



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT

PROJECT : 4x270 MW BHADRADRI TPS
PACKAGE : AUX PRDS

DATE: - 15.05.2017

Corrigenda/Addenda-1

Reference: i) Enquiry No. E-5608/2016 Dtd. 06.05.2017

Due Date : 07/06/2017 (02:00 PM)

Subject: Availability of CIF and QAP correction

1. All bidders to note that CIF is available for this package. Bidders to quote accordingly and furnish the CIF requirement in attached sheet. This sheet shall be part of Price Format for Unpriced and Priced Bid.
2. There is some correction in QAP for subject package. Corrected QAP is attached herewith. Bidders to note the same and quote accordingly.

The bidders, who already have submitted their offer may opt to submit revised bid on account of CIF availability and QAP correction on or before due date & time of offer submission otherwise this corrigendum shall be considered as accepted without need of change in already submitted offer.

All other terms and conditions shall remain unchanged.

Regards

Anil Kumar Pandey

Dy. Manager

PG-II-2

2 X 660 MW ENNORE SEZ STPP						
LIST OF CIF CONTENTS FOR AUX PRDS						
TENDER ENQUIRY REFERENCE:PE/PG/EN1/E-5522/2016, DTD-20.03.2017						
Country of Import :						
Sl. No.	Description of items to be imported.	Unit of Measurement	Qty.	Currency	Unit rate in foreign currency	Total CIF Contents
GRAND TOTAL						

BIDDERS SIGNATURE AND STAMI

QUALITY PLAN FOR CONTROL VALVES

THE DOC IS REVISED IN LINE WITH DESIGN COMMENT dtd 14.05.2015
 VIDE DOC REF No. Lr.No. CPP/411 /bhadradri/BHEL-PEM/15/D.No.311
 /15, Dt: 14.05.15 AND MOM B/W BHEL-PEM & TSGENCO ON 22.05.15.

										TELANGANA STATE POWER GENERATION CORPORATION LTD																									
										DESEIN PRIVATE LIMITED																									
JOB NO. 411 STATUS STANDARD DISTRIBUTION TO <table border="1" style="display: inline-table;"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> No. of <table border="1" style="display: inline-table;"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> REV. DATE ALTD CHD APPD																										PROJECT: BHADRADRI TPS, UNITS # 1 TO 4 (4X270 MW), MANUGURU, KHAMMAM DISTRICT									
										BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA																									
										DEPT CODE I <table border="1" style="display: inline-table;"> <tr> <th>NAME</th> <th>SIGN</th> <th>DATE</th> </tr> <tr> <td>DESN NJ</td> <td>--sd--</td> <td>28.05.15</td> </tr> <tr> <td>CHD SS</td> <td>--sd--</td> <td>28.05.15</td> </tr> <tr> <td>APPD MAM</td> <td>--sd--</td> <td>28.05.15</td> </tr> </table>										NAME	SIGN	DATE	DESN NJ	--sd--	28.05.15	CHD SS	--sd--	28.05.15	APPD MAM	--sd--	28.05.15				
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										DATE 																									
										DRAWING NO. PE-QP-411-145-1006																									
										SHEET 00 OF 07 REV. 00																									



QUALITY PLAN NO.: PE-QP-411-145-I 006

SECTION

00

DATE: 28.05.2015

1

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7

Sl. No.	Component / operation	Characteristics Checked	* Category	Type/Method of Check	Extent of Check	Reference documents	Acceptance Norms	Format of Records	Agency ^s			Remarks
									P	W	V	
1.0	MATERIAL											
1.1	Body & Bonnet casting / forgings, plug, valve stem, seat ring/cage.	1. Physical, Chemical properties	MA	Physical, Chemical tests	One/ Heat(HT Batch)	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Test Certificate	3	---	2,1	Any Forging>=40mm thick or >= 50mm dia shall be UT checked irrespective of rating.
		2. Heat Treatment	MA	Review of H.T. Chart	Each H.T.	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Test Certificate	3/2	2	1	IBR Certification (if applicable) to be verified by BHEL
		3. Internal quality of castings	MA	RT for Body & UT for Bonnet(NDT)	100%	ASME B 16.34	ASME B 16.34	Test Report / FILM	3/2	2	1	Only for rating ANSI 900 and above. Applicable for Body and Bonnet only. For Lower rating only if called for in specification.
		4. Surface Quality	MA	1. Visual	100%	MSS-SP-55	MSS-SP-55	Test Certificate	3/2	---	2,1	
				2. MT/PT	100%	ASME B 16.34	ASME B 16.34	Test Certificate	3	2	1	After Machining on machined surface only

LEGEND: * CR - Critical characteristics
MA - Major characteristics
MI - Minor characteristics

RT- Radiographic Test
UT – Ultrasonic Test

PT – Dye penetrant Test
MT- Magnetic Test

\$ P - Agency Performing the Test.
W - Agency Witnessing the Test.
V - Agency Verifying the Test.

1 - BHEL
2 - Vendor
3 - Sub-vendor

4 – Customer / Customer TPIA

 PEM :: C&I		4X270 MW BHADRADRI QUALITY PLAN FOR CONTROL VALVE (PNEUMATIC)						QUALITY PLAN NO.: PE-QP-411-145-I 006				
								VOLUME				
								SECTION				
								REV. NO. 00		DATE: 28.05.2015		
								SHEET 2 OF 7				
Sl. No.	Component / operation	Characteristics Checked	* Cate gory	Type/Method of Check	Extent of Check	Reference documents	Acceptance Norms	Format of Records	Agency ^s			Remarks
		5. Pressure test for shell	MA	Hyd. Test	100%	ISA-S-75.19/ ASME B 16.34	ISA-S-75.19/ ASME B 16.34	Test Certificate	2	2	1	For Body & Bonnet after machining
1.2	Diaphragm	1. Surface Quality	MA	Visual	100%	Mfr. standard	Mfr. standard	Test Certificate	3/2	---	2,1	
		2. Hardness	MA	Measurement	100%	Mfr. standard	Mfr. standard	Test Certificate	3/2	---	2,1	
		3. Endurance / Life cycle	MA	Cyclic test 10,000 cycles	One / Type	10,000 cycles/ Mfr. standard.	No damage	Test Certificate	3/2		2,1	
1.3	Spring	1. Composition	MA	Chemical-Analysis	One sample/ Heat	Material spec. / Mfr. standard	Material spec. / Mfr. standard	Test Certificate	3	---	2,1	
		2. Mech. Properties	MA	Mech. Test	One sample/ Heat	Material spec. / Mfr. standard	Material spec. / Mfr. standard	Test Certificate	3	---	2,1	Mech. Test shall be as per IS Standard.
		3. Performance	MA	1. Stiffness ratio	100%	Material spec. / Mfr. standard	Material spec. / Mfr. standard	Test Certificate	3	---	2,1	
				2. Scragging	100%	Material spec. / Mfr. standard	Material spec. / Mfr. standard	Test Certificate	3	---	2,1	
				3. Cyclic test (Endurance)	One / type	10,000 cycles	Material spec. / Mfr. standard	Test Certificate	3	---	2,1	
				4. Dimension (Measurement)	One sample/ Lot	Mfr. standard	Appd Drg	Record	3	---	2,1	

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QUALITY PLAN NO.: PE-QP-411-145-I 006

SECTION

REV. NO.

00

DATE: 28.05.2015

SHEET

3

OF

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Sl. No.	Component / operation	Characteristics Checked	* Category	Type/Method of Check	Extent of Check	Reference documents	Acceptance Norms	Format of Records	Agency ^s			Remarks	
									P	W	V		
1.4	Electrical items [Limit switches, Solenoids, Position Transmitter(if provided externally)]	1. Routine Test	MA	HV, IR, Continuity function	100%	Rele. Standards	Rele. Standards	Test Certificate	3	---	2,1	In case TC is not available, Actual test shall be conducted	
		2. Degree of protection	MA	IP/NEMA Tests	One sample / type	Approved Data sheet	Approved Data sheet	Test Certificate	3	---	2,1		
1.5	Pressure Gauges	1. Performance	MA	Review of calibration certificates	100%	Mfr. Standard	Mfr. Standard	Test Certificate	3	---	2,1		
		2. Marking	MA	Visual	100%	Mfr. standard	Mfr. standard	Records	3	---	2,1		
2.0	IN PROCESS INSPECTION												
2.1	After machining, i, Body ii Bonnet iii Plug iv Valve Stem v seat ring/cage	1. Surface flaws	MA	Visual & MT/PT	100% (on accessible surfaces)	ASME B 16.34	ASME B 16.34	Test Records	2	---	1	Butt weld ends shall be included.	
		2. Dimensional checks	MA	Measurement	100%	Mfr. Standard	Mfr. Standard	Records	2	---	1		
		3. Hard facing (wherever applicable)	MA	Hardness Measurement	One sample/Lot	Mfr. Standard	Mfr. Standard	Records	2	---	1		
2.2	Lapping	Machining surface contact	MA	Blue Matching	One sample/lot	-----	Proper Physical Contact	---	2	---	---		

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4X270 MW BHADRADRI QUALITY PLAN FOR CONTROL VALVE (PNEUMATIC)

QUALITY PLAN NO.: PE-QP-411-145-I 006

VOLUME

SECTION

00

DATE: 28.05.2015

4

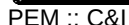
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CONTROL VALVE (PNEUMATIC)

7

5.0 AUXILIARY ITEMS (Performance test of auxiliary items shall be performed on the completely assembled valve)

LEGEND:	* CR - Critical characteristics MA - Major characteristics MI - Minor characteristics	RT- Radiographic Test UT – Ultrasonic Test	PT – Dye penetrant Test MT- Magnetic Test	\$ P - Agency Performing the Test. W - Agency Witnessing the Test. V - Agency Verifying the Test.	1 - BHEL 2 - Vendor 3 - Sub-vendor	4 – Customer / Customer TPIA
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 PEM :: C&I		4X270 MW BHADRADRI QUALITY PLAN FOR CONTROL VALVE (PNEUMATIC)						QUALITY PLAN NO.: PE-QP-411-145-I 006				
								VOLUME				
								SECTION				
								REV. NO. 00		DATE: 28.05.2015		
								SHEET 6		OF 7		
Sl. No.	Component / operation	Characteristics Checked	* Cate gory	Type/Method of Check	Extent of Check	Reference documents	Acceptance Norms	Format of Records	Agency ^s			Remarks
									P	W	V	
5.5	Current to Pneumatic converter(not applicable for smart positioner)	1. Physical Verification Make/Model	MA	Visual	100%	Approved drg. / data sheet	Approved drg. / data sheet	Test Certificate	2	---	2,1	
		2. Degree of Protection	MA	IP/NEMA test	Each type	Relevant Standard	Relevant Standard	Test Certificate	3	---	2,1	
		3. Linearity	CR	Measurement	100%	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Inspection Report	2	---	1	
		4. Hysterisis	CR	Measurement	100%	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Inspection Report	2	---	1	
5.6	Smart Positioner (As Applicable)	1. Physical Verification Make/Model	MA	Visual	100%	Approved drg. / data sheet	Approved drg. / data sheet	Test Certificate	2	---	2,1	
		2. Degree of Protection	MA	IP/NEMA test	Each type	Relevant Standard	Relevant Standard	Test Certificate	3	---	2,1	
		3. Linearity	CR	Measurement	100%	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Inspection Report	2	---	1	
		4. Hysterisis	CR	Measurement	100%	Approved drg. / data sheet / BHEL specn.	Approved drg. / data sheet / BHEL specn.	Inspection Report	2	---	1	
		5. Calibration with Hand Held Communicator	MA	Measurement	Each type	Approved data sheet / Mfr. Standard	Approved data sheet / Mfr. Standard	Test Certificate	2	1	1	
6.0	PAINTING	Soundness of Painting	MA	Visual and Measurement	100%	BHEL specn. / Mfr. Standard	BHEL specn. / Mfr. Standard	Inspection Report	2	---	---	Refer Note-2

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								VOLUME				
								SECTION				
								REV. NO.	00	DATE: 28.05.2015		
								SHEET	7	OF	7	
Sl. No.	Component / operation	Characteristics Checked	* Category	Type/Method of Check	Extent of Check	Reference documents	Acceptance Norms	Format of Records	Agency \$			Remarks
									P	W	V	
7.0	PACKING	Soundness of Packing against transit damage	MA	Visual	100%	Mfr. Standard	Mfr. Standard	Inspection Report	2	---	---	Refer Note-3

NOTES:

1. In case ~~valid CV test certificate for a similar control valve(Same type, Same size, Same CV) is not submitted to BHEL by the vendor~~, CV test shall be conducted at FCRI/Any govt. approved laboratory/ BHEL approved Laboratory.
2. In the absence of BHEL spec. for painting, vendor to obtain BHEL's approval on their painting specification / procedure.
3. Sea worthy packing shall be provided, if applicable.
4. The quantum of check shall be 100% for manufacturer and 10% for BHEL/BHEL nominated inspection agency.
5. IBR certificates in Form III-C shall be submitted if called for in the specification/datasheet.
6. Copies of all TC's(Test Certificates) for materials duly correlated with Heat Nos., TC's for electrical items and mechanical tests(Leak/Operation) shall be submitted to BHEL for verification and acceptance.

LEGEND: *	CR - Critical characteristics	RT- Radiographic Test	PT – Dye penetrant Test	\$ P - Agency Performing the Test.	1 - BHEL	4 – Customer /
	MA - Major characteristics	UT – Ultrasonic Test	MT- Magnetic Test	W - Agency Witnessing the Test.	2 - Vendor	Customer TPIA
	MI - Minor characteristics			V - Agency Verifying the Test.	3 - Sub-vendor	

		STANDARD QUALITY PLAN FOR AUXILIARY STEAM PRDS			CUSTOMER : TSGENCO		PROJECT: 4X270 MW BHADRADRI TPS		SPECIFICATION NUMBR PE-TS-411-142-N101			
					BIDDER/ : AS PER APPROVED VENDOR LIST		SPECIFICATION TITLE : AUXILIARY STEAM P.R.D.S					
		SHEET 1 of 2			SYSTEM ITEM : STEAM DESUPERHEATER		QUALITY PLAN NUMBR		SECTION		VOLUME	
SL. NO.	COMPONENT/ OPERATION	CHARACT-ERISTIC CHECK	CAT.	TYPE METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS
									P	W	V	
1	2	3	4	5	6	7	8	9	10			11

1.0	Raw Materials											
1.1	Pipes	Mechanical & Chemical Prop.		Mechanical & Chemical	100%	Appd Specn./ Data Sheet/Drg.	Appd Specn./ Data Sheet/Drg.	TC	3/2	-	1	Correlation required
		Leakproofness		Hydraulic test	100%	-do-	-do-	TC	3/2	-	1	
		Dimensions		Measurement	100%	-do-	-do-	IR	3/2	-	1	
1.2	Forging	Physical & Chemical Prop.		Physical & Chemical Prop.	1/heat	Appd Specn./ Data Sheet/Drg.	Appd Specn./ Data Sheet/Drg.	TC	3/2	-	1	Correlation required
		Dimensions		Measurement	100%	-do-	-do-	IR	3/2	-	1	
		Heat Treatment		Scrutiny	100%	-do-	-do-	HT/SR Chart	3/2	-	1	Correlation required
2.0	In Process											
2.1	Forgings	Internal defects		U.T	100%	ASTMA 435	ASTMA 435	IR	3/2	-	1	
2.2	Machining Body Internals	Dimensions		Measurement	100%	Appd.Drg.	Appd.Drg.	IR	3/2	-	1	Correlation required
2.3	Body	Surface Defects		D.P. Check	100%	ASTME165	ASME-B 16.34 ,Appendix-III	TC	3/2	-	1	

PARTICULARS	CUSTOMER/CONSULTANT	BHEL	BIDDER / VENDOR	
NAME				
SIGNATURE				
DATE				
				BIDDER'S/ VENDOR'S COMPANY SEALS

