

40. If Pneumatic : Type : SMART
Model : *
Split range : Yes ☐ No ☒
Controller Signal : 4-20 mA
Air supply : 5 Kg/cm²
Input/Output Pr. guage
Required : Yes ☒ No ☐
By pass provision : Yes ☐ No ☒
Action : Direct ☐ Reverse ☐ Both ☒
Cam : =% ☐ Linear ☐ Both ☐

ACCESSORIES:

41. Handwheel : Yes ☒ Side ☒ Top ☐
42. Air filter : Yes ☒ No ☐
Filter Size : 5 Micron ☐ 25 Micron ☒
43. Limit Switches : Yes ☒ No ☐
Qty. : 1 at full open &
: 1 at full close
Rating : 240v. 5Amp. ac
No of contacts per switch : 2NO + 2NC
44. Solenoid valve to effect
Stayput : Yes ☒ No ☐
Type : 3 Way universal: Yes ☒ No ☐
Rating : 24V DC 2 wire
Class H coil : Yes ☒ No ☐
45. Vol. booster : Yes ☐ No ☒
46. Travel time : < 10 sec
47. Installation : Indoor ☐ Outdoor ☒
48. All accessories enclosure : IP55

49. Position transmitter : Yes ☐ No ☒
Type : Pneumatic : ☐ Electronic Non contact type ☒
Rating : 2 wire 24V DC: ☒
Output : 4-20 ma : ☒ 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
53.1. Local Position Indicator: Required
54. 36 way J.B. with 2 no. of 9 pin plug & socket connector and 2 no. 5 pin plug & socket connector

MISCELLANEOUS:

54. Seat leakage : FCI 70.2 class ☒ IV
I.S.A : ☐ ☐
55. Approx. weight (total) : *
56. Space requirements for : *
online servicing

57. Valve sizing as per
ISA 75.01 : Yes ☒ No ☐
58. Velocity Required inside Trim : < 5 m/sec
59. Plug and Socket Connection to be provied :

VALVE SIZING DATA:

61. Medium : SH Steam ☐ Sat. Steam ☒
Water(Saturated) ☐
62. Flow rate in T/Hr
63. Operating inlet pressure in Kg/cm² (a)
64. Operating inlet temperature in °C
65. Outlet pressure in Kg/cm² (a)
66. Viscosity : ---
67. Operating (required) Cv
68. Operating noise level at 1.0 metre from valve surface
69. Outlet velocity

CONDITION		
1 (30% BMCR)	2 (100% BMCR)	3 (40% BMCR)
11.1	5.3	1.5
12.5	12.5	12.5
240	240	240
12	12	12

REFER STANDARD TABLE

*	*	*
< 85dBA	< 85dBA	< 85dBA
*	*	*

18.02.10
DATE
KONDAPA
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KONDAPA
APPROVED/C&I
R. SESHAGIRI
APPROVED/MECH

DRG. NO:
4-00-306-39172
REV
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DESIGN DATA:

70. Design Pressure Kg/cm²(g) : 20
71. Design Temperature °C : 260 °C
72. Rated/Design/Selected Cv of valve : *
73. Velocity restriction : 8m/sec for liquid service
150m/sec for steam service
74. Operating lift restriction : 15 to 80 % .

75. lift at various operating Conditions 1 TO 3 : *
76. Down stream limitations : *
77. Up stream limitations : *
78. Increase in signal :
Air : To Open the valve

TESTING/INSPECTION:(AS PER APPROVED QP)

79. Hydraulic test report : Yes ☒ No ☐
80. Radiography : Critical Parts : ☒ Total ☐
Not required : ☐
81. IBR test report : Req'd. : ☒
82. Type test : Capacity Evaluation by *
ISA S39.2/5 39.4 : Required.
83. Valve functional test : Yes ☒ No ☐

* Type test to be done atleast for one no on this consignment.

84. Accessories functional : Yes ☒ No ☐
Test :
85. Seat leakage test : Yes ☒ No ☐
86. Material test report : Yes ☒ No ☐
87. Customer Inspection :
In process : Yes ☐ No ☐
Final : Yes ☒ No ☐
88. Third Party inspection : Yes ☐ No ☐

DOCUMENTATION: (Required)

89. With bid. (3 sets)
- C.V. HOOK UP DIAGRAM : Yes ☒ No ☐
- J.B WIRING DIAGRAM : Yes ☒ No ☐
- Catalogues : Yes ☒ No ☐
- Dimensional drawing : Yes ☒ No ☐
- All data sheets : Yes ☒ No ☐
- Recommendation /
Limitation : Yes ☒ No ☐
- Contrary report : Yes ☒ No ☐
- Deviation list : Yes ☒ No ☐
- Confirmatory report : Yes ☒ No ☐
90. Quality plan (enclosed) : Yes ☒ No ☐

91. With equipment :
Dimensional drawing : 15 Sets
O & M : ---do---
Data Sheets : ---do---
Test certificate : 1RTF + 3 Sets
92. Valve sizing, actuator sizing,
noise level calculations required
with bid(with formulae) : Yes ☒ No ☐

SPARES:

94. Commissioning spares : *
95. Mandatory spares : AS PER TECH SPON

96. 2/3 Years maintenance spares : *

OTHERS:

97. Bidders experience list : Required ☒ Not required ☐
98. Operational feed back of such valves supplied elsewhere : Required ☒ Not required ☐
99. Equipment guarantee : Required ☒ Not required ☐
100. System guarantee : Required ☒ Not required ☐
101. Service contract for 5 Years : - To quote seperately
102. Commissioning of the valves : Required ☒ Not required ☐

NOTES:

1. * DENOTES BIDDER TO SPECIFY

18.02.10	KONDAPA	KONDAPA	R.SESHAGIRI	DRG. NO:	4-00-306-39172	REV
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH			00



CONTROL VALVE SPECIFICATION SHEET

(IN ACCORDANCE WITH I.S.A. FORM S20.51)

PROJECT:

RIHAND STPP 2X500MW

CUST.No: 7047,7048

GENERAL:

1. Valve tag No. : ASS-7, ASS-10,
ASS-2 & ASS-5
2. Service : SECONDARY SCAPH A & B
FLOW CONTROL VALVE & BYPASS VALVE
3. Line No./Vessel No. : --
4. Qty. required per unit : 4 Nos.

5. Manufacturer : *
6. Model No. : *
7. Rating : ASME CI 300
8. Total Qty : 4 Nos
Required

BODY:

9. Type : Thru ☒ 3 Way ☐
Z type ☐ Angle ☐
☐
10. Form : Globe ☒ Ball ☐
Butterfly ☐ ☐
11. Size : *
12. Port Size : *
13. Connecting pipe size : Inlet : OD 168.3x7.11
Outlet : OD 168.3x7.11
14. Body rating : ASME CI. 300

16. Bonnet type : Standard ☒ Finned ☐
Extended ☐ Pr. seal ☐
☐
17. Material : Body : ASTM A 217 Gr WCB
Packing: GRAFOIL
Bolting : *
18. Flow direction : HORIZONTAL
19. Suitable matching pieces to match with pipe size specified shall be offered.

15. Type of end connections : Screwed ☐
NPI ☐
Flanged ☐
ANSI ☐

- BW ☒ SW ☐
BSPT ☐ BS ☐
☐ ☐
DIN ☐

Edge Preparation as per BPS. STY.'D'; d1=155.6

TRIM:

20. No. of ports : *
21. Type : Balanced ☒ Unbalanced ☐
22. Plug characteristics: ~~LV/EP~~ ☒ MODIFIED PARABOLIC
23. Guiding : Cage ☒ Port ☐ Top ☐
Bottom ☐

24. Stem material : SS316 STELLITED
25. Plug material : 17-4 PH SS
26. Seat material : 17-4 PH SS
27. Disc material : 17-4 PH SS
28. stem guide material : SS316 STELLITED
29. Quick change trim Yes ☒ No ☐

ACTUATOR:

30. Type : Electric ☐ Pneumatic ☒
Hydraulic ☐ DA/RA (AIR TO OPEN)
31. Size : *
32. Supply : 45 PSIG
33. Failsafe position : Stayput ☒
of valve. Full Close ☐ Full Open ☐

34. Diaphragm/Cylinder pressure at
Valve full open : *
Valve full close :
35. Force required for process &
Force available at actuator. : *
36. Actuator sizing ΔP : *
37. If actuator electric fill in
data sheet as per annexure : NAPL
furnished and shall comply
with annexure-I specification.

MDL No: 7047-2-108-003

NTPC DOC NO. 1240-101-PC-PVI-Y-044
DRG. NO:

00	18.02.10	FRESH ISSUE	KONDAPA	R.PRABHA	R.SESHAGIRI
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

4-00-306-39173

REV

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POSITIONER:

38. Type : Pneumatic ☐ Electronic ☐
 DA/RA Electro Pneumatic (SMART) ☒
 SMART MAKE : SIEMENS
 MODEL NO: 6DR5211-0EN00-0AA0+6DR4004-8J
39. If Electronic : Type :
 Model : Solid plate deversing contactors
 Main contactor : Solid state thyristor : ☐
 Relay Switching : ☐
 Also refer annexure - II
 position indicator reqd. for Valve & VCB

40. If Pneumatic : Type : SMART

Model : *

- Split range : Yes ☐ No ☒
 Controller Signal : 4-20 mA
 Air supply : 5 Kg/cm²
 Input/Output Pr. guage
 Required : Yes ☒ No ☐
 By pass provision : Yes ☐ No ☒
 Action : Direct ☐ Reverse ☐ Both ☒
 Cam : =% ☐ Linear ☐ Both ☐

ACCESSORIES:

41. Handwheel : Yes ☒ Side ☒ Top ☐
 42. Air filter : Yes ☒ No ☐
 Filter Size : 5 Micron ☐ 25 Micron ☒
 43. Limit Switches : Yes ☒ No ☐
 Qty. : 1 at full open &
 : 1 at full close
 Rating : 240v. 5Amp. ac
 No of contacts per switch : 2NO + 2NC
 44. Solenoid valve to effect
 Stayput : Yes ☒ No ☐
 Type : 3 Way universal: Yes ☒ No ☐
 Rating : 24V DC 2 wire
 Class H coil : Yes ☒ No ☐
 45. Vol. booster : Yes ☐ No ☒
 46. Travel time : < 10 sec
 47. Installation : Indoor ☐ Outdoor ☒
 48. All accessories enclosure : IP55

49. Position transmitter : Yes ☐ No ☒
 Type : Pneumatic : ☐ Electronic Non contact type ☒
 Rating : 2 wire 24V DC: ☒
 Output : 4-20 ma : ☒ 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
 53.1. Local Position Indicator: Required
 54. 36 way JB with 2 Nos of 9 Pin Plug & socket connector and 1 No. 5 Pin plug & socket connector.

MISCELLANEOUS:

54. Seat leakage : FCI 70.2 class ☒ IV
 I.S.A : ☐ ☐
 55. Approx. weight (total) : *
 56. Space requirements for : *
 online servicing

57. Valve sizing as per
 ISA 75.01 : Yes ☒ No ☐
 58. Velocity Required inside Trim : < 5 m/sec
 59. Plug and Socket Connection to be provided :

VALVE SIZING DATA:

61. Medium : SH Steam ☐ Sat. Steam ☒
 Water(Saturated) ☐
 62. Flow rate in T/Hr
 63. Operating inlet pressure in Kg/cm² (a)
 64. Operating inlet temperature in °C
 65. Outlet pressure in Kg/cm² (a)
 66. Viscosity : ---
 67. Operating (required) Cv
 68. Operating noise level at 1.0 metre from valve surface
 69. Outlet velocity

CONDITION			
1 (100% BMCR)	2 (30% BMCR)	3 (30% BMCR) (6" AMB)	4 (40% BMCR)
7.2	12.9	16.3	2.0
12.5	12.5	12.5	12.5
240	240	240	240
11.5	11.5	11.5	11.5

REFER STANDARD TABLE

*	*	*	*
< 85dBA	< 85dBA	< 85dBA	< 85dBA
*	*	*	*

18.02.10 KONDAPA R.PRABHA R. SESHAGIRI
 DATE PREPARED APPROVED/C&I APPROVED/MECH

DRG. NO:

4-00-306-39173

REV

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DESIGN DATA:

70. Design Pressure Kg/cm²(g) : 20
 71. Design Temperature °C : 260 °C
 72. Rated/Design/Selected Cv of valve : *
 73. Velocity restriction : 8m/sec for liquid service
 150m/sec for steam service
 74. Operating lift restriction : 15 to 80 % .

75. lift at various operating Conditions 1 TO 4 : *
 76. Down stream limitations : *
 77. Up stream limitations : *
 78. Increase in signal :
 Air : To Open the valve

TESTING/INSPECTION: (AS PER APPROVED QP)

79. Hydraulic test report : Yes ☒ No ☐
 80. Radiography : Critical Parts : ☒ Total ☐
 Not required : ☐
 81. IBR test report : Req'd. : ☒
 82. Type test : Capacity Evaluation by *
 ISA S39.2/5 39.4 : Required.
 83. Valve functional test : Yes ☒ No ☐

* Type test to be done atleast for one no on this consignment.

84. Accessories functional : Yes ☒ No ☐
 Test :
 85. Seat leakage test : Yes ☒ No ☐
 86. Material test report : Yes ☒ No ☐
 87. Customer Inspection :
 In process : Yes ☐ No ☐
 Final : Yes ☒ No ☐
 88. Third Party inspection : Yes ☐ No ☐

DOCUMENTATION: (Required)

89. With bid. (3 sets)
 C.V. HOOK UP DIAGRAM : Yes ☒ No ☐
 J.B WIRING DIAGRAM : Yes ☒ No ☐
 Catalogues : Yes ☒ No ☐
 Dimensional drawing : Yes ☒ No ☐
 All data sheets : Yes ☒ No ☐
 Recommendation /
 Limitation : Yes ☒ No ☐
 Contrary report : Yes ☒ No ☐
 Deviation list : Yes ☒ No ☐
 Confirmatory report : Yes ☒ No ☐
 90. Quality plan (enclosed) : Yes ☒ No ☐

91. With equipment :
 Dimensional drawing : 15 Sets
 O & M : ---do---
 Data Sheets : ---do---
 Test certificate : 1RTF + 3 Sets
 92. Valve sizing, actuator sizing,
 noise level calculations required
 with bid(with formulae) : Yes ☒ No ☐

SPARES:

94. Commissioning spares : *
 95. Mandatory spares : AS PER TECH SPCN

96. 2/3 Years maintenance spares : *

OTHERS:

97. Bidders experience list : Required ☒ Not required ☐
 98. Operational feed back of such valves supplied elsewhere : Required ☒ Not required ☐
 99. Equipment guarantee : Required ☒ Not required ☐
 100. System guarantee : Required ☒ Not required ☐
 101. Service contract for 5 Years : - To quote seperately
 102. Commissioning of the valves : Required ☒ Not required ☐

NOTES:

1. * DENOTES BIDDER TO SPECIFY

18.02.10	KONDAPA	R.PRABHA	R.SESHACRI	DRG. NO:	4-00-306-39173	REV
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH			00