

CI 12/04



CONTROL VALVE SPECIFICATION SHEET

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

PROJECT: NABINAGAR TPP(4X250MW) CUST NO: 1200,1201,1202&1203

CUSTOMER: BHARTIYA RAIL BIJLEE COMPANY LTD

(A Joint venture company between NTPC Ltd and Indian Railways)

GENERAL:

LBC75
AA101

LBC75
AA102

- 1. Valve tag No. : ASSC-60 & ASSC-63
- 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 for 4 Units : 8 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 73x5.16
Outlet : OD 73x5.16
- 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=62.7

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
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.

00	27.02.12	FRESH ISSUE	AMBAJI RAO.SR PRABHA	CV NATHAN
REV	DATE	ALTERATION	PREPARED	APPD/C&I APPD/Mech

DRG. NO: 4-00-306-39899 REV 00

POSITIONER:

38. Type : Pneumatic Electronic
 DA/RA Electro Pneumatic (SMART)

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
 53.2. Junction Box : Required
 (36 way Junction Box with 2nos 9 pin plug & socket connector & 1no. 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

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
 69. Outlet velocity surface

CONDITION		
1	2	3
14.6	11.4	2.4
1.2	1.2	1.2
80	80	80
0.8	0.8	0.8

REFER STANDARD TABLE

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

27.02.12	AMBAJI RAO.S	R.PRABHA	C V NATHAN
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH

DRG. NO: 4-00-306-39899 REV 00

DESIGN DATA:

- 70. Design Pressure Kg/cm²(g) : 7 Kg/cm²(g)
- 71. Design Temperature °C : 250 °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

- 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

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

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

27.02.12	AMBAJI RAO.S	R.PRABHA	C V NATHAN	DRG. NO:	REV
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH	4-00-306-39899	00

CI 12/01



CONTROL VALVE SPECIFICATION SHEET

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

PROJECT: NABINAGAR TPP(4X250MW) CUST NO: 1200,1201,1202&1203

CUSTOMER: BHARTIYA RAIL BIJLEE COMPANY LTD

(A Joint venture company between NTPC Ltd and Indian Railways)

GENERAL:

LBG73 AA101 LBG74 AA101 LBG73 AA102 LBG74 AA102

- 1. Valve tag No.: ASSC-14, ASSC-20, ASSC-17 & ASSC-23
- 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 Required for 4 units : 16 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 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 SW
NPI BSPT BS
Flanged
ANSI DIN

Edge Preparation as per BPS. STY.'D'; d1=103.5

TRIM:

- 20. No. of ports : *
- 21. Type : Balanced Unbalanced
- 22. Plug characteristics: ~~L/W/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
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-1 specification.

00	27.02.12	FRESH ISSUE	AMBAJI RAO.SR PRABHA	CV NATHAN
REV	DATE	ALTERATION	PREPARED	APPD/C&I APPD/Mech

DRG. NO:

4-00-306-39898

REV

00

POSITIONER:

38. Type : Pneumatic Electronic
 DA/RA Electro Pneumatic (SMART)

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
 53.2. Junction Box : Required
 (36 way Junction Box with 2nos 9 pin plug & socket connector & 1no. 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

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	
11.0	9.0	3.0	
16	16	16	
210	210	210	
15	15	15	

REFER STANDARD TABLE

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

27.02.12	AMBAJI RAO.S	R.PRABHA	C V NATHAN
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH

DRG. NO: 4-00-306-39898 REV 00

CI 12/01



CONTROL VALVE SPECIFICATION SHEET

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

PROJECT: NABINAGAR TPP(4X250MW) CUST NO: 1200,1201,1202&1203

CUSTOMER: BHARTIYA RAIL BIJLEE COMPANY LTD

(A Joint venture company between NTPC Ltd and Indian Railways)

GENERAL:

LBC71 AA101 LBC72 AA101 LBC71 AA102 LBC72 AA102

- 1. Valve tag No.: ASSC-02, ASSC-08, ASSC-05 & ASSC-11
- 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 CL 300
- 8. Total Qty : 16 Nos
Required for 4 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 114.3X6.02
- 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
NPI
Flanged
ANSI

- BW SW
BSPT BS
DIN

Edge Preparation as per BPS. STY.'D'; d1=103.5

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-1 specification.

00	27.02.12	FRESH ISSUE	AMBAJI RAO.SR	PRABHA	CV NATHAN
REV	DATE	ALTERATION	PREPARED	APPD/C&I	APPD/Mech

DRG. NO:

4-00-306-39897

REV

00

POSITIONER:

38. Type : Pneumatic Electronic
 DA/RA Electro Pneumatic (SMART)

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
 53.2. Junction Box : Required
 (36 way Junction Box with 2nos 9 pin plug & socket connector & 1no. 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

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
9.0	7.0	1.5
16	16	16
210	210	210
15	15	15

REFER STANDARD TABLE

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

27.02.12	AMBAJI RAO.S	R.PRABHA	C V NATHAN
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH

DRG. NO: 4-00-306-39897 REV 00

DESIGN DATA:

70. Design Pressure Kg/cm²(g) : 16
 71. Design Temperature °C : 250 °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 : Reqd. :
 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

27.02.12.	AMBAJI RAO.S	R.PRABHA	C V NATHAN	DRG. NO:	REV
DATE	PREPARED	APPROVED/C&I	APPROVED/MECH	4-00-306-39897	00