



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 01

Ref: PSER:SCT:SRG-P1631:TCN-01

Date: 20-12-2014

Sub	Tender change notice (TCN) 01	
Job	Erection, testing and commissioning of River/Canal water piping, Plant water piping/ ACW piping & DM water piping systems and various balance piping systems, Equipments and piping of 'Fire Protection system' package for RRVUNL, 2x660 MW, Stage-V, Unit # 7 & 8 Suratgarh Super Critical TPS, Rajasthan.	
Ref	1.0	Tender no PSER:SCT:SRG-P1631:14
	2.0	BHEL's NIT, vide reference no PSER:SCT:SRG-P1631:4103, dated 04-12-2014.
	3.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Extension of due date of offer submission from **26-12-2014 to 05-01-2015 (15:00 Hrs)**.
- 2.0 Clarification to bidder's query as per attached [Annexure-A](#).
- 3.0 Field Quality Plan for LP Piping (for tendering purpose only) as per attached [Annexure-B](#).
- 4.0 Revised BOQ cum price schedule format [VOL-III- PRICE SCHEDULE, REV-01](#) superseding VOL-III PRICE SCHEDULE, REV-00 issued earlier along with NIT.

Bidders are requested to submit their offer as per revised VOL-III- PRICE SCHEDULE (Rev-01) only. Offer from bidders in superseded price schedule (Vol-III, REV-00) shall not be considered. Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per REVISED price schedule format (VOL-III- PRICE SCHEDULE, REV-01).

- 5.0 Revised 'No deviation certificate' as per enclosed [Annexure-2](#). Bidder shall submit no deviation certificate as per enclosed format only.
- 6.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HYEAVY ELECTRICALS LTD

SR.ENGR (SCT)

Encl : As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Erection, testing and commissioning of River/Canal water piping, Plant water piping/ ACW piping & DM water piping systems and various balance piping systems, Equipments and piping of 'Fire Protection system' package for RRVUNL, 2x660 MW, Stage-V, Unit # 7 & 8 Suratgarh Super Critical TPS, Rajasthan.	
Ref	1.0	Tender no PSER:SCT:SRG-P1631:14
	2.0	BHEL's NIT, vide reference no PSER:SCT:SRG-P1631:4103, Date: 04-12-2014.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:SRG-P1631:TCN-01, dated 20-12-2014.
	4.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

ANNEXURE-A TO TCN-01

Job	Erection, Testing, Commissioning of River / Canal Water piping, plant water piping/ ACW piping & DM Water piping systems and various balance of piping systems , equipments and piping of ‘ Fire Protection system” package for RRVUNL, 2X660 MW, Stage-V, Unit# 7&8 Suratgarh Super Critical TPS, Rajasthan
Tender No.	PSER:SCT:SRG-P1631:14

Clarification to bidder’s query

SI No.	Reference Clause of Tender Document	Existing Provision	Bidder’s Query	BHEL’s Clarification
1			Upto what diameter, pre-fabricated pipe will be provided by BHEL	All pipes and fittings shall be supplied by BHEL in fabricated condition. Pl. refer TCC .
2	Clause 5.11, 5.21 , page 7 of 9 , volume –II “ SCOPE OF WORK, TECHNICAL SPECIFICATION”		Please clarify the scope of Radiography and UT to be carried out by bidders. i.e Upto which diameter, Radiography will be carried out and upto which diameter UT is envisaged?	The same will be as per approved FQP. However, the standard FQP for LP piping is attached for tendering purpose and for general guidance to the bidder.
3		Scope of CW piping and it’s provision as mentioned in BOQ and drawings attached in the specification. Also, please refer Annexure-II PAGE 9 OF 9 of VOLUME-II and BILL OF quantities	Kindly let us know whether the CW piping is also in scope of bidder? The BOQ indicates the CW piping of 3500 mm dia, however, price schedule has been asked upto 900 mm and below diameter piping. Even the quantity as indicated also shows that the CW piping may not be included in the tentative weight schedule of specification.	Piping above 900 mm dia is not in the scope of this tender.

ANNEXURE-A TO TCN-01

Job	Erection, Testing, Commissioning of River / Canal Water piping, plant water piping/ ACW piping & DM Water piping systems and various balance of piping systems , equipments and piping of ‘ Fire Protection system” package for RRVUNL, 2X660 MW, Stage-V, Unit# 7&8 Suratgarh Super Critical TPS, Rajasthan
Tender No.	PSER:SCT:SRG-P1631:14

			Please clarify the scope.	
4			Kindly clarify and confirm whether BHEL will provide the detailed construction drawing for the piping to the successful bidder?	Relevant erection/layout drawing will be provided to the vendor during execution.
5	Clause 2.8.8 , page 18 of GCC	Contractor shall be responsible for proper accommodation of personnel employed by him	Kindly clarify what facility (any open space and /or shed etc) if it is envisaged to be provided to the staff and laborers to be engaged by the contractor	As per TCC.
6	CLAUSE 35.2 , page 16 Of 19 of technical conditions of contract (Volume IF-CML-REV 0	All taxes (except service tax including educational cess) , WCT under VAT Act, duties, charges etc (if any) for the execution of the contract shall be borne by the contractor	Kindly clarify whether the price to be quoted by bidder as per Volume –III, Price Schedule of the tender document are exclusive of services tax	As per cl. no.35.0 (Taxes, Duties etc.) of the TCC.
7	Clause 40.0, page 18 of 19 of technical conditions of contract	Rate revisions and PVC- NOT APPLICABLE FOR THIS TENDER. Permits 85% of the	As the clauses are contradictory, kindly clarify whether the variation shall be considered or the quoted price are firm for the contract	As per TCC.

ANNEXURE-A TO TCN-01

Job	Erection, Testing, Commissioning of River / Canal Water piping, plant water piping/ ACW piping & DM Water piping systems and various balance of piping systems , equipments and piping of ‘ Fire Protection system” package for RRVUNL, 2X660 MW, Stage-V, Unit# 7&8 Suratgarh Super Critical TPS, Rajasthan
Tender No.	PSER:SCT:SRG-P1631:14

	And clause 2.17 , page 25 “ ‘price variation compensation’	contract value adjustment for variation in various relevant indices during execution of work	execution period envisaged the tender	
8	Clause 2.17 , page 4 of 9 , volume –II , scope of work, technical specification	Necessary excavation for buried pipe and backfilling with earth is excluded from the scope of bidder	In this regard, please clarify the scope of buried pipe in this tender such as Canal water pipe, ACW pipe, fire fighting pipe are buried pipe or above ground pipe?	Scope is as per various piping schedules (BOM) attached with the tender. However, these schedules are for tendering purpose, based on very preliminary engineering. Payment will be released as per Rate schedule items only.
9	Vol-III	Item description of Sl. No. 8 “Piping System including valves, fittings, equipments etc of 'Fire Protection sys' pkg.”		Item description is revised–refer Rate Schedule,Revision-01 attached.

FIELD QUALITY PLAN

FOR

L P PIPING

(ERECTION)

FOR

UNIT CAPACITY --- 660 MW



BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR - EASTERN REGION

FIELD QUALITY PLAN

FOR

L P PIPING

(ERECTION)

FOR

UNIT CAPACITY --- 660 MW

PREPARED BY	DGM/QLY	APPROVED BY	HEAD/QLY
FQP NO.	QPE:STD:660:PP:72		
ORIGINAL DATE OF ISSUE	17/11/2009		
REVISION NO. & DATE	R01 Dtd 16.02.2010		
COPY NO.			
ISSUED TO			
DATE OF ISSUE			
CONTROLLED / INFORMATION COPY			
ISSUED BY (SIGNATURE & DESIGNATION)			



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR – EASTERN REGION**



FIELD QUALITY PLAN
FOR
LP PIPING
(ERECTION)

FQP NO. QPE:STD:660:PP:72

REV NO. R01


Sheet 1 / 1 Sheet

CONTENTS

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3.0	Statement of Checks	8
4.0	Documents referred in Field Quality Plan	1
5.0	Log Sheets : L-00 & L-01	2
6.0	Protocol	1
7.0	Feedback on Field Quality Plan	1

ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14


WI:QLY:03-F04/R0


 PSEER	FIELD QUALITY PLAN FOR LP PIPING (ERECTION)	FQP NO. QPE:STD:660:PP:72
		REV NO. R01
		Sheet 1 / 1 Sheet

STATUS OF REVISIONS


SL.NO.	REFERENCE OF SHEET REVISED	REVISION NO. & DATE	REMARKS
1.	All	01/ 16.02.2010	Numbering System of SFQP revised as per work instruction

WI:QLY:03-F05/R0


 PSER	FIELD QUALITY PLAN FOR LP PIPING (ERECTION)	FQP NO. QPE:STD:660:PP:72														
		REV NO. R01														
		SHEET 1 / 1 SHEET														
AUTHORISATION FOR DIFFERENT CATEGORIES OF CHECKS																
Classification of Check																
<table border="1"> <thead> <tr> <th>Symbol</th> <th>Description</th> <th>Checking Authority</th> <th>Accepting Authority</th> </tr> </thead> <tbody> <tr> <td align="center">A</td> <td align="center">Critical</td> <td align="center">BHEL & Customer</td> <td align="center">Customer</td> </tr> <tr> <td align="center">B</td> <td align="center">Major</td> <td align="center">BHEL</td> <td align="center">HOS</td> </tr> <tr> <td align="center">C</td> <td align="center">Minor</td> <td align="center">BHEL</td> <td align="center">BHEL</td> </tr> </tbody> </table>	Symbol	Description	Checking Authority	Accepting Authority	A	Critical	BHEL & Customer	Customer	B	Major	BHEL	HOS	C	Minor	BHEL	BHEL
Symbol	Description	Checking Authority	Accepting Authority													
A	Critical	BHEL & Customer	Customer													
B	Major	BHEL	HOS													
C	Minor	BHEL	BHEL													
Legend:	Customer : Customer or any other agency authorized by the customer. BHEL : Concerned engineers of BHEL – Task Performer. HOS : HEAD OF SECTION for BHEL															
NOTE :																
1. Quantum of check shall be 100% for all characteristics unless otherwise mentioned in reference documents.																
2. Customer shall witness A category checks. He is also authorised to carry out Surveillance in any of the B & C category of checks at his discretion.																
3. In case of non-conformity, accepting authority shall ensure dispositioning before accepting and the dispositioning shall be reflected in log sheets / protocols. Dispositioning of non-conformities to be authorised by Head/TSX with intimation to Head/Quality.																
4. Instruments with valid calibration to be used for measurements.																

	FIELD QUALITY PLAN FOR LP PIPING (ERECTION)	FQP NO. QPE:STD:660:PP:72
		REV NO. R01
		Sheet 1 / 8 Sheet
STATEMENT OF CHECKS		
Capacity / Type	: 660 MW	
System	: LP PIPING	
Sub-System	: LP PIPING	
Area	: Erection	
NOTES :		
1	For checks where log sheets are not called for, suitable records shall be maintained in the form of log book / protocols.	
2	As an evidence of having carried out the work satisfactorily, a general-purpose log sheet L-00 shall be maintained for all the checks.	
3	Drawing / Contract requirements shall apply over and above the checks given	
4	Abbreviations used in the column "Type of Check" are:	
	R	: Record Verification
	M	: Measurement
	V	: Visual
	P	: Physical
	T	: Test


**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

 PSER		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)					FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 2 / 8 SHEETS		
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS(H)	
A.	Check the availability of the following documents:	V	-	C	-	100%	-		
	a. Erection drawings								
	b. Hanger arrangement schedule								
	c. Welding Manual								
	d. NDE Manual								
	e. Heat-Treatment Manual								
	f. WPS								
	g. Valves and Fittings schedule								
B.	Check for the following in LP Piping of all the systems:								
1	Dimensions of pipes	M	Tape	B	Drawing	100%	Log book		
2	Edge preparation (wherever required), weld end diameter of pipes.	M	-	B	Drawing	100%	Log book		
3	Orientation and location of attachment welding, if any in pipes.	V	-	C	Drawing	100%	Log book		
4	Location and disposition of terminal points of pipes, wherever applicable.	M	Piano wire/ Tape	B	Drawing	100%	Log book		
5	Completion of supporting structure for piping, wherever required.	V	-	B	Drawing	100%	Log book		


ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)					FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 3 / 8 SHEETS		
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/ FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
6	Completion of supports	V	-	C	Drawing	100%	Log book		
7	Elevation, disposition and slope of pipelines	M	Water level	B	Drawing	100%	Log book		
8	Verticality of pipe lines, wherever required	M	Plumb bob/ Tape	B	Drawing	100%	Log book		
9	Welder's Performance Qualification records	V/ R	-	A	Welding Manual	100%	Log book		
10	Adoption of Correct procedure, approved electrodes and methods.	V/ R	-	B	Welding Manual / FWS	100%	Log book		
11	Cleanliness of Pipe, edge preparation, free from rust, dust, oil, grease etc.	V	-	B	Welding Manual	100%	Log book		
12	Air basting of LDO / Steam blowing of HSD oil lines for thorough cleaning.	V	-	B	-	100%	Log book		
13	Fit-up of joints, orientation and alignment of piping	V/ M	Trisquare/ Scale	C	Drawing / FWS/ Welding Manual	100%	Log book		
14	Completion of welding & NDE	V	-	A	Drawing / FWS/ Welding manual/ Heat Treatment manual / NDE manual	100%	Log book & Test report		
15	Hydraulic test/ Air leak test as applicable.	T/M	Pressure gauge/ Hyd. Pump	A	No Leakage	100%	L – 01/ Protocol		
16	Ensure removal of temporary supports.	V	-	B	-	100%	Log book		
17	Painting wherever applicable.	V/ M	DFT	B	Tech. Spec.	100%	Log book		


**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)					FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 4 / 8 SHEETS		
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
C.	ROTATING EQUIPMENTS (INCLUDING ALL PUMPS, MOTORS AND FILTERS):								
1	Check the foundation for the following, a) Dimension b) Elevation & Level c) Foundation bolt's pocket size & spacing d) Cleanliness	M/V	Tape, Dumpy level & Water level	B	G.A. / Foundation Drawing	100%	Log book		
2	Assembly check.	V	-	B	-do-	100%	Log book		
3	Leveling & alignment check.	M	Dial gauge & Feeler gauge	A	-do-	100%	Protocol		
4	IR value of Motor winding	M	Megger	C	-	100%	Log book		
D	INSTRUMENTS:								
1	Proper location & mounting of instruments.	V		C	Approved Layout drawing	100%	Log book		
2	Calibration and its validity of instruments.	T		B	Calibration TC	100%	Test certificate		
E	WELDING:								
1	Welders' qualification.	V		A	WPS / Welding Manual	100%			
2	Welding of valve end to pipeline and pipe line joints.	V		B	Drawing / Welding Manual	100%			


**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)				FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 5 / 8 SHEETS			
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/ FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
3	Non-destructive examination of welds.	T/V		A	NDE Manual/ FWS	100%			
F. HEAT EXCHANGERS/ TANKS & VESSELS/ STRAINERS:									
1	Check for correct location, orientation, elevation and level.	M	Tape/ Water level	A	Drawing	100%	Log book		
2	Internal cleanliness of equipment.	V	-	B	No foreign material	100%			
3	Hydraulic test of equipment wherever applicable.	T	Pressure gauge/ Hyd. pump	A	No leakage	100%	L - 01		
4	Ensure correct size & grade of fasteners are used and tightened to required torque value.	V/M	Torque wrench	B	Drawing	100%	Log book		
5	Ensure correct size & grade of gaskets are used in flange joints wherever applicable.	V		B	Drawing	100%			


**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)					FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 6 / 8 SHEETS		
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/ FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
G	RUBBER EXPANSION JOINTS:								
1	Check the following for Rubber Expansion Bellow,								
	a) Ensure before installation the adjoining pipes shall be cleaned and free from sharp edges/ objects.	V		C		100%			
	b) Ensure that the space between the adjoining Pipe's flanges match with preset value of RE Bellow for proper fit.	M	Tape	B	Drawing	100%	Log book		
	c) Ensure that the Rubber Expansion Bellow is protected from falling objects, weld spatter & cutting operation.	V		B		100%			
	d) Ensure correct size & grade of fasteners are used and tightened to required torque value.	V/ M	Torque wrench	B	Drawing	100%	Log book		
	e) Ensure locking of expansion joints (equalizing rods) during hydraulic test and release after completion of hydraulic test, wherever applicable.	V		B	Drawing	100%			

**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)					FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 7 / 8 SHEETS		
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
H	ALL TYPES OF VALVES:								
1	Identification of the valves for class, size & location.	V		B	Valve Schedule / Drawing	100%	Log book		
2	Cleanliness of pipelines / valve before fixing / welding.	V		B		100%			
3	Direction of flow (arrow mark) is as per the flow direction indicated on the valve body except for safety valve.	V		C		100%			
4	Availability of supports for valves and pipelines.	V		C	Drawing	100%	Log book		
5	Ensure that gland packing, gaskets & washers are put back in valve and also ensure bolts and studs are fitted and tightened properly.	V		B	Drawing	100%			
6	Matching of valve end and pipe before welding.	V		B	Drawing	100%			
7	Ensure valve is kept fully open and valve seat is protected before welding.	V		C	Installation Manual	100%			
8	Parallelism of the matching flange in case of flanged joints.	V		C	Installation Manual	100%			
9	Smooth opening and closing of valves.	V		B		100%	Log book		

**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**

		FIELD QUALITY PLAN FOR LP PIPING (STATEMENT OF CHECKS)				FQP NO. QPE:STD:660:PP:72 REV NO. R01 SHEET 8 / 8 SHEETS			
SYSTEM: L P PIPING		SUB-SYSTEM: L P PIPING			AREA: ERECTION & STORAGE				
SL NO.	CHARACTERISTICS	TYPE OF CHECK	INSTRUMENT	CLASS	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	QUANTUM/ FREQUENCY OF CHECK	FORMAT OF RECORD	REMARKS/ HOLD POINTS (H)	
I	VALVE ACTUATOR:								
1	Identification of the actuator for location.	V		C	Valve Actuator Data Sheet	100%			
2	Ensure actuator is firmly supported and free from vibration.	V		B		100%			
3	Size and correctness of power and control cables and proper sealing of unused cable entries.	V		C	Drawing	100%			
4.	Earthing connection of the motor.	M	Megger	C	Drawing	100%			
5	Laying and proper termination of power & control cables.	V		C	Cable schedule	100%			
6	Smooth opening and closing of valves with actuator.	V		A		100%	Log book		



FIELD QUALITY PLAN
FOR
LP PIPING
(ERECTION)

FQP NO. QPE:STD:660:PP:72

REV NO. R01

SHEET 1 / 1 SHEET

DOCUMENTS REFERRED IN FIELD QUALITY PLAN

SL.NO.	Reference Document	Issuing Authority
1	Welding Manual	BHEL, PSER
2	NDE Manual	BHEL, PSER
3	Heat Treatment Manual	BHEL, PSER

**ANNEXURE-B TO TCN-01
TENDER NO: PSER:SCT:SRG-P1631:14**



RECORD OF QUALITY CHECKS

SHEET NO. OF FQP	CHECK NO.	RESULTS ACHIEVED OK / NOT OK	DRAWING / DOCUMENT REFERENCE	FORMAT OF RECORD	INSPECTED BY SIGN. & DATE	CLEARED BY SIGN. & DATE	REMARKS

Note : Any protocol made is to be numbered & mentioned in "Format of Record" column.

		SYSTEM	SUB-SYSTEM	AREA	FQP NO. QPE:STD:660:PP:72
PROJECT					REV NO. R01
UNIT NO.		L.P. PIPING			LOG SHEET NO : L-00
RATING					SHEET 1 / 1 SHEET

	INSTRUMENT REGN.NO.		
	DATE OF INSPECTION		
	DRAWING / DOCUMENT REF.		

HYDRAULIC TEST OF PIPING

REQUIREMENTS:

Design Pressure : Kg / cm² (g)

Working Pressure : Kg / cm² (g)

Hydraulic Test Pressure : Kg / cm² (g)

Statutory Code Requirement (if any) :

Reference Document :

Circuits included in the test :

Temperature of the water in the system :

OBSERVATION:

Date of Filling :

Date of hydraulic test :

Temperature of the water in the system :° C

Hydraulic test Pressure : Kg / cm² (g)


Holding time : Minutes

Test Witnessed by :

REMARKS:

Hydraulic test of Piping system at the test pressure of Kg / cm² (g) carried out on and found satisfactory. The piping system is cleared for further operation.

			NAME	SIGNATURE & DATE	FQP NO. QPE:STD:660:PP:72
PROJECT		INSPECTED BY			REV.NO.: R01
UNIT NO.		CLEARED BY			LOG SHEET NO.: L-01
RATING		CUSTOMER			PAGE 1 OF 1

	INSTRUMENT REG. NO./TAG		
	DATE OF INSPECTION		
	DRAWING / DOCUMENT REF.		

PROTOCOL

			NAME	SIGNATURE & DATE	FQP NO. QPE:STD:660:PP:72
PROJECT		INSPECTED BY			REV.NO.: R01
UNIT NO.		CLEARED BY			PROTOCOL NO.
RATING		CUSTOMER			PAGE:

**VOLUME-III
PRICE SCHEDULE, REV-1**

Erection, testing and commissioning of River/Canal water piping, Plant water piping/ ACW piping & DM water piping systems and various balance piping systems, Equipments and piping of 'Fire Protection system' package for RRVUNL, 2x660 MW, Stage-V, Unit # 7 & 8 Suratgarh Super Critical TPS, Rajasthan.

TENDER NO - PSER:SCT:SRG-P1631:14

PREAMBLE

1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with Volume-IB, ID, IE , Volume – IF and other tender sections as applicable.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes(except service tax), transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within fifteen percent ($\pm 15\%$) of the awarded price as per LOI .
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill.This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.

9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing , clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/ altered by them.
15	Bidders to note that for Civil &/Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate ,if the bidder becomes L-1.”
16	In case of Lumpsum contracts, addition or deletion of the scope beyond the variation limit specified shall be derived from the quoted Lumpsum price and the tendered scope of work considering the allowable variation limit.
17	Engineer’s decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works , the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule.
19	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
20	Bidder's GRAND Total price will be shall be considered for evaluation unless stated otherwise.
21	In case of BOP packages, if Bidder does not quote/indicate the price for freight chages against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

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SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of River/Canal water piping system/Plant water system piping/DMCW piping (Carbon Steel piping (below 900 NB)) and associated material (covering fittings and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	2,763	MT	
2	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of Carbon Steel drinking water (up to 150 NB) and service water system (up to 250 NB) piping system and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	730	MT	
3	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of SS (stainless steel) LP piping system (condensate transfer/ DMCW etc) - for dia up to 350 NB and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/ leakage test - 10%; and (vi) As-built drawing submission - 2%.	11	MT	
4	Handling from storage, erection, welding/ jointing, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of instrument air and service air system (up to 150 NB galvanised & threaded) and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Jointing - 38%; (iv) NDT - 10%; (v) Pnuematic test - 10%; and (vi) As-built drawing submission - 2%.	130	MT	
5	Handling from storage, fabrication, erection, welding, inspection, fixing/ embedding, painting etc of hangers, supports & structures, misc supporting material etc all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 35%; (iii) Painting completion - 3% and (iv) As-built drawing submission - 2%.	100	MT	

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SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
6	Handling from storage, erection, welding, inspection, fixing/ embedding, painting etc of RE joints, expansion bellows, annubars & flow elements all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 35%; (iii) Painting completion - 3% and (iv) As-built drawing submission - 2%.	30 MT		
7	Fabrication of mitre bends, tees of sizes NB 250 and above for various carbon steel LP piping system etc from straight pipes. Straight pipes will be supplied by BHEL free. Payment shall be released as per following. (i) Fabrication - 95%; (ii) Erection - 5%.	100 MT		
8	Piping System including valves, fittings, equipments etc of 'Fire Protection sys' pkg. Payment shall be released as per following: (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	50 MT		
9	Wrapping of burried pipe covering supply and application of wrapping coating material (4mm) of burried pipe as per tender specification, drawing/document and as per BHEL instruction. (Qty indicated is surface area of buried pipe in sq mtr). Payment shall be released as per following. (i) Supply - 80% and (ii) Application - 20%.	28260 SQM		
TOTAL (in Rs.)				