

2x500MW NEYVELI NEW TPP (NTA2-TG)

VOLUME – IIB

**TECHNICAL SPECIFICATION
FOR
GUN METAL VALVES**

SPECIFICATION NO. PE-TS-402-100-M003



**BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, INDIA**

	TITLE:	SPECIFICATION NO. PE-SS-999-100-Q001	
		VOLUME	
		SECTION	
		REV. NO.	DATE: 26/08/2011
		SHEET	1 OF 1
PREAMBLE			

1.0 The tender document contains three (3) volumes. The bidder shall meet the requirements of all the three volumes.

1.1 **Volume-I (CONDITIONS OF CONTRACT)**

This consists of four parts as below:-

- Volume-IA : This part contains instructions to bidders for making bids to BHEL.
- Volume-IB : This part contains general commercial conditions of the tender & includes provision that vendor is responsible for the quality of item supplied by their sub-vendors.
- Volume-IC : This part contains special conditions of contract.
- Volume-ID : This part contains commercial conditions for erection & commissioning site work, as applicable.

1.2 **Volume-II TECHNICAL SPECIFICATIONS**

Technical requirements are stipulated in Volume-II which comprises of :-

- Volume-IIA : General Technical Conditions
- Volume-IIB : Technical Specification including Drawings, if any.

1.2.1 **Volume-IIB**

This volume is sub-divided into following sections:-

- Section-A : This section outlines the scope of enquiry.
- Section-B : This section provides "Project Information".
- Section-C : This section indicates technical requirements specific to the contract, not covered in Section-D.
- Section-D : This section comprises of technical specifications of equipments complete with data sheet A, B and C.

Data Sheet - A Specifies data and other requirements pertaining to the Equipment.


Data Sheet - B Specifies data to be filled by the bidder (Data Sheet-B is contained in Volume-III).

Data Sheet -C Indicates data/documents to be furnished after the award of contract as per agreed schedule by the vendor (as applicable).

1.2.2 **Volume-III (TECHNICAL SCHEDULES)**


This volume contains technical schedules and Data Sheets-B, which are to be duly filled by the bidder and the same shall be furnished with the technical bid.

2.0 The requirements mentioned in Section-C / Data Sheets-A of section-D shall prevail and govern in case of conflict between the same and the corresponding requirements mentioned in the descriptive portion in Section-D

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SECTION-A

SCOPE OF ENQUIRY

	TECHNICAL SPECIFICATION GUN METAL VALVES 2x500MW NEYVELI NEW TTP (NTA2-TG)	SPECIFICATION NO. PE-TS-402-100-M003	
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SCOPE OF ENQUIRY

1. SCOPE

This enquiry covers the Design, Manufacture, Inspection & Testing at vendor's and/or his sub-vendor's works, proper packing and delivery to site of gun metal valves complete with all accessories as per the requirements mentioned in different sections of the specification for **2x500MW NEYVELI NEW TTP (NTA2-TG)**.


2. GENERAL TECHNICAL INSTRUCTIONS

- a) It is not the intent to specify herein all the details of design and manufacture. However the equipment shall conform in all respects to high standards of design, engineering and workmanship, and shall be capable of performing the required duties in a manner acceptable to Engineer/ Owner, who will interpret the meaning of drawing and specifications, and shall be entitled to reject any component or material, which in his judgement is not in full accordance herewith.
- b) The omission of specific reference to any component/ accessories necessary for the proper performance of gun metal valves shall not relieve the bidder of the responsibility of providing such facilities to complete the supply of gun metal valves at quoted prices.
- c) Design/ drawings/ data sheets etc. shall be subject to approval of BHEL as per specification, in the event of order.
- d) BHEL's / customer's representative shall be given access to the shop in which the equipment are being manufactured or tested and all test records shall be made available to him.
- e) The equipment covered under this specification shall not be despatched unless the same have been finally inspected, accepted and shipping release issued by BHEL.

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SECTION-B


PROJECT INFORMATION

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PROJECT INFORMATION


The bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information provided in this section will be for general guidance and shall not be contractually bidding on BHEL/OWNER. All relevant site data/information as may be necessary shall have to be obtained /collected by the bidder.

SITE LOCATION AND CONDITION		
1	OWNER	NEYVELI LIGNITE CORPORATION LIMITED (NLC LTD.). NEYVELI, CUDDALORE DISTRICT, TAMILNADU STATE, INDIA
2	PROJECT	2x500MW NEYVELI NEW THERMAL POWER PROJECT (NNTPP)
3	OWNER'S CONSULTANT	LAHMEYER INTERNATIONAL (INDAI) PVT. LTD. (LII), GURGAON, NCR, INDIA
4	LOCATION	200 KMS SOUTH OF CHENNAI AND 50 KMS SOUTH-WEST OF CUDDALORE
5	NEAREST RAILWAY STATION	NEYVELI
6	NAME OF RAILWAY	SOUTH EASTERN RAILWAY.
7	ROAD ACCESS/ APPROACH TO SITE	CONNECTED BY CHENNAI - THANJAVUR NH-45C ROAD STATE HIGHWAY CONNECTING CUDDALORE - VIRUDHACHALAM VIA NEYVELI. BOTH NH AND STATE HIGHWAY ROADS ARE WELL CONNECTED TO NLC TOWNSHIP ROADS. THE APPROACH ROAD IS APPROXIMATELY 15 KMS FROM CHENNAI - THANJAVUR NH-45C ROAD.
8	NEAREST AIRPORT	CHENNAI, AT A DISTANCE OF 200 KM
9	NEAREST SEA PORT	CHENNAI, AT A DISTANCE OF 200 KM

	TECHNICAL SPECIFICATION GUN METAL VALVES	SPECIFICATION NO. PE-TS-402-100-M003	
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SECTION-C

SPECIFIC TECHNICAL REQUIREMENTS

	SPECIFIC TECHNICAL REQUIREMENTS GUN METAL VALVES 2x500MW NEYVELI NEW TPP	SPECIFICATION NO. PE-TS-402-100-M003	
		SECTION C	
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1. GENERAL

- 1.1 The valves shall meet the technical requirements and conform to the standard technical specifications, Data sheet A of Section D. In addition, the requirements of this Section-C shall also be complied with. However, wherever the details given in standard technical specification of Section-D and Data sheet A are different, the requirements of Data sheet A shall prevail. Similarly in the event of contradictions between Section –C & Section –D/ Data sheet A, Section –C will prevail.
- 1.2 The technical requirements for valves shall, in general, be as per the attached standard Technical specification for Valves, and Data sheet A of Vol. II B Section D.

2. SCOPE OF SUPPLY

- 2.1 The valves complete with all accessories shall be supplied as per Data sheet A of Section D. For detail refer the same.
- 2.2 Commissioning spares, if any.
- 2.3 Mandatory spares as applicable depending upon the project requirement
- 2.4 Set of special tools and tackles if required for the maintenance, erection etc. of the equipment supplied.
- 2.5 Various drawings, datasheets, operation and maintenance manuals etc., as specified in Data Sheet-C.

3. EXCLUSIONS:


Erection & Commissioning of equipment at site is excluded from the bidder's scope.

4. QUALITY ASSURANCE

The Quality Plans enclosed with this specification specify minimum quality control requirement. During contract stage vendor shall furnish these Quality Plans duly signed & stamped for their compliance. Quality plans shall be approved by BHEL and customer (If necessary). All inspection and testing shall be carried out by BHEL and CUSTOMER (if necessary). In case inspection is by both BHEL and CUSTOMER, then the inspection can be carried out jointly or separately, which will be informed later.

5. PACKING INSTRUCTIONS:

- 5.1 Each valve shall be drained, cleaned, prepared and suitably protected in such a way so as to minimize the possibility of damage and deterioration during transit and storage.
- 5.2 The valve shall be dispatched in total assembled form.
- 5.3 Body ends shall be suitably sealed to protect them against damage during transit and storage.
- 5.4 Valve Tag Nos. shall be incorporated in all the dispatch documents.
- 5.5 Proper care shall be taken to avoid damage to the painted surface during transit.

	SPECIFIC TECHNICAL REQUIREMENTS GUN METAL VALVES 2x500MW NEYVELI NEW TPP	SPECIFICATION NO. PE-TS-402-100-M003	
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5.6 All the valves shall be packed suitably in wooden cases in order to avoid damage during transit and also during storage at site in tropical climate conditions for a period of 15-18 months.

5.7 Vendor to provide soft copy of photos/ snaps of duly packed valves. The soft copies to be provided by the vendor after final inspection of valves. Clearance for dispatch of valves will be given only after satisfactory packing condition of valves from vendor works.

6 SPARES

a) **Mandatory Spares:** NIL.

b) **Recommended Spares:** ~~List of recommended spares for 3 year reliable operation along with the unit price shall be indicated in the schedule of prices for recommended spares enclosed in Volume III. Cost of Recommended spares shall not be included in the base price.~~


c) Order for the spares may be placed simultaneously or otherwise at the option of purchaser.

7 DOCUMENTS TO BE SUBMITTED ALONG WITH OFFER

Bidder shall submit the following documents (enclosed in Vol III) duly filled, signed and stamped along with the bid:


- a) Compliance sheet
- b) Schedule of Deviations if any.
- c) Schedules of Price & Unit Price for each project.
- d) Schedule of declaration.

The above are the only documents which will be used for technical evaluation unless other documents are asked for during technical clarifications. Any other technical document enclosed with the bid shall be ignored for the purpose of technical evaluation. All other documents attached with the specification are for information of the vendor and no comments shall be marked on these.

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SECTION-D


STANDARD TECHNICAL SPECIFICATION DATA SHEET – A QUALITY PLAN DATA SHEET – C

	STANDARD TECHNICAL SPECIFICATION FOR GUN METAL VALVES	SPECIFICATION NO. PE-SS-999-100-M003	
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- 5.5 All globe and Non-return valves shall have an arrow indicating the direction of flow cast or embossed on the valve body. The direction of flow for globe valves shall be from under to over the disc.
- 5.6 Discs of globe valves which are detachable or two piece construction shall be of such design that they do not become detached from the spindle while in service. Discs of globe & lift check valves shall be guided to ensure correct alignment.
- 5.7 All Globe valves shall preferably be provided with radiused/ spherical/ angular faced disc seatings. The disc shall be secured with stem with disc nut or with such an arrangement that the disc shall be free to revolve. Disc of compressed air system globe valves shall be provided with renewable synthetic rubber seating ring of hardness 60 ° +5 /-0 Shore A.
- 5.8 All gate and globe valves shall be offered with back seating arrangement for replacement of gland packing when the valves are full opened and while working under full working pressure. Back seats shall be provided on both bonnet and stem.
- 5.9 Gate and globe valves shall be supplied with mechanical position indicator for OPEN and SHUT position.
- 5.10 All gate and globe valves shall be closed by rotating the handwheel in the clockwise direction when looking at the face of the handwheel. The face of each handwheel shall be clearly marked "Open" and "Shut" with arrows indicating the direction of rotation to which they refer.
- 5.11 Each valve hand wheel shall be fitted with a circular nameplate of an approved material indicating the valve Tag No., duty or service condition intended and the function of the valve. For valves of smaller size, a permanent steel tag may be fixed on the valve body indicating the purchaser's valve Tag Number and service. The above are in addition to rating plates and labels being provided by the manufacturer.

6 SPECIAL FEATURES OF VALVES.

- 6.1 Extension spindle/ chain operation to the valves shall be provided wherever required as specified in Data Sheet A.
- 6.2 Where required as specified in Data sheet A, valve yoke/spindles shall be lengthened so that the hand wheel is at a height of approximately one meter above the level of the floor or platform from which the valve is to be operated.
- 6.3 For valves that are to be kept locked in full "Open" or "Close" position, if specified in Data Sheet A, the locking arrangement shall be provided with a non-detachable locking arrangement.
- 6.4 Valves with limit switches (as mentioned in Data sheet- A) shall be required only for indication or for interlocking with some equipment. Valves with such provision shall be offered with required number of limit switches for open/close position of the valve. The limit switches for this application shall have one normally open and one normally closed contact. The limit switches shall be cutler hammer/Siemens/Honeywell make and limit switch housing shall be weather proof. The limit switches shall also be wired to a terminal box.

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7 MANUFACTURE OF VALVES

- 7.1 Valve castings shall be procured from foundries observing strict quality control and approved by reputed customers.
- 7.2 Particular care shall be taken to ensure that all foundry sand and loose material is properly removed from castings by fettling before the valve's manufacture is started.

8 TESTING AND INSPECTION

- 8.1 All valves shall be tested and inspected as per the approved quality plan. The minimum requirements are as indicated in attached quality plan. However, in case of order on the vendor, the QP shall be finalized by vendor with customer without any financial implications to meet customer project technical requirements.

8.2 Hydrostatic/Air Tests:

Valves shall be hydraulically tested for shell tightness & seat tightness in accordance with IS 778 and BS 5154 & BS EN 12266-1 (Part-1) (as applicable) before painting of valves.

- 8.3 Gate and Globe valves seats shall also be tested on air at a pressure of 7kg/cm².
- 8.4 No leakage shall be allowed for any size of the valve covered under this specification. Seats of check valves shall also be tested to one-fourth of the maximum cold working pressure.
- 8.5 Blue matching of seats shall be carried out and records shall be maintained for verification by the Purchaser.
- 8.6 Dimensional and functional checks shall be carried out.

9 PAINTING

Valve bodies and other items shall be thoroughly cleaned after final testing. Hand wheel of the valves shall be painted with enamel paint by spray painting. The enamel paint used shall be of reputed companies.

10 CLEANING AND PROTECTION FOR DESPATCH:

- 10.1 Valve ends shall be protected from external damage and sealed against the ingress of dirt.
- 10.2 Valve ends shall be protected by means of screwed polythene caps/rubber end protectors properly secured to valve ends to avoid any damage to threads at the ends.
- 10.3 All the valves shall be packed suitably in wooden cases in order to avoid damage during transit and also during storage at site.
- 11 Valve Tag nos. shall also be incorporated in all the dispatch documents.



**DATA SHEET- A
GUN METAL VALVES
2x500MW NEYVELI NEW TPP (NTA2-TG)**

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VOL II B

SECTION D

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1 SL NO.	2 TAG NOS.	3 TYPE OF VALVE	4 SIZE mm (NB)	5 OPERATION	6 DESIGN		7 SERVICE	8 RATING, DESIGN & TESTING CODE	9 BODY MATERIAL	11 TRIM MATERIAL	12 END CONN	13 SPECIAL FEATURES	14 MATCHING PIPE OD X THKN		15 MAIN VALVES QTY WITHOUT COMMISSIONING SPARES NOS.	16 +++COMMISSIONING SPARES			17 MANDATORY SPARES	
					PRESSURE KG/CM2(G)	TEMP (DEG °C)							MM	MM		BONNET/COVER GASKET (NOS)	GLAND PACKING (SETS)	ACTUATOR SPARES SETS		
1	SW-28, SW-35 TO 58, SW-72, SW-73, SW-80 TO 107	HV (GLV)	25	MAN	10	60	SERVICE WATER	PN 16 OF BS 5154	GM AS PER ASTM B62 / IS 318Gr LTB2	GM AS PER ASTM B62 / IS 318Gr LTB2	SCREWED AS PER IS 554, FEMALE PARALLEL	-	34.2	4.0	55	NIL	6	NIL	NIL	
															TOTAL	55		6		

- NOTES
 1. LEGENDS: MAN=MANUAL, HV=HOSE VALVE & GLV=GLOBE VALVE
 2. +++ - COMMISSIONING SPARES: GLAND PACKING SETS
 3. *** - FOR DETAILED MATERIAL OF CONSTRUCTION REFER ATTACHED DATA SHEET-A (PAGE 2 OF 2).

Ashish
 01.10.14
ASHISH KUMAR VERMA
SR.ENGR./MPL

Signature of the bidder with name, designation, date and company's seal

	DATA SHEET-A GUN METAL VALVES 2x500MW NEYVELI NEW TPP (NTA2-TG)	SPECIFICATION NO. PE-TS-402-100-M003	
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**MATERIAL OF CONSTRUCTION
(GUN METAL VALVES)**

PART NO.	PART NAME	MATERIAL	MATERIAL SPECIFICATION
1	BODY	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
2	BONNET/ COVER (PLNRV)	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
3	WEDGE / DISC (GLOBE/ PLNRV)	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
4	DISC CHECK NUT	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
5	GLAND	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
6	STEM	EXTRUDED BRASS	IS: 320 Gr. HT2
7	GLAND PACKING	GRAPHITED NON-ASBESTOS/ TEFLON PACKINGS	
8	END CAP (hose valve)	GM	Gun metal as per IS:318 Gr. LTB2/ BS EN 1002-90 Gr. CC-491K ASTM B62
9	CAP GASKET (hose valve)	CAF	IS 2712:79
10	END CHAIN (hose valve)	SS	AISI 316
11	INDICATOR	GM	Gun metal as per IS:318 Gr. LTB2/ ASTM B62
12	GLAND STUDS & NUTS	CARBON STEEL	BS 916:53 / ASTM A193 Gr.B7/ A194 Gr.2H
13	HAND WHEEL	MALLEABLE CAST IRON	ASTM A47 Gr 32510
14	WASHER (for hand wheel screw)	CARBON STEEL	GALVANIZED/ AISI 316
15	SCREW (for handwheel)	CARBON STEEL	GALVANIZED/ AISI 316
16	NAME PLATE	SS	AISI 316 FIXED TO VALVE OR FIRMLY TIED TO HAND WHEEL WITH SS WIRE

Ashish
 01.10.14
ASHISH KUMAR VERMA
SR. ENGR./MPL

	QUALITY PLAN		CUSTOMER NLC LTD.			PROJECT 2x500MW NEYVELI NEW TPP (NTA2-TG)			SPEC. NO: PE-TS-402-100-M003		
	SHEET 1 OF 4		BIDDER/VENDOR: LATER			QP NUMBER: PE-QP-402-100-M051 REV.:00 DTD. 30.09.2014			SPEC. TITLE: COPPER ALLOY GATE, GLOBE & NON RETURN VALVES		
		SYSTEM: -WATER (ACW/CW/DMCW/PW/SW/ ECW) - AIR (INSTRUMENT & SERVICE AIR)			ITEM: COPPER ALLOY GATE/ GLOBE/ HOSE VALVES SIZE 15NB TO 50NB/ CLASS PN16			SECTION VOLUME			
SL NO (1)	COMPONENT /OPERATION (2)	CHARACT- ERISTICS CHECKED (3)	CATE- GORY (4)	TYPE/METHOD OF CHECK (5)	EXTENT OF CHECK (6)	REFERENCE DOCUMENT (7)	ACCEPTANCE NORMS (8)	FORMAT OF RECORD (9)	AGENCY P W # V (10)	REMARKS (11)	

GATE/ GLOBE VALVES

1.0	MATERIALS BODY, BONNET, WEDGE/ DISC, DISC CHECK NUT, GLAND, INDICATER,	1. PHYS & CHEM. PROPERTIES	MA	PHYS & CHEM TEST	ONE/ HEAT	APPD DRG/ TECH SPEC	APPD DRG/ TECH SPEC	TEST CERT	3/2	2	1	BODY WILL CARRY HEAT MARKS FOR CO-RELATION WITH TEST CERTIFICATES
1.1		2.. SURFACE DEFECTS	MA	VISUAL	100%	FREE FROM DEFECTS	FREE FROM DEFECTS	INSPN. REPORT	2	2	1	
		3. DIMENSIONS	MA	MEASUREMENT	100%	PRODUCTION DRG	PRODUCTION DRG	--DO--	2	2	-	
1.2	'O' RING (SYNTHETIC RUBBER) FOR AIR SERVICE VALVES	1. SURFACE DEFECTS	MA	VISUAL	100%	FREE FROM DEFECTS	FREE FROM DEFECTS	--DO--	2	2	-	
		2. DIMENSIONS	MA	MEASUREMENT	100%	PRODUCTION DRG.	PRODUCTION DRG	--DO--	2	2	1	
		3. HARDNESS	MA	HARDNESS TEST	100%	APPD. DRG/ TECH SPEC.	APPD. DRG/ TECH SPEC.	--DO--	3/2	2	1	
1.3	HANDWHEEL	1.MECH PROPERTIES	MA	MECH TEST	ONE/ HEAT	APPD DRG/ TECH SPEC.	APPD DRG/ TECH SPEC	TEST CERT.	3/2	2	1	
		2.HARDNESS	MA	HARDNESS TEST	100%	APPD DRG/TECH SPEC./RELV STD.	APPD DRG/TECH SPEC./RELV STD.	INSPN. REPORT	3/2	2	1	
		3.DIMENSIONS	MA	MEASUREMENT	100%	APPD DRG	APPD DRG	--DO--	2	2	1	
		4.SURFACE DEFECTS	MA	VISUAL	100%	FREE FROM DEFECTS	FREE FROM DEFECTS	--DO--	2	2	-	
1.4	STEM	1. PHYS & CHEM. PROPERTIES	MA	PHYS & CHEM TEST	ONE/ HEAT	APPD DRG/ TECH SPEC	APPD DRG/ TECH SPEC	TEST CERT	3/2	2	1	
		2.. SURFACE DEFECTS	MA	VISUAL	100%	FREE FROM DEFECTS	FREE FROM DEFECTS	INSPN. REPORT	2	2	1	
		3. DIMENSIONS	MA	MEASUREMENT	100%	PRODUCTION DRG	PRODUCTION DRG	--DO--	2	2	-	

BHEL		PARTICULARS		BIDDER/VENDOR	
		NAME			
		SIGNATURE			
		DATE		BIDDER'S/VENDOR'S COMPANY SEAL	


Ashish
01.10.14
ASHISH KUMAR VERMA
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	QUALITY PLAN		CUSTOMER NLC LTD.		PROJECT 2x500MW NEYVELI NEW TPP (NTA2-TG)			SPEC. NO: PE-TS-402-100-M003		
	SHEET 3 OF 4		BIDDER/ VENDOR: LATER		QP NUMBER: PE-QP-402-100-M051 REV.:00 DTD. 30.09.2014			SPEC.TITLE: COPPER ALLOY GATE , GLOBE & NON RETURN VALVES		
		SYSTEM: -WATER (ACW/CW/DMCW/PW/SW/ ECW) - AIR (INSTRUMENT & SERVICE AIR)		ITEM: COPPER ALLOY GATE/ GLOBE/ HOSE VALVES SIZE 15NB TO 50NB/ CLASS PN16			SECTION VOLUME			
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GATE/ GLOBE VALVES

3.0	MACHINING										
3.1	BODY, BONNET, WEDGE/ DISC, GLAND, CHECK NUT, INDICATOR	1. DIMENSIONS	MA	MEASUREMENT	100%	PROD. DRG	PROD. DRG	LOG BOOK	2	2	-
		2. THREADED ENDS	MA	THREAD GAUGE	100%	--DO--	--DO--	--DO--	2	2	-
		3. DISC/ BODY SEAT RING	CR	BLUE MATCHING	100%	THE SURFACE SHALL BE SMOOH AND SHALL HAVE 100% CONTACT WITH SEATING SURFACES		INSPN REPORT	2	2	1
3.2	STEM	1. SURFACE DEFECTS	MA	VISUAL	100%	FREE FROM DEFECTS	LOG BOOK	LOG BOOK	2	2	1
		2.DIMENSIONS	MA	MEASUREMENT	100%	PRODUCTION DRAWING	LOG BOOK	LOG BOOK	2	2	1
3.3	BODY, BONNET STEM, DISC/ WEDGE	SURFACE DEFECTS	CR	PT	100%	ASTME165	ASME B 16.34 APPENDIX-III	INSPN REPORT	3/2	2	1
4.0	ASSEMBLY TESTING										
4.1	BODY	LEAK TIGHTNESS	CR	HYDRAIULIC	100%	APPD. DRG/ TECH.SPEC/ DESIGN STD	NO LEAKAGE	INSPN REFPOR	2	2,1	--
4.2	SEAT & BACK SEAT (IF APPLICABLE)	LEAK TIGHTNESS	CR	--DO --	100%	--DO--	-DO-	-DO-	2	2,1	-
4.3	SEAT	LEAK TIGHTNESS	CR	PNEUMATIC	100%	APPD.DRG/ DESIGN STD	NO LEAKAGE	INSPN REPORT	2	2,1	-

BHEL	PARTICULARS	BIDDER/VENDOR
	NAME	
	SIGNATURE	
	DATE	
Ashish 01.10.14 ASHISH KUMAR VERMA SR. ENGR./MPL		BIDDER'S/VENDOR'S COMPANY SEAL

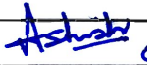
 QUALITY PLAN		CUSTOMER NLC LTD.			PROJECT 2x500MW NEYVELI NEW TPP (NTA2-TG)			SPEC. NO: PE-TS-402-100-M003		
		BIDDER/ VENDOR: LATER			QP NUMBER: PE-QP-402-100-M051 REV.:00 DTD. 30.09.2014			SPEC.TITLE: COPPER ALLOY GATE , GLOBE & NON RETURN VALVES		
SHEET 4 OF 4		SYSTEM: -WATER (ACW/CW/DMCW/PW/SW/ ECW) - AIR (INSTRUMENT & SERVICE AIR)			ITEM: COPPER ALLOY GATE/ GLOBE/ HOSE VALVES SIZE 15NB TO 50NB/ CLASS PN16			SECTION VOLUME		
SL NO (1)	COMPONENT /OPERATION (2)	CHARACT- ERISTICS CHECKED (3)	CATE- GORY (4)	TYPE/METHOD OF CHECK (5)	EXTENT OF CHECK (6)	REFERENCE DOCUMENT (7)	ACCEPTANCE NORMS (8)	FORMAT OF RECORD (9)	AGENCY P W # V (10)	REMARKS (11)


GATE/ GLOBE VALVES

5.0	COMPLETE VALVE	OVERLALL DIMENSIONS	MA	VISUAL	100%	APPROVED DRG.	APPROVED DRG.	-DO-	2	2,1	-	
6.0	ASSEMBLY INSPECTION	1. CLEANING & DEBURRING	MA	VISUAL	100%	APROVED DRG/ TECH SPEC.	APPROVED DRG./ TECH SPEC	-DO-	2	2,1	-	
		2.END TO END DIMENSIONS	CR	MEASUREMENT	100%	APPROVED DRG.	APPROVED DRG.	-DO-	2	2,1	-	
		3.OPERATION OF VALVE	CR	MANUAL	100%	TECH. SPEC/ RELV STD.	SMOOTH OPENING & CLOSING OF VALVE	-DO-	2	2,1	-	
7.0	PAINTING	SURFACE PREPARATION & UNIFORMITY	MA	VISUAL	100%	APPD DRG./ TECH. SPEC.	APPD DRG / TECH. SPEC.	INSPN REPORT	2	2	1*	- ONLY FOR HANDWHEEL * CONFIRMATION CERTIFICATE FROM VENDOR
8.0	PACKING IN WOODEN CASES AND MARKING	AS PER BHEL TECH SPECIFICATION FIXING OF NAMEPLATE FOR VALVE TAG NOS.	MA	VISUAL	100%	TECHNICAL SPEC.	TECHNICAL SPEC.	SOFT COPY OF PHOTOGR APHS	2	2	1*	PHOTOGRPHS OF VALVES AFTER PACKING TO BE VERIFIED BY BHEL BEFORE ISSUING MDCC.

NOTE:- CR- MEANS CRITICAL ACTIVITY MA- MEANS MAJOR ACTIVITY PT- PENETRATION TEST
P- PERFORMED BY W - WITNESSED BY V - VERIFIED BY
1- CUSTOMER/ BHEL 2 - VENDOR 3- VENDOR/ SUB VENDOR
PT- PENETRANT TEST

WITNESS 'W' SHALL BE 100% BY VENDOR & 10% BY BHEL/ CUSTOMER AT RANDOM FOR EACH SIZE, TYPE & RATING (OR) MIN. 02 NOS., WHICHEVER IS HIGHER.

BHEL	PARTICULARS	BIDDER/VENDOR	
	NAME		
	SIGNATURE		
 01.10.14 ASHISH KUMAR VERMA SR. ENGR/MPL	DATE		BIDDER'S/VENDOR'S COMPANY SEAL

	DATA SHEET - C GUN METAL VALVES 2x500MW NEYVELI NEW TPP (NTA2-TG)	SPECIFICATION NO. PE-TS-402-100-M003	
		VOLUME : IIB	
		SECTION: D	
		REV. NO.: 00	DATE: 30.09.2014
		SHEET 1 OF 1	

DATA SHEET - C

Drawings/documents distribution schedule to be followed by the successful bidder:

1.0 The successful bidder shall submit the following drawings/documents within two weeks after award of contact.

- 1.1 Relevant drawings/leaflets for the valves showing following information.
 - i) Complete cross sectional arrangement of the valve.
 - ii) Binding dimensions, dismantling clearances & weights.
 - iii) Bill of material incorporating all the materials of construction of various parts along with BS/ASTM/IS standards to which the materials conform to.
 - iv) Special features, if any, as called for in the specific requirement
 - v) Type of oil/Grease wherever required and its annual consumption.
- 1.2 Relevant catalogue/leaflet of the actuators
- 1.3 Quality Plan duly signed & stamped with bidder's seal.
- 2.0 Within the stipulated time period as per vendor's drawings/ documents schedule, the following shall be submitted but not later than one month before first dispatch.
 - a) Drawings of components & details as deemed necessary.
 - b) Instruction manual for erection, operation and maintenance.
 - c) Storage instructions.
- 3.0 Before dispatch of the equipment the vendor shall furnish the following.
 - a) Material Test certificates.
 - b) Shop test reports and certificates.
- 4.0 Distribution of drawings / documents for all projects:
 After award of the contract the successful bidder shall furnish drawings/ documents as per following distribution schedule.

Sl. No.	Type of Document	No of Hard copies	No. of Soft copies
1	Documents submitted for Approval	6 Nos.	5 Nos.
2	Final Distribution(Approved Documents)	13 Nos.	6 Nos.
3	O&M Manuals	16 Nos.	5 Nos.

**2x500MW NEYVELI NEW TPP
(NTA2-TG)**

VOLUME – III

TECHNICAL SCHEDULES


FOR

GUN METAL VALVES

SPECIFICATION NO. PE-TS-402-100-M003




**BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, INDIA**

	GUN METAL VALVES 2x500MW NEYVELI NEW TPP (NTA2-TG)	SPECIFICATION NO. PE-TS-402-100-M003	
		VOLUME : III	
		SECTION:	
		REV. NO.: 00	DATE: 30.09.2014
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2	SCHEDULE OF DEVIATIONS
3	SCHEDULE OF DECLARATIONS
4	SCHEDULE OF PRICES

	COMPLIANCE SHEET GUN METAL VALVES 2x500MW NEYVELI NEW TPP (NTA2-TG)	SPECIFICATION NO.:PE-TS-402-100-M003	
		VOLUME : III	
		SECTION:	
		REV. NO. 00	DATE : 30.09.2014
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The bidder shall sign and return a copy of this compliance sheet along with his offer, indicating his compliance to the points specified herein:

A) **Technical Details:** Bidder to tick whichever is applicable.

1.	Technical requirements as per Data sheet-A & Standard Technical Specification of Vol IIB Section-D	Accepted	Not Accepted
2.	Quality Plan	Accepted	Not Accepted
3.	Specific Technical requirements of Vol IIB Section-C	Accepted	Not Accepted
4.	Documentation requirement as per Data sheet-C of Vol IIB Section-D	Accepted	Not Accepted

B) Deviations to the technical specification are not acceptable. However, if there are any deviations due to unavoidable reasons then the same to be clearly specified in the schedule of deviation. In case of no deviations, schedule of deviations to be filled as NIL by bidder.

C) The offered materials should be either equivalent or superior to those specified. Also for components where material is not specified, the material used shall be suitable for intended duty.


D) QP/ test procedures shall be submitted in the event of order based on the guidelines given in the specification & QP enclosed therein. QP will be subject to BHEL/Customer approval in the event of order & customer hold points for inspection/ testing shall be marked in the QP at the contract stage. All Inspection/ testing shall be as per approved QP. The charges for 3rd party inspection (Lloyds, TUV or equivalent) for foreign bidders shall be included in the base price of the equipment by the bidder. This 3rd party inspection agency shall be approved by BHEL and will be decided in contract stage.

E) All drawings/data – sheets etc. to be submitted during contract shall be subject to BHEL/Customer review/ approval.

F) GA drawings, as submitted with offer at tender stage are for reference purpose only and shall be subject to approval during contract stage.

G) The commissioning spares (if any) are supplied on 'As Required Basis' & prices for same shall be quoted in the price bid format. If the bidder has not quoted for commissioning spares at tender stage and if the same are actually required during commissioning, then the same shall be supplied by bidder without any cost to BHEL.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
NAME	DESIGNATION	SIGNATURE	DATE	COMPANY SEAL

	COMPLIANCE SHEET GUN METAL VALVES 2x500MW NEYVELI NEW TPP (NTA2-TG)	SPECIFICATION NO.:PE-TS-402-100-M003	
		VOLUME : III	
		SECTION:	
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		SHEET 2 OF 2	

- H) All drawings/documents in soft as well as hard copy shall be submitted within 2 weeks from placement of Purchase orders in the event of order. A technical representative of bidder shall come for meeting with BHEL along with revised documents within one week of receipt of BHEL comments to resolve all issues and incorporate all comments in the soft copy for further submission to customer if required. Further, on receipt of customer comments on the documents a technical representative from bidder shall come for meeting to resolve all issues and incorporate all comments in the soft copy at BHEL and resubmit the drawings /documents for CAT I approval and shall visit customer/customer's consultant if required for across the table approval of documents.
- I) Any special tools & tackles, if required, shall be in bidder's scope.
- J) Prices for recommended spares (if any) for three year operation shall be furnished separately and not to be included in the base price.
- K) The offered model design should be of bidder's proven model and they should have designed, manufactured, supplied and tested the equipment of similar type and rating in at least Two (2) projects and be in satisfactory operation for last two (2) years.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
NAME	DESIGNATION	SIGNATURE	DATE	
				COMPANY SEAL



TITLE
*** SCHEDULE OF DEVIATIONS**
() From Technical Specifications (Volume –II B)

SPECIFICATION NO
PE-TS-402-100-M003

VOL III

SHEET..... OF.....

We the undersigned hereby certify that the above mentioned are the only deviations.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				COMPANY SEAL
NAME	DESIGNATION	SIGNATURE	DATE	

