

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

FRAMEWORK AGREEMENT FOR FGD FPS PROJECTS

R00 -05.11.2021

Un-Priced Price Bid Format

Item: CI GATE VALVE

PR No: 1900141212

Sl No	PR No	Material Code	Material Description	UOM	PR Qty (No.s)	Technical Specification	Price Weightage Factor	Bidder Confirmation (Quoted)
1	1900141212	PY9752127096	GATE VALVE CI, 80 NB PN 1.6 FF ENDS	EA	120	PY52127	0.05658	
2	1900141212	PY9752127029	GATE VALVE CI, 100 NB PN 1.6 FF ENDS	EA	790	PY52127	0.41222	
3	1900141212	PY9752127037	GATE VALVE CI, 150 NB PN 1.6 FF ENDS	EA	170	PY52127	0.21853	
4	1900141212	PY9752127126	GATE VALVE CI, 250 NB GO PN 1.6 FF	EA	40	PY52127	0.10708	
5	1900141212	PY9752127118	GATE VALVE CI, 200 NB GO PN 1.6 FF	EA	85	PY52127	0.14456	
6	1900141212	PY9752127100	GATE VALVE CI, 600 NB GO PN 1.6 FF	EA	2	PY52127	0.02349	
7	1900141212	PY9752127134	GATE VALVE CI, 300 NB GO PN 1.6 FF	EA	10	PY52127	0.03755	
Total							1.00000	

NOTES:

- 1) Vendor to Quote Lumpsum Price for the Total Package.
- 2) Line Item Rates of the individual items shall be derived by multiplying the "Price Weightage Factor" with the Lumpsum Price quoted.
- 3) Unit Rates of the Individual items thus arrived, shall be binding on the bidder, for the total period of Framework Agreement.
- 4) Observations / Objections, if any, of the Bidder, to the "Price Weightage Factor" shall be brought to the notice of BHEL, during Pre-Bid Stage.
- 5) No Observations / Objections shall be entertained after the Techno-Commercial Bid is opened.
- 6) Bidder to indicate "Quoted" in the column "Bidder's Confirmation" as a confirmation of their bid to the respective item.
- 7) The Bid Evaluation is on Overall L1 Basis. Each and Every item of the Package shall be quoted by the bidder.
- 8) Partial offers will not be considered for evaluation and the same are liable for rejection.
- 9) The details of the Projects for which Framework Agreement is proposed are given elsewhere in the NIT. The distribution of the line items across the projects is attached as **Annexure-A**.
- 10) The permissible ordering limits specified in NIT are strictly applicable on the Total Framework Value. The same are not applicable at the Individual Project level.
- 11) The Total Lump price quoted shall be INCLUSIVE of Freight, Packing & Forwarding and Testing Charges.
- 12) The Total Lump price quoted shall be EXCLUSIVE of GST, Third party inspection (TPI) & Insurance Charges.

Note No. #1

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DISTRIBUTION OF FRAMEWORK ITEMS ACROSS PROJECTS

Annexure-A to Price Bid Format

ITEM: CI GATE VALVE

PR NO 1900141212

Sl No	Material No	Material Desc	UOM	PMD No	UWT	KOTHAGUDEM	BHADRADRI	NORTH KARANPURA	BARH-1	BARH-2	MAUDA	BRBCL NABINAGAR	NPCL NABINAGAR	RAMAGUNDAM	KORBA	NSCL BILLAI	TUTICORIN	UDANGUDI	SAGARDIGHI	ENVORE	BHUSAWAL	YADADRI	PATRATU	PANKI	CONTINGENCY
1.00	P19752127096	GATE VALVE CI, 80 NB PN 1.6 FF ENDS	EA	PE.MP.600		8	13	11	3	4	5	11	11	11	11	5	8	23	21	0		7		15	
2.00	P19752127029	GATE VALVE CI, 100 NB PN 1.6 FF ENDS	EA	PE.MP.600		30	27	12	9	9	12	12	12	12	12	12	30	362	439	56				80	
3.00	P19752127037	GATE VALVE CI, 150 NB PN 1.6 FF ENDS	EA	PE.MP.600		7	7	4	4	4	5	4	4	4	4	5	7	98	56	4		7		20	
4.00	P19752127126	GATE VALVE CI, 250 NB GO PN 1.6 FF	EA	PE.MP.600														33	14					5	
5.00	P19752127118	GATE VALVE CI, 200 NB GO PN 1.6 FF	EA	PE.MP.600		4	12	9	1	3	6	9	9	9	9	6	4	13	13					10	
6.00	P19752127100	GATE VALVE CI, 600 NB GO PN 1.6 FF	EA	PE.MP.600														2							
7.00	P19752127134	GATE VALVE CI, 300 NB GO PN 1.6 FF	EA	PE.MP.600														10							

1. The quantities indicated are total quantity with additional 50 % qty variation considered

2. The above list of Quantity, project/customer is tentative only. Final details of quantity, Project/ Customer shall be informed at the time of PO

3. The Project/ Customer are subject to change based on business scenario of BHEL.

Note No. #1 Attachment: **PR DOCS - MAIN - 1900141212-FRAME WORK-CI GATE VALVE.pdf**
BULK PROCUREMENT OF GENERIC PIPING ITEMS
Pre-Qualification Criteria (Technical)

Package Name : CI GATE VALVE
PR No : 1900141212

Manufacturers of **CAST IRON GATE VALVE** qualified as per the Pre-qualification criteria laid down below, are allowed to bid. Documentary evidence shall be provided by such bidders to establish their claim. **However, offer consideration is subjected to approval from end Customer.**

The bid evaluation shall be on Overall L1 basis. The Bidder shall meet the Pre-Qualification Criteria (listed below.

Non-compliance to any of the criteria listed below will lead to disqualification of bidder for the subject item of the tender.

Qualification Criteria of the Bidder:

1. The bidder should be an established manufacturer of **Cast Iron Gate Valve** and should have successfully completed Manufacture, Supply of **Cast Iron Gate Valve**.
2. The Bidder should have successfully completed supply of **Cast Iron Gate Valve** for similar specification with a total minimum quantity of **850 No.s** (Sizes in the range of 80NB to 600 NB) through a single Purchase Order or multiple Purchase Orders in the last 5 years ending on original due date of this tender, with at least one order executed after 01.01.2019.
3. Detailed BOQ of the items supplied, satisfying the criteria laid down above, shall be provided in the format enclosed as Annexure-1, with details like Project & Customer, Description & Quantity of Items supplied, PO details etc. as a minimum for assessing pre-qualification. **PO Copies, Inspection Reports and Dispatch documents shall be enclosed for the references provided.**
4. The bidder should not have been under suspension for business or blacklisted by any of the BHEL units.

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

Annexure-1 PQC Criteria**Supply References for the Last 5 Years (dispatch date) from the Original due date of this tender**

Enquiry Item No & Description: (To be filled by Bidder)

Sl No	Project Name along with name of Customer	Description Item(s) supplied	Purchase Order No & Date (Copy to be enclosed)	Delivery Date as per Order	Value of Order	Inspection Reports / Dispatch Documents (Copy to be enclosed)	Remarks

Note No. #1 Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

Bulk Procurement of CI GATE VALVE
Price Variation Formula – Cast Iron Gate Valve
PVC-CI-GATE VLV

$$PO = PA \times \left(\left[0.60 \times \frac{MO}{MA} \right] + \left[0.15 \times \frac{FO}{FA} \right] + \left[0.10 \times \frac{LO}{LA} \right] + 0.15 \right)$$

PO	Purchase Order Value, adjusted in accordance with above Price Variation Formula
PA	Purchase Order Value, as per Original Framework Agreement Price

Escalation for Raw Material:

MO	JPC Retail Market Price of “PIG IRON”, as on the date of respective Project PO Placement, <i>calculated as an Average of the Prices for Kolkata, Delhi, Mumbai, Chennai regions.</i>
MA	JPC Retail Market Price for “PIG IRON”, as on the date of Part-1 bid opening of Framework Agreement Tender, <i>calculated as an Average of the Prices for Kolkata, Delhi, Mumbai, Chennai regions.</i>
As published under the Item “ PIG IRON ” by Joint Plant Committee, Ministry of Steel, Govt of India, in their subscription based bimonthly publication “JPC MARKET PRICE RETAIL”.	

Escalation for Fuel & Power:

FO	Wholesale Price Index for “Fuel & Power”, as on the date of respective Project PO Placement
FA	Wholesale Price Index for “Fuel & Power”, as on the date of Part-1 bid opening of Framework Agreement Tender
As published under the Index “ II Fuel & Power ” by Office of the Economic Adviser, Ministry of Commerce and Industry, Govt of India, on their website www.eaindustry.nic.in	

Escalation for Labour:

LO	All-India Average Consumer Price Index Number for Industrial Workers (Base_2016=100), as on date of respective Project PO Placement
LA	All-India Average Consumer Price Index Number for Industrial Workers (Base_2016=100), as on the date of Part-1 bid opening of Framework Agreement Tender
As published by Labour Bureau, Ministry of Labour and Employment, Govt of India, on their website www.labourbureau.gov.in	

Overheads and Margin:

0.15	Constant for Overheads and Margin
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NOTE: Latest Index Values, as published by respective agencies, **Available as on the date** of Part-1 bid opening of FA Tender / date of PO, shall be considered, for all the factors.

Note No. #1	Form No:	 PE&SD	Attachment: PR DOCS - MAIN - 1900141212 FRAME WORK CI GATE VALVE.pdf BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION WEDGE GATE VALVE, CAST IRON, IS14846 PN1.6, OUTSIDE SCREW RISING SPINDLE	PY 52 127 Rev. No. 04 Page 1 of 5
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1.0 GENERAL

1.1 SCOPE

This standard specifies the requirements of **Cast Iron Outside Screw Rising Spindle Type Wedge Gate Sluice Valves of Rating PN1.6 as per IS-14846.**

1.2 The Gate Valves supplied according to this specification shall conform to the requirements of latest version of the Standard IS-14846 and comply with the additional requirements indicated in this specification.

1.3 APPLICATION

The valves procured according to this standard are intended to be used for Fire Water Application only.

2.0 DESIGNATION:

A hand operated Gate valve of nominal pipe bore 150 NB, conforming to IS 14846 standard, cast iron material, with pressure rating of PN 1.6 and with flat face (FF) flanged end connections conforming to 150 class rating of ANSI B16.5 shall be designated as:




GATE VLV CI 150NB PN1.6 HO 150#

A hand operated Gate valve of nominal pipe bore 150 NB, conforming to IS 14846 standard, cast iron material, with pressure rating of PN 1.6 and with flat face (FF) flanged end connections conforming to PN16 rating of IS 1536, IS 1538, IS 9523 & IS 8329 shall be designated as

GATE VLV CI 150NB PN1.6 HO PN16

A hand operated Gate valve of nominal pipe bore 150 NB, conforming to IS 14846 standard, cast iron material, with pressure rating of PN 1.6 and with flat face (FF) flanged end connections conforming to 150 class rating of ANSI B16.5 along with LIMIT SWITCH shall be designated as:

GATE VLV CI 150NB PN1.6 HO 150# with LS

Refer Doc	LAYOUTS & PIPING ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED  CH MANOJ	CHECKED  SRIKANTH G	APPROVED  S B RAO	DATE 15.09.15
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Note No. #1

Attachment: PR DOCS - MAIN - 1900141212 FRAME WORK CI

BHARAT HEAVY ELECTRICALS LIMITED

GATE VALVE.pdf



PE&SD

PROJECT ENGINEERING & SYSTEMS DIVISION

TECHNICAL SPECIFICATION

WEDGE GATE VALVE, CAST IRON,
IS14846 PN1.6, OUTSIDE SCREW RISING SPINDLE

PY 52 127

Rev. No. 04

Page 2 of 5

Form No:


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3.0 GENERAL TECHNICAL REQUIREMENTS:

CL	REQUIREMENTS	COMPLIANCE
3.1	Size	As indicated in material description
3.2	Nominal Pressure Rating (PN)	PN 1.6 as per IS 14846
3.3	Material of construction	Shall be as per Preferred material as per table 1 of IS 14846 with below deviations:
i)	Body, bonnet, dome, stool cover, wedge/disc, stuffing box, gland, Yoke, thrust plate and cap	Grey cast iron - IS-210 Gr FG 260
ii)	Hand wheel	Grey cast iron - IS-210 Gr FG 260
iii)	Stem	Stainless steel to AISI-410 13% Cr.St.
iv)	Gear housing	Grey cast iron - IS-210 Gr FG 260
3.4	Construction	As per IS-14846 & Outside Screw Rising Spindle type
3.5	Mode of Operation Hand Operated (HO) Gear Operated (GO) Motor Operated (MO)	As indicated in material description
3.6	End Connections: a) Flanged Connection b) Flange Facing	As indicated in material description Either one of 150# - As per ASME B16.5 PN16 - As per IS-1536, IS-1538, IS-8329 or IS-9523 The Flange Facing shall be Flat Face (FF)
3.7	Dimensions & Tolerances	As per Preferred Dimensions-PD (short body) indicated in table 2 of IS 14846
3.8	Testing	As per IS-14846 & approved QAP
3.9	Surface Preparation, Coating, Painting (Unless otherwise indicated in Project specific Painting Schedule attached along with the Enquiry)	Surface Preparation as per IS-14846 Primer - Zinc Rich Epoxy Finish - Aliphatic Polyurethane Shade - RAL3000 (P.O.RED) Total DFT - 125 Microns (Minimum)
3.10	Marking, Packing & Storage	As per IS-14846
3.11	Limit Switch: Qty - 2 No's (Each for open & close end position) Protection class: IP67 Contact: 1 No DPDT or 2 Nos SPDT minimum	Shall be provided if required as per material description Refer Project specific requirements if any supplied along with enquiry

Note: Asbestos material shall not be used


Note No. #1	Form No:	 PE&SD	Attachment: PR DOCS - MAIN - 1900141212 FRAME WORK CI GATE VALVE.pdf BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION WEDGE GATE VALVE, CAST IRON, IS14846 PN1.6, OUTSIDE SCREW RISING SPINDLE	PY 52 127 Rev. No. 04 Page 3 of 5
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4.0 ORDERING INFORMATION AS PER ANNEXURE-D OF IS-14846:

4.1	Nominal pressure of valve required	PN 1.6
4.2	Size of valve required	As indicated in material description
4.3	Whether Hand wheel or Cap is required	Hand wheel
4.4	Whether Hand wheels are required with special finish	No
4.5	Whether water is specially corrosive	For Fire Water Application
4.6	Whether valves are for use in pipeline or in unsupported or in terminal positions	In Pipe line duly supported
4.7	Tests required	Both Open and Closed ends
4.8	Whether additional tests other than those are required	No
4.9	Whether contrary to the specification, counter clockwise rotation for closing is required	No
4.10	Nature of operation — Vertical, horizontal or inclined	Shall be suitable for all types of Installation - Vertical / Horizontal
4.11	Flanges / Flange dimensions specific, if any	As indicated in material description Refer point 3.6 indicated above
4.12	Whether tail pieces or adaptors are required to suit special types or for proprietary or other joints	No
4.13	Type of power operation required, if any	As indicated in material description
4.14	Type of gear required (construction as per IS 14846)	a) Gear operator required for sizes 250 NB & Above (default) b) For sizes less than 250 NB gear operator to be provided as per material description
4.15	Thrust bearings, if required on stem collar	Yes
4.16	By pass arrangement	Required for 250 NB & ABOVE as per IS 14846

Note No. #1	Form No:	 PE&SD	Attachment: PR DOCS - MAIN - 1900141212-FRAME WORK-CI GATE VALVE.pdf BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION WEDGE GATE VALVE, CAST IRON, IS14846 PN1.6, OUTSIDE SCREW RISING SPINDLE	PY 52 127 Rev. No. 04 Page 4 of 5
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5.0 ACCESSORIES OR OPTIONAL FEATURES FOR SLUICE VALVES (AS PER ANNEXURE-A OF IS-14846) AND OTHER SPECIAL REQUIREMENTS:

- 5.1 Locking arrangement for Hand wheel: **To be provided**
- 5.2 Valve gate position indicator: **To be provided**
- 5.3 Anti-friction devices / Thrust bearing for stem collars: **To be provided**
- 5.4 By-pass arrangement valve: **To be provided for 250 NB & above**
- 5.5 Drain plug: **To be provided**
- 5.6 Gear operation: **To be provided for 250 NB & above (default)**
(To be provided for sizes below 250 NB if specified in the material description)
- 5.7 Gate valve shall be provided with back seating bush to facilitate gland renewal during full open condition of valve
- 5.8 Gate valve shall be **Outside Screw Rising Spindle type**.
- 5.9 **Limit Switch with IP 67 protection and 1 No DPDT or 2 No SPDT contact :**

Refer Cl 3.11 of this specification. 2 No's Limit switches (Each for open & close end position), shall be provided if required as per material description.

Project specific requirements if any shall be provided along with Enquiry and during drawing approval stage

6.0 DOCUMENTATION:

6.1 Along with the offer:

One copy of each of the following documents shall be submitted along with the offer:

- i) G.A. drawings/ leaflets/ catalogues for the item with binding dimensions, material specification details, weight etc.
- ii) Signed and stamped copy of this specification accepting the scope of supply as indicated in the specification.

6.2 After PO Placement:

Four copies each of the following documents shall be submitted for approval.


G.A. Drawings for the offered item with binding dimensions, material specification details, tests to be conducted, weight etc.

Schedule for document submissions:

S.no	Description	Schedule
1	Submission of GA drawing by vendor	7 days from the date of P.O.
2	Approval GA drawing by BHEL	14 days from drawing submission *

* The GA drawing submitted by vendor shall be strictly in compliance to all applicable standards and specification. The approval of GA drawing in no way absolves the supplier from meeting this specification requirement











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Note No. #1	Form No:	 PE&SD	Attachment: PR DOCS - MAIN - 1900141212 FRAME WORK CI GATE VALVE.pdf BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52 127	
			TECHNICAL SPECIFICATION		Rev. No. 04
			WEDGE GATE VALVE, CAST IRON, IS14846 PN1.6, OUTSIDE SCREW RISING SPINDLE		Page 5 of 5

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RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	15.09.2015	FIRST ISSUE	 SRIKANTH G	 S B RAO
01	21.10.2017	GENERALLY REVISED	 G KALYAN	 SRIKANTH G
02	20.12.2017	REMOVED TRIM/DISC FROM 3.3 (i)	 G KALYAN	 SRIKANTH G
03	01.11.2020	ADDED LIMIT SWITCH REQUIREMENTS Revised CI 2.0,3.11 & 5.9	 G KALYAN	 SRIKANTH G
04	27.11.2020	UPDATED QUANTITY OF LIMIT SWITCH Revised CI 3.11 & 5.9	 G KALYAN	 SRIKANTH G

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

VENDOR'S NAME & ADDRESS:		TYPICAL MANUFACTURING QUALITY PLAN						QAP. NO						
		CUSTOMER: BHEL, HYDERABAD -32.			BHEL P.O.NO.:			REV NO:		DATE:				
		PROJECT:			P.O. DATE:			PAGE 1 OF 4						
		PRODUCT: CI Gate Valve			BHEL SPEC: REV:									
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY				REMARKS
										P	W	V		
1.0 RAW MATERIALS & BOUGHT OUT ITEMS														
1.1	Body, Cover Bonnet / Yoke	Chemical & Mech. properties	Major	Chem. & Mech. Analysis	One per Heat	BHEL Specification / Approved Drawing / Data sheet/IS: 778 / EN 12266 Part-1		MTC	✓	2		1&3		
1.2		Surface defects and Hardness	Major	Visual and hardness test	100 %, One per Heat			TC	✓	2	2	1&3		
1.3	Trim (Stem, Seat, body seat ring, disc seat, Back seat bushing, Wedge, Spindle, back seat as applicable)	Chemical & Mech. properties	Major	Chem. & Mech. Analysis	One per Heat			MTC	✓	2		1&3		
1.4		Hardness value	Major	Hardness Test	100%			TC	✓	2	2	1&3		
1.5	Gaskets	Chemical & Mech. properties	Major	Chem. & Mech. Analysis	One per Heat			MTC	✓	2		1&3		
1.6		Visual, Dimensions, Type, Compressibility test etc.	Major	Visual & Measurement	100%			TC	✓	2	2	1&3		
1.7	FASTENERS (Bolt, Nut, Stud, Eye Bolt etc.)	Chemical & Mechanical Properties	Major	Chem. & Mech. Analysis	One per Heat			MTC	✓	2		1&3		
1.8		Visual, Dimensions, Heat Treatment, Type, Hardness etc.	Major	Visual & Measure. Hardness Test	100%			TC	✓	2	2	1&3		
1.9	Accessories Like Gear / Hand Wheel / Actuator	Chemical & Mech. properties	Major	Chem. & Mech. Analysis	One per Heat			MTC	✓	2		1&3		
1.10		Make, Model & Operation	Major	Visual & Functional	100%			TC	✓	2	2	1&3		
1.11	Gland Packing	Chemical & Mech. properties	Major	Chem. & Mech. Analysis	One per Heat			MTC	✓	2		1&3		
LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL (OR BHEL NOMINATED INSPECTION AGENCY), 2 FOR VENDOR/SUB VENDOR & 3 END USER / CUSTOMER AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.						PREPARED BY VENDOR'S SIGNATURE & STAMP		APPROVED BY BHEL QA SIGNATURE & STAMP		APPROVED BY CUSTOMER'S SIGNATURE & STAMP				

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

VENDOR'S NAME & ADDRESS:		TYPICAL MANUFACTURING QUALITY PLAN						QAP. NO						
		CUSTOMER: BHEL, HYDERABAD -32.		BHEL P.O.NO.:		REV NO:		DATE:						
		PROJECT:		P.O. DATE:		PAGE 2 OF 4								
		PRODUCT: CI Gate Valve		BHEL SPEC: REV:										
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V				REMARKS
2.0 INPROCESS INSPECTION														
2.1	Bonnet/bonnet/wedge/ seat ring/trim	Surface finish of Machining	Major	Visual	100%	BHEL Specification / Approved Drawing / Data sheet/IS: 778 / EN 12266 Part-1	IIR	✓	2	2	1&3			
2.2		LPI For Stem, Seating Surfaces,	Major	NDE	100%		NDE Report, TC	✓	2	2	1&3			
2.3		Dimensions	Major	Measurements	100%		IIR	✓	2	2	1&3			
3.0 FINAL INSPECTION & TESTING														
3.1	Valve Assembly	Visual Inspection, Dimensional check	Critical	Visual & measurement	100%	MSS SP55/BHEL Specification / Approved Drawing / Data sheet/IS: 778 / EN 12266 Part-1	IIR	✓	2	1	3	10% witness by 1&3		
3.2		Hydro test for - a) body and bonnet b) seat c) back seat d) Air leak test	Critical	Pr. Testing	100%		TC	✓	2	1	3	10% witness by 1&3 Note :8 & 9		
3.3		Gear Operation Check	Critical	Testing	100%		TC	✓	2	1	3			
3.4		PMI Test	Critical	Testing	100%	ASTM 572 / BHEL Specification / Approved Drawing / Data sheet	IR	✓	2	1	3	Accessible SS & AS parts		
3.5	Valve Assembly	Name Plate Check / Tag No.	Critical	Visual & Doc Verification	100%	BHEL Specification / Approved Drawing / Data sheet	IR	✓	2	1	3	10% witnessed by 1&3		
3.6	SPARES FOR VALVE	BOM & TC	Major	Visual & TC review	100%		TC	✓	2	1	3			

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL (OR BHEL NOMINATED INSPECTION AGENCY), 2 FOR VENDOR/SUB VENDOR & 3 END USER / CUSTOMER AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY	APPROVED BY
	VENDOR'S SIGNATURE & STAMP	BHEL QA SIGNATURE & STAMP	CUSTOMER'S SIGNATURE & STAMP

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

VENDOR'S NAME & ADDRESS:		TYPICAL MANUFACTURING QUALITY PLAN						QAP. NO						
		CUSTOMER: BHEL, HYDERABAD -32.			BHEL P.O.NO.:			REV NO:		DATE:				
		PROJECT:			P.O. DATE:			PAGE 3 OF 4						
		PRODUCT: CI Gate Valve			BHEL SPEC: REV:									
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY				REMARKS
										P	W	V		
4.0 PRESERVATION & PACKING														
4.1	Valve Assembly	Surface Preparation (Blast Cleaning)	Major	Visual & Match Card	100%	BHEL Specification / Approved Drawing / Data sheet		Log Book	✓	2	2	1&3	SA 2.5 Copper Grit	
4.2		Painting (Shade, DFT etc.) Marking	Major	Visual & DFT Measurement	Random			IR	✓	2	1	3		
4.3		Preservation and End Protection	Major	Visual	100%			ITR	✓	2	1	3	10% witnessed by 1&3	
4.4		Packing*	Major	Visual	Random			Packing list	✓	2	1	3	*witnessing of seaworthy packing for export orders	
4.5	Quality Documentation & Certification	QAP clause no. wise with page numbers on each page	Major	Verification	100%	All relevant documents as per this QAP (✓ in column D)		Index format	✓	2		1&3	Refer Note: 3	

Notes: -

1. This QAP should be read along with specification (latest revision), approved drawings & approved data sheet.
2. Specification/drawing/data sheet shall prevail over quality plan for contradiction if any between Quality plan and drawing/specification.
3. All test certificates/reports reviewed and certified by TPI/BHEL shall be submitted (QAP clause no. wise with page numbers on each page) to BHEL as documentation package.
4. Any project/customer specific requirements, which shall be notified, have to be fulfilled by the vendor at the time of execution of order.

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL (OR BHEL NOMINATED INSPECTION AGENCY), 2 FOR VENDOR/SUB VENDOR & 3 END USER / CUSTOMER AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY	APPROVED BY
	VENDOR'S SIGNATURE & STAMP	BHEL QA SIGNATURE & STAMP	CUSTOMER'S SIGNATURE & STAMP

Note No. #1

Attachment:PR DOCS – MAIN –1900141212-FRAME WORK-CI GATE VALVE.pdf

VENDOR'S NAME & ADDRESS:		TYPICAL MANUFACTURING QUALITY PLAN						QAP. NO						
		CUSTOMER: BHEL, HYDERABAD -32.			BHEL P.O.NO.:			REV NO:		DATE:				
		PROJECT:			P.O. DATE:									
		PRODUCT: CI Gate Valve			BHEL SPEC:			REV:		PAGE 4 OF 4				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	*	AGENCY				REMARKS
									D	P	W	V		

5. Material test certificate shall include tensile, impact, hardness, bend, IGC, hot tensile, grain size, chemical analysis etc. as required by applicable material code / approved drawing /data sheet.
6. Hydro test shall be done in un-painted condition as per approved procedure/relevant code.
7. Accessories requirements as per BHEL Spec.52127 Sr. No. 5.
8. All third party lab reports shall be from NABL accredited lab.


Abbreviations: -

MTC – Material Test Certificate
 ITR – Inspection Test Report
 IIR – Internal Inspection Report
 NDE – Non Destructive Examination


TC – Test Certificate,
 IR – Inspection Report,
 DFT – Dry Film Thickness

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL (OR BHEL NOMINATED INSPECTION AGENCY), 2 FOR VENDOR/SUB VENDOR & 3 END USER / CUSTOMER AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY	APPROVED BY
	VENDOR'S SIGNATURE & STAMP	BHEL QA SIGNATURE & STAMP	CUSTOMER'S SIGNATURE & STAMP


Note No. #1 Attachment:PR DOCS MAIN 1900141212 FRAME WORK CI GATE VALVE.pdf

TD-201 Rev No. 00	Form No.  HYDERABAD	<p align="center">PRODUCT STANDARD</p> <p align="center">PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD</p>	ANNEXURE Rev No. 00 Page 1 of 3
<div style="display: flex;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding: 5px;"> COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. </div> <div style="flex-grow: 1; padding: 20px;"> <p align="center">QAP GUIDELINES & FORMAT</p> <p align="center">, (ANNEXURE)</p> <p>The QAP format and guidelines for filling up the format shall be used by vendor for preparation and submission of QAP after order placement.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. Typical /Indicative /Standard QAP(s) for equipment /package attached is reference document and to use by successful bidder in future for preparation and submission of QAP for BHEL /CUSTOMER approval. 2. No deviation to reference document is acceptable. </div> </div>			

Note No. #1 Attachment: ~~PR DOCS~~ ~~MAIN~~ ~~1900141212-FRAME WORK CI GATE VALVE.pdf~~

Form No.		PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 2 of 3
<p style="text-align: center;"><u>GUIDELINES TO VENDORS FOR PREPARATION OF QUALITY ASSURANCE PLAN</u></p> <ol style="list-style-type: none"> QAP shall be made in landscape mode on A4 size paper as per the format enclosed. Font size shall be minimum 10. Each page of QAP shall contain the following information. <ol style="list-style-type: none"> Vendor's name & address. Customer: BHEL, Hyderabad. Project. BHEL Product Standard Number/revision number as referred in P.O. BHEL Purchase Order Number & Date. Product as per P.O. description. QAP Number (unique and shall not repeat)/revision number/date. Page number and number of pages QAP shall contain four parts / stages as follows. <ol style="list-style-type: none"> Raw materials and bought out items. In process Control / Inspection. Final assembly, Inspection & Testing. Painting, preservation & packing. Under 'Component', indicate name of the component (say casing, rotor, pressure gauge, etc). Under 'Characteristics', indicate appropriately (say chemical analysis, mechanical properties, NDT (UT, DP etc.), hydrostatic test, calibration check etc.) Under 'Class', indicate minor, major or critical depending on the importance of characteristic. Under 'Type of check', indicate appropriately (say chemical, mechanical, UT, DP etc.) Under 'Quantum of check', indicate appropriately (say 100%, 10%, sample, per melt, per heat, all pieces etc.) Under 'Reference document' and 'Acceptance norms', appropriate National & International standards, BHEL standards, approved drawing references etc. should be indicated. It is not correct to mention as "Vendor's internal standards or Vendor's standard practice etc.". If vendors' internal standards are referred, same shall be in line with BHEL Spec. indicated in the P.O. These may require review & approval by our Engineering dept. Under 'Format of record', indicate appropriately supplier's test certificate, calibration certificate, lab report, inspection report etc. Please refer 'Agency' in QAP format. Under P: Perform, W: Witness, V: Verify Indicate against each characteristic 1: (BHEL CQS/Nominated inspection agency), OR 2: (Vendor / Sub vendor) 			
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"> COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company. </p>			
Ref. Doc			

Note No. #1 Attachment: ~~PR DOCS~~ ~~MAIN~~ ~~1900141212~~ ~~FRAME WORK~~ ~~CI GATE VALVE~~.pdf

Form No.		PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD	ANNEXURE
			Rev No. 00
			Page 3 of 3
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.	<p>Note: Performing agency is normally vendor or his sub vendor (Legend 2). Where witness points are indicated in specification, P.O., Drawing etc., for such operations, Under Witness (W) column use 1. Under 'Verify' column, use code 1.</p> <p>12. Under 'D' please put (Tick) against each characteristic where vendor proposes to submit test certificate/report etc. OR as required as per BHEL Specification.</p> <p>13. Vendor's signature & stamp should be available on each page of QAP.</p> <p>14. Vendor should read the BHEL Product Standard thoroughly and QAP should be made only inline and relevant to the Specification & Approved Drawings.</p> <p>15. The following operations/characteristics/check points may be included (AS APPROPRIATE)</p> <ul style="list-style-type: none"> a) Visual check b) Dimensional check c) Mechanical and Chemical properties. d) Surface preparation before painting (by chemical cleaning, sand blasting, shot blasting etc. as the case may be.) e) Painting check for shade, Dry Film Thickness (DFT), Adhesion/ peel off test etc. f) Check for correctness for all components mounted as per General Arrangement Drawing, Bill of Materials (BOM), etc. for range, rating, make, color, size, location as per GA, quantity, label description including tag nos., annunciator facia, loose components, accessories, spares etc. g) Verification of test certificate for protection class for the enclosures. h) Mechanical functioning of switches. i) Continuity of earthing and provision of earth points. j) Colour coding of wiring, size, tightness & dressing of wiring. k) Review of test certificates of assembled items, raw materials, internal test reports etc. l) Witness of functional checks, which may include mechanical run & electrical run, H.V.test, IR measurement, Electrical and Mechanical tests etc. m) PQR, WPS, Welder Qualification Record, welding records (fit up, DP) etc. n) Material identification (for punch marks of serial numbers, Heat No, Melt No, Inspector's stamp etc.) o) Hydraulic Pressure Test, Pneumatic Pressure Test, Liquid Penetration Examination and other Non-Destructive Tests. p) Tests on Galvanised items (Visual, Hammer Test, Knife Test, Thickness, Pierce Test (Copper sulphate test), Hydrogen evaluation test, Stripping test (for Mass of Zinc coating) q) All tests as per BHEL Product Standard & approved drawings including Type tests and Routine tests on individual items and on System as a whole. r) Packing and Preservation. <p>16. QAP Format enclosed.</p>		
	Ref. Doc		

Note No. #1



Attachment: PROJECT MONITORING & FRAMEWORK LONGATE VALVE.pdf
RC PURAM, HYDERABAD.
QUALITY & BUSINESS EXCELLENCE

INSPECTION / TC REVIEW FORMAT

1	Vendor's Name:		5	Applicable BHEL Spec No:	
2	Project:		6	Approved Drawing No:	
3	PO No:		7	Approved Data Sheet No:	
4	Item Description:		8	Approved QAP No:	

OFFER LIST

S.No	BBU/ PO Sr. No.	Item Description	Total Qty as per PO/BBU	Qty. already accepted	Qty offered for TC review	Cumulative Qty	Balance Qty
A							
B							
C							
D							

TC REVIEW REQUISITION

BBU / PO Sr. No.	QAP Clause No.	Format of Record	Certificate No. & Date	Page No.	REMARKS
---------------------	-------------------	---------------------	------------------------	-------------	---------

A. Item Description:

B. Item Description:

C. Item Description:

D. Item Description:

E. Item Description:

SUPPLIER / VENDOR SIGNATURE WITH SEAL

BHEL/ BHEL's TPIA SIGNATURE WITH SEAL

Dt:

Dt:

Format No: PESD/QA/10, Rev: 00