

satyendrasingh

From: Ravi Shekhar <ravishekhar@ntpc.co.in>
Sent: 07 August 2020 17:26
To: satyendrasingh
Cc: Rajeev Ranjan
Subject: Re: Request for approval of vendors for GPICC and Maintenance free Breather for supply of 4 X 200 MVA ICT.

Dear Sir,

Please find below reply from QA.
This is for your information and necessary action please.

Regards,
Ravi Shekhar
Sr. Manager (O&M/EMD)
NTPC Limited
Kahalgaon
Mob- 09650992115

----- Original Message -----

From: "Himanshu Shekhar" <hshekhar@ntpc.co.in>
To: "Ravi Shekhar" <ravishekhar@ntpc.co.in>
Cc: "Chinmoy Sarkar" <csarkar@ntpc.co.in>, "Bhaswati Mukherjee" <bhaswatimukherjee@ntpc.co.in>, "Pinaki Bose" <pinakibose@ntpc.co.in>, "Biswanath Murmu" <bmurmu@ntpc.co.in>
Sent: Friday, August 7, 2020 4:34:35 PM
Subject: Re: Fwd: Request for approval of vendors for GPICC and Maintenance free Breather for supply of 4 X 200 MVA ICT.

Dear Mam / Sir,

Request of M/s BHEL may please be accepted.

With regards.
Himanshu Shekhar
AGM (QA), ER1-SSC-QA
NTPC Ltd., Barh 803 215.
Mob: 96509 91810.

On 7 Aug 2020 12:30, Ravi Shekhar <ravishekhar@ntpc.co.in> wrote:

Dear Sir,

May please review and do the needful at the request of M/s BHEL.

Regards,

Ravi Shekhar
Sr. Manager(O&M/EMD)

NTPC Limited
Kahalgaon
Mob- 9650992115

----- Forwarded Message -----

From: "satyendrasingh" <satyendrasingh@bhel.in>

To: "Ravi Shekhar" <ravishekhar@ntpc.co.in>

Cc: "Rajeev Ranjan" <rajeev.ranjan@bhel.in>, aksharma1@bhel.in, achandra@bhel.in

Sent: Wednesday, August 5, 2020 10:54:50 AM

Subject: RE: Request for approval of vendors for GPICC and Maintenance free Breather for supply of 4 X 200 MVA ICT.

****Security Advisory: This Email has been sent by a Non-NTPC mail ID from Internet. The Actual sender determined by Security Gateway is [satyendrasingh@bhel.in]. Please do not click links contained in this mail or open attachments unless you recognise the source of this email and know the content is safe. **** Dear Sir,

Please refer approved vendor list Item SI No. '04' Fabrication of Transformer Tanks, Conservator, associated piping works, End frame.

It is to bring in your kind notice that for NTPC- Patraru, NTPC-Singrauli and Panki projects End frame was considered as separate item and was covered in a separate QAP (Annexure 1 of Letter No. QTR/QA/NTPC/QP/18-19/01 dated 24/08/2017) and BHEL PMD vendors applicable.

This is to mention that in current Barh/ Kahalgaon project vendor list End frame got added along with Transformer tank inadvertently, which is a typographical error.

Therefore, we request you to kindly allow and accept End frame as deleted from the approved Vendor list of NTPC BARH/ KAHALGAON project in line with NTPC singrauli and Patraru.

धन्यवाद / Thanks,

सत्येन्द्र कुमार सिंह/Satyendra Kr. Singh.

उप अभियंता (गु. आ.) /Dy. Engineer (QA)

बी एच ई एल, भोपाल/BHEL, BHOPAL.

कार्यालय/(Office) : 07552505063

Mob: +91-9770003861

-----Original Message-----

From: Ravi Shekhar [mailto:ravishekhar@ntpc.co.in]

Sent: 24 June 2020 15:00

To: satyendrasingh <satyendrasingh@bhel.in>

Cc: Rajeev Ranjan <rajeev.ranjan@bhel.in>; a mittal <a.mittal@bhel.in>; Ajay Kumar Arya-HEP <akarya@bhel.in>;

aksharma1@bhel.in; Shri Kumar-HEP <somendra@bhel.in>; achandra@bhel.in; Prabir Kumar Paul प्रबीर कुमार पॉल

<pkpaul01@ntpc.co.in>; Chinmoy Sarkar चिन्मय सरकार <csarkar@ntpc.co.in>; Bhaswati मुखर्जी

<bhaswatimukherjee@ntpc.co.in>; K Ranjan के रंजन <kanishkaranjan@ntpc.co.in>; Pankaj Kumar Khanra पंकज कुमार खानरा

<pkkhanra@ntpc.co.in>

Subject: Re: Reply from NTPC for Vendor list for supply of 4 X 200 MVA ICT

Dear Sir,

Competent authority has accorded approval of your submitted 'Revised Vendor list (Rev 01)'.

This is for your information and further necessary action please.

satyendrasingh

From: achandra@bhel.in
Sent: 11 June 2020 17:04
To: 'Somendra Kumar-HEP'
Cc: Rajeev Ranjan; a.mittal@bhel.in; 'Ajay Kumar Arya-HEP'; satyendrasingh@bhel.in; aksharma1@bhel.in
Subject: Reply from NTPC for Vendor list for supply of 4 X 200 MVA ICT
Attachments: Annexure-II-Vendor List NTPC BARH-Commented.PDF

Dear Sir,

Please find comments from NTPC Quality Department in trailing mail for your kind information and compliance.

सादर / Thanks & Regards,

अखिलेश चन्द्र / Akhilesh Chandra
भेल रांची / BHEL Ranchi
मोबाइल - 9798273676, 8541814849

-----Original Message-----

From: Ravi Shekhar <ravishekhar@ntpc.co.in>
Sent: 11 June 2020 16:37
To: achandra@bhel.in
Cc: pkpaul01@ntpc.co.in; Chinmoy Sarkar चिन्मय सरकार <csarkar@ntpc.co.in>; Bhaswati Mukherjee भास्वती मुखर्जी <bhaswatimukherjee@ntpc.co.in>; dhananjaykumar@ntpc.co.in; ajaygupta03@ntpc.co.in; Rajeev Ranjan <rajeev.ranjan@bhel.in>; mr64@bhel.in; kanishkaranjan@ntpc.co.in
Subject: Re: Submission of Endorsement sheet and Vendor list for approval for supply of 4 X 200 MVA ICT

Dear Sir,

Please find comments from our Quality Department. May please Comply:

"Vendor List attached as Annexure-II: As per POs, BHEL is supposed to supply Online DGA Kit, for which NTPC acceptable sub-vendors are missing from the list. Other comments are marked in the same and attached herewith in file named "Annexure-II-Vendor List NTPC BARH-Commented".

"Annexure-II-Vendor List NTPC BARH-Commented" has been attached.

Other documents are generally in order and the same shall be attached in the PO afterwards for inspection.

This is for your information and necessary action please.

Regards,

Ravi Shekhar
Sr. Manager(EMD)

NTPC Limited
Mob- 09650992115

----- Original Message -----

From: achandra@bhel.in

To: ravishekhar@ntpc.co.in, kanishkaranjan@ntpc.co.in

Cc: pkpaul01@ntpc.co.in, "Chinmoy Sarkar चिन्मय सरकार" <csarkar@ntpc.co.in>, "Bhaswati Mukherjee भास्वती मुखर्जी" <bhaswatimukherjee@ntpc.co.in>, dhananjaykumar@ntpc.co.in, ajaygupta03@ntpc.co.in, "Rajeev Ranjan" <rajeev.ranjan@bhel.in>, mr64@bhel.in

Sent: Monday, June 8, 2020 5:15:23 PM

Subject: Submission of Endorsement sheet and Vendor list for approval for supply of 4 X 200 MVA ICT

-----Email received from [External domain] from Internet. Actual Sender:-- achandra@bhel.in-----

Ref: - 1. PO No. 4000234658-M87-1028 DATED 19/03/2020

2. PO No. 5500035287-046-1028 DATED 19/03/2020

Dear Sir,

With reference to above, Please find attached herewith **Endorsement sheet and Vendor list for 4 X 200 MVA ICT along with Approved RQP and End Frame QAP (Approved from NTPC CQA).**

You are requested to approve and send approved copy vide return mail.

सादर / Thanks & Regards,

अखिलेश चन्द्र / Akhilesh Chandra

भेल रांची / BHEL Ranchi

मोबाइल - 9798273676 , 8541814849

इलेक्ट्रॉनिक ट्रांसमिशन संदेश- ई-मेल के लिए डिस्क्लेमर

इस इलेक्ट्रॉनिक ट्रांसमिशन संदेश में दी गई जानकारी अर्थात ई-मेल और इस इलेक्ट्रॉनिक संदेश के साथ प्रेषित कोई अटैचमेंट केवल प्रेषिती (प्रेषितियों) के उपयोग के लिए है और इसमें व्यक्ति विशेष के लिए, गोपनीय या विशेष रूप से अधिकृत जानकारी हो सकती है। यदि यह जानकारी आपके लिए नहीं है तो आपको इस ई-मेल को प्रसारित, वितरित या कॉपी न करें। यदि आपको यह संदेश गलती से मिला है, तो आपको इस संदेश को नष्ट करना चाहिए और ई-मेल द्वारा

ENDORSEMENT SHEET FOR QP REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP/SQP/RFQP/SFQP)		
TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION BHEL Ref. No. QA/TCB/31/1438 Rev 01 dtd. 01/06/2020		To be filled in by NTPC
PROJECT NAME	NTPC-BARH SUPER THERMAL POWER PROJECT	REVIEW & ENDORSEMENT BY NTPC PROJECT SPECIFIC QP NUMBER ALLOTTED QP NO.: REV. NO.: 00 DATE: ** The RQP/SQP/RFQP/SFQP once endorsed for a particular contract shall remain valid even though the original QP may have expired or revised, unless / otherwise mutually agreed with the supplier. ①
PURCHASE ORDER NO.	4000234658-M87-1028 DATED 19/03/2020 5500035287-046-1028 DATED 19/03/2020	
MAIN SUPPLIER	BHEL BHOPAL-462022 (M.P.)	
MANUFACTURER WORKS & ADDRESS	BHEL BHOPAL-462022 (M.P.)	
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE / SIZE /RATING etc.	4 X 200 MVA, 400/132/33 KV INTER CONNECTING TRANSFORMER (WORK ORDER: 69162-A-512-01 & 69163-A-512-01)	
APPROVED QP NO.: RQP/SQP/RFQP/SFQP	0000-999-QVE-P-168 Rev.05 dtd.17/06/2017 -FOR POWER TRANSFORMER UP TO 400Kv CLASS	
Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)		(TICK APPLICABLE)
I. That the item/ component is identical to that considered for QP approval. OR.		The QP is endorsed for this project without any change
II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR		The QP is endorsed for this project with changes as indicated. <u>DISTRIBUTION OF ENDORSEMENT OF</u> A) RQP/SQP: 1. MAIN SUPPLIER (WITH A COPY OF QP) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of QP) 2. MANUFACTURER 3. NTPC FQA (with a copy of QP) 4. NTPC Erection (with a copy of QP) 5. CQA-SPL 6. CQA-O/C
III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached NOTE: NOTE:- END Frame checks/tests against RQP Clause no. 2.01 shall be as per Annexure -1 enclosed Vendor List shall be as per Annexure – 2 enclosed		
PREPARED BY: SATYENDRA KUMAR SINGH DY. ENGINEER/QA-TCB	REVIEWED BY: ABHISHEK KUMAR SHARMA MANAGER / QA-TCB	NTPC (Reviewed /Approved by/ Date & Seal)
SIGN.: (Main supplier)	DATE:01/06/2020	SIGN.: (Manufacturer)
		DATE: 01/06/2020

SL NO		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
1		2	3	4	5	M	C/N	6	7	8	9	D*	10**	11
MANUFACTURER'S NAME & ADDRESS :  BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL														
REFERENCE QUALITY PLAN ITEM : POWER TRANSFORMER Up to 400 kV CLASS														
QP NO.: QA/TCB/31/161 REV. : 05 DATE : 15.06.2017														
SIGN OF MFR.  Santosh Meena														
TO BE FILLED IN BY NTPC QP NO. : 0000-999-QVE-P-168 Rev No: 05 Date: 17.06.2017 Page : 1 of 15 VALID UP TO 16.06.2020														
REVIEWED BY Aman Pandey S H Malani H Shekhar														
APPROVED BY  Aman Pandey Approved														
RAW MATERIAL & BOUGHT OUT ITEMS:														
1.00 a) Correlated supplier's TC for items with unique identification no. / lot no. shall be maintained by BHEL for NTPC verification at any time. In absence of the TC, test / check will be done by BHEL. b) Materials and BOIs to be procured from NTPC approved sources as per vendor list of NTPC project for which RQP is endorsed.														
1.01	MS Steel Plates & Pipes (Stock Item)	a) Thickness	Major	Measure	1 sample / thick / lot	1 sample / thick / lot	-do-	BHEL Drawing & AA10108/AA10119	BHEL Drawing & AA10108/AA10119	TC or TR	P	V	V	In case Tank & accessories are off-loaded to sub vendor, Raw material TC review shall be by Verification-CHP.
		b) Surface defects	-do-	Visual	-do-	-	-do-	-do-	-do-	-do-	P	-	-	
		c) Chemical composition	-do-	Test	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
		d) Mechanical Properties	-do-	-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	
		e) Hydraulic Test of Pipes	-do-	-do-	-do-	-do-	-do-	TRE 164/ AA 10152	TRE 164/ AA 10152	-do-	V	V	V	
1.02	Austenitic Stainless Steel Plates (if used) (Stock Item)	a) Thickness	Major	Measure	1 sample / thick / lot	-	-do-	BHEL Drawings / ASTM A 240 M	BHEL Drawings / ASTM A 240 M	TC or TR	P	-	-	In case Tank & accessories are off-loaded to sub vendor, Raw material TC review shall be by Verification-CHP.
		b) Surface defects	-do-	Visual	-do-	-	-do-	-do-	-do-	-do-	P	-	-	
		c) Chemical Composition	-do-	Test	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
		d) Mechanical Properties	-do-	-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	
1.03	Radiator - Pipe Material & Cold rolled steel sheet (stock material)	a) Mechanical Properties	Major	Visual	100%	-	-do-	BHEL Drawings & AA10115/BP10147/ AA10152	BHEL Drawings & AA10115/BP10147/ AA10152	TC or TR	P	-	-	
		b) Chemical composition	-do-	Test	-do-	-	-do-	-do-	-do-	-do-	V	-	-	
		c) Pressure test	-do-	-do-	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
1.04	CRGO Steel (Stock Item)	a) Dimensions & finish	Major	Measure	1 sample / lot recd.	-	-do-	Aprvd drgs & data sh/ AA25716/BP10987/ BP10988/BP10984/ BP10985/AA10914	Aprvd drgs & data sh/ AA25716/BP10987/ BP10988/BP10984/ BP10985/AA10914	TC or TR	P	V	-	
		b) Grade of CRGO	-do-	Verify	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
		c) Edge camber	-do-	Test	-do-	-	-do-	-do-	-do-	-do-	V	-	-	
		d) Specific core loss	-do-	-do-	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
		e) Surface resistivity	-do-	-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	
		f) Stacking factor	-do-	-do-	-do-	-	-do-	-do-	-do-	-do-	V	-	-	
		g) Permeability at 800A/m	-do-	-do-	-do-	-	-do-	-do-	-do-	-do-	V	-	-	
		h) Bend Test / Ductility	-do-	-do-	-do-	-	-do-	-do-	-do-	-do-	V	-	-	
		i) Aging Property	-do-	-do-	-do-	1 sample / lot	-do-	-do-	-do-	-do-	V	V	V	
		j) Edge Burr Level	-do-	-do-	-do-	-do-	-do-	-do-	-do-	-do-	P	V	V	
LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.														
**M: MANUFACTURER/SUB-SUPPLIER, C: MAIN SUPPLIER, N: NTPC, P: Perform, W: Witness and V: Verification as appropriate, CHP: NTPC shall identify in column "N" as W														
Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection														

SL NO		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
1		2	3	4	5	M	C/N	6	7	8	9	D*	10**	11
1.05	Press Board Insulation & Press Board Moulding (Stock Item)	a) Thickness b) Width / Dia & Length c) Density d) Compressive Strength e) Elongation f) Tensile strength g) Moisture content h) Shrinkage in air i) pH value j) Ash content k) Electric strength in oil l) Oil absorption m) Cohesion between plies	Major	Measure	5pc / lot	-	-	AA21108/AA21105/ AA21109/AA21101 / TRE 184/TRE 185	AA21108/AA21105/ AA21109/AA21101 / TRE 184/TRE 185	TC or TR	P	-	-	AA21101 for Peress Board Moulding
1.06	Synthetic rubber bonded cork sheet (Stock Item)	a) Dimension b) Hardness c) Tensile strength d) Compressibility e) Recovery f) Compression set g) Flexibility h) Ageing in Oil i) Side flow j) Density	Major	Measure	1pc/lot/th	-	-	AA59802	AA59802	TC or TR	P	-	-	
1.07	Viton/ Nitrile Gasket	a) Dimension b) Hardness c) Tensile strength d) Compression set e) Ageing in Oil (Type test for Nitrile Gasket)	Major	Measure	1 pc/lot	-	-	AA59808/AA59807	AA59808/AA59807	-do-	V	-	-	

LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.
****M:** MANUFACTURER/SUB-SUPPLIER, C: MAIN SUPPLIER, N: NTPC, P: Perform, W: Witness and V: Verification as appropriate, **CHP:** NTPC shall identify in column "N" as W

Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection

 MANUFACTURER'S NAME & ADDRESS : BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL		REFERENCE QUALITY PLAN						 TO BE FILLED IN BY NTPC						
		ITEM :		Q.P. NO.:		SIGN OF		Q.P. NO. : 0000-999-QVE-P-168		REVIEWED BY		APPROVED BY		
		POWER TRANSFORMER Up to 400 kV CLASS		QA/TCB/31/161 REV. : 05 DATE : 15.06.2017		MFR.  Santosh Meena		Rev No: 05 Date: 17.06.2017 Page : 3 of 15 VALID UP TO : 16.06.2020		Aman Pandey S H Malani H Shekhar		 Approved Dt. P.C., No.		
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	10**			11
1.08	Unimpregnated densified laminated wood - Bottom Support / Wooden Ring	a) Dimensions b) Surface finish c) Electrical Strength d) Oil absorption e) Moisture content f) Compression strength g) Crossbreaking strength h) Tensile strength	Major	Test	Isample/ thick/lot	-	AA 22001/AA 22002	AA 22001/AA 22002	TC or TR	P	-	-		
			-do-	Visual	-do-	-	-do-	-do-	-do-	P	-	-		
			-do-	Test	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
1.09	Kraft Insulating Paper for PICC / CTC / Thermally Upgraded paper	a) Dimensions b) Density & substance c) Tensile Strength d) Water Absorption e) Moisture Content f) pH Value g) Ash Content h) Electrical Strength i) Air Permeability j) Tear Index	Major	Measure	As per purchase spec	-	BHEL Drgs. & AA21111/AA21116	BHEL Drgs. & AA21111/AA21116	TC or TR	P	-	-		
			-do-	Test	-do-	Isample / lot	-do-	-do-	-do-	V	V	V		
			-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	Isample / lot	-do-	-do-	-do-	V	V	V		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
			-do-	-do-	-do-	-	-do-	-do-	-do-	V	-	-		
1.10	Paper Insulated Copper Conductor (PICC) / Glued Insulated Copper conductor (GPICC)	a) Dimensions & tolerances (Bare & Insulated) b) Resistivity c) Elongation /Tensile Strength d) Proof Stress e) Break down Voltage f) Insulation Test b/n strands for bunched conductors	Major	Measure	Lot/sample/ size (No. of drums)	Lot/sample/ size (No. of drums)	BHEL Drawings & AA28125/AA28128/ TRE 078/ TRE 151	BHEL Drawings & AA28125/AA28128/ TRE 078/ TRE 151	TC or TR	P	V	V		
			-do-	-do-	2-50 : 1	2-50 : 1	-do-	-do-	-do-	V	V	V		
			-do-	-do-	51-280 : 3	51-280 : 3	-do-	-do-	-do-	V	V	V		
			-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	For Non-Proof Stressed Conductors	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	For Proof Stressed Conductors	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	For enamelled conductor	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-	V	V	V	Manufacturer shall conduct insulation test of bunched conductor on 100% basis	

LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.
 **M: MANUFACTURER/SUB-SUPPLIER, C: MAIN SUPPLIER, N: NTPC, P: Perform, W: Witness and V: Verification as appropriate, CHP: NTPC shall identify in column "N" as W

Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection

MANUFACTURER'S NAME & ADDRESS :		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC						
BHIHAT HEAVY ELECTRICALS LIMITED, BHOPAL		ITEM :		POWER TRANSFORMER Up to 400 kV CLASS		QP NO. : 0000-999-QVE-P-168		Rev No: 05						
						QA/TCB/31/161		REVIEWED BY						
						REV. : 05		Aman Pandey						
						DATE : 15.06.2017		Date: 17.06.2017						
								Page : 4 of 15						
								VALID UP TO						
								16.06.2020						
						Santosh Meena		S H Malani						
								H Shekhar						
								Approved						
								D.C., Noida						
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	6		7	8	9	D*	10**			11
		h) Copper Purity of CC rod	-do-	-do-	1sample/lot	1sample/lot	AA12024	AA12024	-do-		V	V	V	
		i) Oxygen content of CC rod	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	
1.11	Continuously Transposed Copper Conductor (CTC) / Glued CTC (where applicable)	a) Dimensions & tolerances (Bare & Insulated)	Major	Measure	Lot/sample/size (No. of drums)	Lot/sample/size (No. of drums)	BHEL Drawings & AA 28129/AA 28127/ TRE 078/ AA12024/ TRE036	BHEL Drawings & AA 28129/AA 28127/ TRE 078/ AA12024/ TRE036	TC or TR		P	V	V	Manufacturer shall conduct insulation test of bunched conductor on 100% basis
		b) Resistivity	-do-	Test	-do-	-do-	-do-	-do-	-do-		V	V	V	
		c) Elongation / Tensile Strength	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	For Non-Proof Stressed Conductors
		d) Proof Stress	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	For Proof Stressed Conductors
		e) Flexibility & adherence of enamel covering	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	
		f) Break down Voltage	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	
		g) Copper Purity	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	
		h) Oxygen content	-do-	-do-	-do-	-do-	-do-	-do-	-do-		V	V	V	
1.12	Insulating Oil (At refinery works)	a) Kinematic viscosity at 40°C & (-)30°C	Major	Test	As per IS/ IEC	As per IS/ IEC	NTPC Specification	NTPC Specification	nsp.Record	✓	W	W	W	
		b) Flash point	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		c) Pour Point	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		d) Appearance	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		e) Density at 20° C	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		f) Interfacial tension at 25°C	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		g) Neutralisation value	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		h) Corrosive sulphur	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		i) Water content	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		j) Anti oxidants additives	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		k) Oxidation Stability	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		i) Neutralisation value	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		ii) Sludge % by mass	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		l) Breakdown voltage	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		i) As delivered, kV	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	
		ii) After treatment	-do-	-do-	-do-	-do-	-do-	-do-	-do-	✓	W	W	W	

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						QA/TCB/31/161	MFR.	Rev No: 05						
						REV. : 05		Date: 17.06.2017						
						DATE : 15.06.2017		Page : 5 of 15						
								VALID UP TO 16.06.2020						
							Santosh Meena	REVIEWED BY Aman Pandey						
								APPROVED BY						
								K.N.Ojha						
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	10**			11
		m) Dissipation factor at 90°C & 40 Hz to 60 Hz	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	W	W	W	
		o) PCA content	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	W	W	W	
		p) Impulse withstand level	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	W	W	W	
1.13	Oil Impregnated Paper (OIP) Conenser Bushing (Applicable for Bushing other than BHEL make)	a) Type, Model, Rating	Major	Test	100%	100%	IEC-60137 / IS:2099 Appvd OGA Drwg.	IEC-60137 / IS:2099 Appvd OGA Drwg.	TC or TR	√	P	V	V	For BHEL make Bushings, please refer RQP no. 0000-999-QVE-P-198
		b) Routine tests	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	BHEL-TRE. to review the test results
		c) Nitrogen Pressure test	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
		d) Dimensional Check	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	Creepage, lead & CT Length, total height etc
		e) Visual inspection	-do-	Visual	-do-	-do-	-do-	-do-	-do-	√	P	-	-	
1.14	Resin Impregnated Paper (RIP) Bushing (as applicable)	a) Visual, Type, Model, Rating	Major	Test	100%	100%	IEC-60137 / IS:2099	IEC-60137 / IS:2099	TC or TR	√	P	V	V	
		b) Routine tests	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
		c) Leakage (Tightness) Test	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
		d) Dimensional Check	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
1.15	Marshalling Box & RTCC Panel	a) Dimensional / Visual checks for wiring	Major	Measure	100%	-	NTPC Appd.Drgs / IS:13947:1993 Pt. 3	NTPC Appd.Drgs / IS:13947:1993 Pt. 3	TC or TR	√	W	-	-	At sub-supplier's works without fitting of WTU/ OTI & associated components, these are in the scope of supply of BHEL.
		b) Check for make of components	-do-	Visual	-do-	-	-do-	-do-	-do-	√	W	-	-	BIS approved makes of wire to be used.
		c) 2 kV insulation test on wiring	-do-	Test	-do-	-	-do-	-do-	-do-	√	W	-	-	
		d) Paint shade, thickness and adhesion test	-do-	-do-	-do-	-	-do-	-do-	-do-	√	W	-	-	
		e) Degree of protection class	-do-	-do-	-do-	-	-do-	-do-	-do-	√	W	-	-	By paper insertion.
1.16	Bushing C.T.	a) Dimensions	Major	Measure	100%	100%	IS:2705-1992 & IS:2705-92 Aprvd Drg/DS	IS:2705-92 Aprvd Drg/DS	TC or TR	√	P	V	V	
		b) Routine tests	-do-	Test	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
1.17	Porcelain Bushing (Stock Item)	a) Dimensional & brazing checks	Major	Measure	100%	-	BHEL Drg. & IS:3347-PS / IS:2099	BHEL Drg. & IS:3347-PS / IS:2099	TC or TR	√	P	-	-	
		b) Visual Checks	-do-	Test	-do-	-	-do-	-do-	-do-	√	P	-	-	
		c) Routine tests	-do-	-do-	-do-	100%	-do-	-do-	-do-	√	V	V	V	
1.18	Buchholtz Relay (Stock Item)	a) Type, Size & Make	Major	Visual	100%	100%	IS:3637 / TR20053B	IS:3637 / TR20053B	TC or TR	√	P	V	V	
		b) Routine test	-do-	Test	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
1.19	OTI & WTI (Local & Remote) (Stock Item)	a) Type, Size & Make	Major	Visual	100%	1 sample / lot	TR 101571/TR 10123	TR 101571/TR 10123	TC or TR	√	P	V	V	
		b) HV Test	-do-	Test	-do-	10%	-do-	-do-	-do-	√	V	V	V	
		c) Calibration	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	V	V	V	

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						Rev No: 05		Aman Pandey	
						Date: 17.06.2017		S H Malani	
						Page : 6 of 15		H Shekhar	
						VALID UP TO 16.06.2020			
						ACCEPTANCE NORMS		FORMAT OF RECORD	
								AGENCY	
								M C N	
								REMARKS	
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	FORMAT OF RECORD	AGENCY
1	2	3	4	5	M	C/N	7	9	10**
1.20	Valves - Gunmetal / C1 (Gate / Globe) (Stock Item)	a) Dimensional check b) Type, Size & Make c) Leakage Test (Hydraulic test for Body and Seat)	Major -do- -do-	Measure Visual Test	100% -do- -do-	- - -	TR 20036V/TR 20037V -do- -do-	TC or TR -do- -do-	W W W
1.21	Valves - Butterfly (Stock Item)	a) Dimensional check b) Type, Size & Make c) Leakage Test (Hydraulic test for Body and Seat)	Major -do- -do-	Measure Visual Test	100% -do- -do-	- - -	TR20034V/TR 20020V -do- -do-	TC or TR -do- -do-	W W W
1.22	Pressure Relief Valve (Stock Item)	a) Dimensions, Type & Make b) Pressure operation test c) Leakage test at 75% rated press. d) HV Test	Major -do- -do- -do-	Measure Test -do- -do-	100% -do- -do- -do-	- 1sample / lot - 1sample / lot	TR 20001V -do- -do- -do-	TC or TR -do- -do- -do-	P V V V
1.23	Magnetic Oil Gauge (Stock Item)	a) Type, Size & Make b) Dial Marking c) Switch Continuity d) HV Test e) Operational test	Major -do- -do- -do- -do-	Visual -do- Test -do- -do-	100% -do- -do- -do- -do-	- - - - -	TR 20041 O -do- -do- -do- -do-	TC or TR -do- -do- -do- -do-	P V V V V
1.24	Air Cell for Conservator (Stock Item)	a) Dimensional check b) Surface Finish c) Acceptance Test	Major -do- -do-	Measure Visual Test	100% -do- -do-	- - 100%	TR 10150 A -do- -do-	TC or TR -do- -do-	✓ P P V
1.25	Gas Collecting Device (Stock Item)	a) Dimensions b) Pressure Test	Minor -do-	Measure Test	100% -do-	- -	BHEL/Supplier Drgs -do-	TC or TR -do-	V V
1.26	Oil Pump & Motor Set (Stock Item)	a) Type, Model, Rating b) Performance Test (Input, Output Discharge, No Load test, Locked Rotor test) c) HV Test d) Leakage Test	Major -do- -do- -do-	Verify Test -do- -do-	100% -do- -do- -do-	100% -do- -do- -do-	BHELdrwg / data sh. -do- -do- -do-	TC or TR -do- -do- -do-	✓ V V V V
1.27	Cooling Fan & Motor Assembly (Stock Item)	a) Type, Model, Rating b) Insulation Resitance c) HV Test d) Power consumption & RPM	Major -do- -do- -do-	Verify Test -do- -do-	100% -do- -do- -do-	- - - -	BHELdrwg / data sh. -do- -do- -do-	TC or TR -do- -do- -do-	✓ V V V V

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						REV. : 05		Rev No: 05	Aman Pandey					
						DATE : 15.06.2017		Date: 17.06.2017						
								Page : 7 of 15						
								VALID UP TO						
								16.06.2020						
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE CRITERIA	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	M	C	N	11
1.28	Oil Flow Indicator (Stock Item)	a) Type, Model, Rating b) Dimensional Check c) Functional Test	Major -do- -do-	Verify Measure Test	100% -do- -do-	- - -	TR 10050 I -do- -do-	TR 10050 I -do- -do-	TC or TR -do- -do-	V V V	- - -	- - -		
1.29	SRBP Cylinder (if applicable)	a) Visual Inspection for any Void & damage b) Dimension	Major -do-	Visual Measure	100% -do-	100% -do-	BHEL Drgs/ Specs -do-	BHEL Drgs/ Specs -do-	TC or TR -do-	P P	W V	W V		
1.30	On Load Tap Changer / Off Circuit Tap Changer (For BHEL make only. For other make, TC Review will be done)	a) Mechanical test of diverter switch Insert, 4000 switching operation (Min) b) Mili volt drop / contact resistance measurement before & after Mechanical test (4000 switching opm) c) Sequence test d) Pressure test of diverter switch compartment with oil e) Mechanical test of tap selector with motor drive 500 staisfactory operations (in all) from one extreme position to the other in air f) Operation test of complete (functional check) tapchanger - satisfactory operation for one complete cycle g) Auxiliary circuits HV Test at 2KV for 1 min. h) Condition of Silver plating on contacts on the jop after 4000 switching operation i) Adhesion & thickness check on silver plated contact	Major -do- -do- -do- -do- -do- -do- -do- -do-	Test -do- -do- -do- -do- -do- -do- -do- -do-	100% -do- -do- -do- -do- -do- -do- -do- On sample basis	100% - 100% -do- -do- -do- -do- -do- -do- On sample basis	IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawing	IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawings Withstand 0.7 Kg/cm ² for 1Hr. IEC-60214 & BHEL Drawings -do- IEC-60214 & BHEL Drawings Good condition BHEL Drawings	TR -do- -do- -do- -do- -do- -do- - TC or TR	√ √ √ √ √ √ √ - P	P P P P P P P P P	V - V W W W V W V	V - V W W W W W W V	For reference only NA for off ckt tap switch NA for off ckt tap switch For outsourced OLTC, BHEL will Perform this test & NTPC will verify the same. NA for off ckt tap switch

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				REV. : 05		DATE : 15.06.2017		Date: 17.06.2017						
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1	2	3	4	5	M	C/N	7	8	9	D*	10**		11	
1.31	Terminal Connector (Stock Item)	a) Dimensional check b) Surface Finish c) Acceptance tests	Major	Measure Visual Test	As per IS -do- -do-	- - -	IS 5561:1970 & NTPC aprvd Drgs -do- -do-	IS 5561:1970 & NTPC aprvd Drgs -do- -do-	TC or TR -do- -do-		P V V	- - -	- - -	
1.32	Pressure Gauge (Stock Item)	a) Dimensions b) Accuracy check (calibration)	Major	Measure Test	100% -do-	- -	TR 20007 P -do-	TR 20007 P -do-	TC -do-		P V	- -	- -	
1.33	Roller Assembly (Stock Item)	a) Dimensions b) Mechanical properties c) Chemical Properties	Major	Measure Test Test	1 Sample/lot of raw material -do- -do-	- - -	BHEL Drawings & AA 10501/AA19331 -do- -do-	BHEL Drawings & AA 10501/AA19331 -do- -do-	TC or TR -do- -do-		P V V	- - -	- - -	
1.34	Power / Control Cables (Stock Item)	a) Review of Supplier's TC for physical & electrical tests as per specn. / drg	Major	Visual	Sample	1 sample/Lot	BP 28575/ IS 1554 : 1988	BP 28575/ IS 1554 : 1988	TC		V	V	V	
1.35	Silicagel Breather (Stock Item)	a) Visual check, dimensions b) Pressure Test	Major	Measure Test	100% -do-	- -	TR 20040B -do-	TR 20040B -do-	TC -do-		P V	- -	- -	
2.00	IN PROCESS CHECKS:													
2.01	Fabrication of Tank, Cover, Conservator, End Frame - Welding requirement & Painting	a) WPS approval b) PQR & welder qualification c) Welding electrode type d) Check for fit up for butt welds on tank walls, base & cover e) DP test on all load bearing welds as per drawing f) Visual check on weldment for undercuts, contour & uniformity g) Dimensional check after final welding including foundation dimn. h) Rim flatness, fitment & matching of fabricated parts	Major	Verify -do- -do- Visual Test Visual Measure -do-	Once 100% -do- -do- -do- -do- -do- -do-	Once 100% - - - -do- -do- 1st tank of each design per mfr -do-	BHEL WPS as per ASME Sec IX -do- -do- BHEL Drawings BHEL Drawings / AA0850129 BHEL Drawings / AA0622101 BHEL Drawings TR 10015T/ BHEL Drawings	BHEL WPS as per ASME Sec IX -do- -do- BHEL Drawings BHEL Drawings / AA0850129 BHEL Drawings / AA0622101 BHEL Drawings TR 10015T/ BHEL Drawings	QW 482 TC or TR -do- TC or TR -do- -do- -do- -do-		W V V V W W W W	V V - - W W W W	V V - - W W W W	1) BHEL approved WPS, PQR & Welders qualification shall be reviewed by NTPC. 2) Fabrication & painting related jobs may be off-loaded to NTPC approved vendor & their names to be incorporated in the endorsement sheet specifying any change of scope of inspection from RQP. 3) i) Pipes should preferably be fabricated by bending to avoid any butt joints in the pipes. ii) In case of welded construction, all weld joints should ground flush from inside. iii) In case of doubt, particular weld shall be checked visually from inside 4) 100% witness by BHEL-QC (No Third Party Inspection Agency is allowed).

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1		2	3	4	5	M	C/N	6	7	8	9	D*	10**	11
		 MANUFACTURER'S NAME & ADDRESS : BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL		REFERENCE QUALITY PLAN ITEM : POWER TRANSFORMER Up to 400 kV CLASS				QP NO.: QA/TCB/31/161 REV. : 05 DATE : 15.06.2017	 Santosh Meena	Rev No: 05 Date: 17.06.2017 Page : 9 of 15 VALID UP TO 16.06.2020	TO BE FILLED IN BY NTPC QP NO. : 0000-999-QVE-P-168 REVIEWED BY Aman Pandey S H Malani H Shekhar			
		i) Pressure & Vacuum test (Type Tests) j) Air Leakage test for: i) Transformer Tank with turret ii) Conservator & Pipes k) Mounting, matching & orientation of Fabricated component l) Surface cleaning by shot blasting m) Paint film thickness inside & outside, paint shed n) Paint film adhesion test o) Visual checks for any foreign material in the entire tank with conservator, pipes, etc and blanking of ends with bolted plates.		-do- -do- -do- Critical Major -do- -do-	Measure -do- Measure Visual Test -do- Visual	100% -do- 100% 100% Random spot check -do- 100%	100% -do- 1st tank of each design - - - - 100%	TR10084T BHEL Drawings -do- TR10005P-Sr No 22 & BHEL Drgs -do- -do- -do- -	TR10084T BHEL Drawings -do- TR10005P-Sr No 22 & BHEL Drgs -do- -do- -do- -do- -	-do- -do- -do- -do- -do- -do- -do-	W W W W W W P	W W W - - - W	W W W - - - W	NTPC RIO to verify type test clearance from NTPC Engg Only upto air leakage test to be witnessed by Main Supplier & NTPC. Paint process to be only used. (TRE 165/166/167/168) As per TR10005P, Sr no 22. Visual check of pipe work before painting. All inaccessible weld joints shall be checked from inside using BOROSCOPE.
2.02	Radiator	a) Surface cleaning of header support & bracing details by sand/shot blasting b) Air leakage test on elements & radiator assembly by water dipping method c) Paint film thickness & paint shade d) Paint film adhesion test e) Visual checks for any foreign material in the header	Major -do- -do- -do- -do-	Visual Test Measure Test Visual	100% -do- Random spot check 100%	- - - - -	BHEL Drawing/ TR10005P-Sr No 22 BHEL Drawing BHEL Drawing/ TR10005P-Sr No 22 -do- -	BHEL Drawing/ TR10005P-Sr No 22 No leakage at 2kg/cm ² for 30 secs. BHEL Drawing/ TR10005P-Sr No 22 -do- -	TC or TR -do- -do- -do- -do-	P P P P P	- - - - -	- - - - -		
2.03	Core	a) Lamination thickness & size b) Dia over resiglass tape c) Stack Height d) Yoke bolt tightness	Major -do- -do- -do-	Measure -do- -do- Measure	100% -do- -do- -do-	- - - -	BHEL Drawing -do- -do- -do-	BHEL Drawing -do- -do- -do-	TR -do- -do- -do-	P P P P	- - - -	- - - -		

LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.

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Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection

 MANUFACTURER'S NAME & ADDRESS : BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL		REFERENCE QUALITY PLAN						 TO BE FILLED IN BY NTPC						
		ITEM :		QP NO.:		SIGN OF		QP NO. : 0000-999-QVE-P-168 Rev No: 05 Date: 17.06.2017 Page : 10 of 15 VALID UP TO 16.06.2020						
		POWER TRANSFORMER Up to 400 kV CLASS		QA/TCB/31/161 REV. : 05 DATE : 15.06.2017		 Santosh Meena		REVIEWED BY Aman Pandey S H Malani H Shekhar						
						 APPROVED BY अनुमोदित Approved Dt. K. Ojha								
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	10**			11
2.04	Test on core	a) Isolation test test b/n: i) Core to yoke bolts ii) Core to core clamps iii) Core clamps to yoke bolt iv) Core to tank, if applicable b) Visual inspection of fabricated components & core assembly c) Core Verticality d) Visual Inspection of built core e) Preliminary core loss test	Major	Test	100%	100%	BHEL Drg/Plant Std/ NTPC Spec.	BHEL Drg/Plant Std/ NTPC Spec.	TR		P	V	V	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V	
			-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V	
			Major	Test	100%	Surveillance	BHEL Drg/Plant Std/ NTPC Spec.	BHEL Drg/Plant Std/ NTPC Spec.	TR		P	W*	W*	
			-do-	-do-	-do-	-do-	TR10041C/BHEL Drg	TR10041C/BHEL Drg	-do-		P	W*	W*	
			-do-	Visual	-do-	-do-	-do-	-do-	-do-		P	W*	W*	
			-do-	-do-	1core/design	1core/design	TR10260T	TR10260T	-do-		P	V	V	For core having top yoke
2.05	Winding of Coil	a) Brazing procedure & Brazer qualification b) Brazed joints- visual check b) PICC width & thickness c) Coil ID / OD, radial depth, no. of turns/discs, disc anchoring, spacer block alignment, cross-over & interleaving d) Leads & coil identification/mark e) Coil clamping for shrinking & shrunk coil height f) Megger test between strands of bunched conductors g) Continuity test b/n conductors	Major	Verify	100%	100%	BP0631199 / ASME Sec IX	BP0631199 / ASME Sec IX	TR		P	V	V	NTPC to review record of BHEL approved BPS, BQR & Brazer's qualification. BHEL to maintain proper record of brazer deployed for each transformer.
			-do-	Visual	100%	-	BP0631199	BP0631199	TR		P	-	-	
			-do-	Measure	-do-	-	BHEL drawing	BHEL drawing	-do-		P	-	-	
			-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-	
			-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-	
			-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-	
			-do-	Test	-	-	BHEL Elect. Spec. & Drg.	BHEL Elect. Spec. & Drg.	TR		P	-	-	
			-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-	
2.06	Core coil assembly	a) Placement of core assembly on bottom tank b) Insulation & coil assembly & relacing of top yoke c) Proper scarfing of insulation during tapping of terminal gear joints, Position of leads	Major	Physical	100%	100%	BHEL QC checklist / BHEL Drawing	BHEL QC checklist / BHEL Drawing	QC-CL		P	V	V	
			-do-	Measure	-do-	-	-do-	-do-	-do-		P	-	-	
			-do-	Physical	-do-	-	-do-	-do-	-do-		P	-	-	

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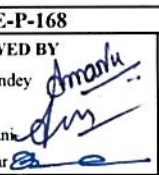
Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection

MANUFACTURER'S NAME & ADDRESS :		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC							
Bharat Heavy Electricals Limited, Bhopal		ITEM :		POWER TRANSFORMER Up to 400 kV CLASS		Q.P. NO. : QA/TCB/31/161 REV. : 05 DATE : 15.06.2017	SIGNATURE Santosh Meena	Q.P. NO. : 0000-999-QVE-P-168 Rev No: 05 Date: 17.06.2017 Page : 11 of 15 VALID UP TO 16.06.2020	REVIEWED BY Aman Pandey S H Malani H Shekhar	APPROVED BY Dated: K. K. Ojha					
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE CRITERIA	FORMAT OF RECORD	AGENCY			REMARKS		
1	2	3	4	5	M	C/N	6	7	8	9	D*	10**	11		
		d) Electrical clearance & inspection of core & coil assembly after completion of terminal gear connections.	-do-	Measure	-do-	100%	-do-	-do-	-do-	-do-		P	V	V	BHEL-TRE. to review the test results
		e) Check coil clamping torque	-do-	Test	-do-	-	BHEL Drawing	BHEL Drawing	-do-		P	-	-		
		f) Check provision of core & core frame earthing	-do-	Physical	-do-	100%	BHEL Drg/NTPC specs	BHEL Drg/NTPC specs	TR		P	V	V		
		g) Alignment of spacers/blocks	-do-	-do-	-do-	-	BHEL Drawing	BHEL Drawing	-do-		P	-	-		
		h) Flash / Isolation test between	-do-	-do-	-do-	-	BHEL Drawing	BHEL Drawing	-do-		P	-	-	BHEL-TRE. to review the test results	
		i) Core to yoke bolts	-do-	-do-	-do-	100%	BHEL Drg/NTPC specs	BHEL Drg/NTPC specs	-do-		P	V	V		
		ii) Core to core clamps	-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V		
		iii) Core to Tank	-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V		
2.07	OLTC / OCTC Fixing & connection	a) Measurement of tan delta of OLTC	Major	Physical	100%	100%	NTPC Specs	< 0.5%	TR		P	V	V	For 132 kV Class transformers & above	
		b) Provision insulation over tap changer mounting frame	Major	Physical	100%	-	BHEL Drawings	BHEL Drawings	-do-		P	-	-		
		b) Lead disposition	-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-		
		c) Brazing / crimping of joints	-do-	-do-	-do-	-	TRX06011/TRX06052	TRX06011/TRX06052	-do-		P	-	-	Joint Inspection with BHEL Quality	
		d) Insulation over joints	-do-	-do-	-do-	-	BHEL Drawings	BHEL Drawings	-do-		P	-	-		
		e) Vector group	-do-	Test	-do-	-	-do-	-do-	-do-		P	-	-		
		f) Ratio test, resistance, magnetic balance & magnetising current on all taps	-do-	-do-	-do-	-	-do-	-do-	-do-		P	-	-	BHEL-TRE. to review the test results	
2.08	Tanking	a) Cleanliness of tank	Major	Visual	100%	-	BHEL Drg / QC-CL	BHEL Drg / QC-CL	QC-CL		P	-	-		
		b) Electrical Clearances	-do-	Measure	-do-	-	-do-	-do-	-do-	✓	P	-	-	BHEL-TRE. to review the test results	
		c) Tanking	-do-	Physical	-do-	-	-do-	-do-	-do-		P	-	-		
2.09	Treatment Process	a) Vacuum Drying- 1st Process	Major	Physical	100%	100%	TR 10266P	TR 10266P	TR		P	V	V		
		b) Servicing (visual inspection of active part, tightening of all joints, clamping, bracing, etc)	-do-	-do-	-do-	Surveillance Check	TR 10266P / BHEL Drg.	TR 10266P / BHEL Drg.	-do-		P	W*	W*	- Joint Inspection with BHEL-TRE - Record to be maintained for exposure time during services.	
		c) Vacuum Drying- 2nd Process	-do-	-do-	-do-	-do-	TR 10266P	TR 10266P	-do-		P	V	V	Cleaning of Tap Changer Contacts is to be done	

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MANUFACTURER'S NAME & ADDRESS :		REFERENCE QUALITY PLAN						TO BE FILLED IN BY NTPC							
BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL		ITEM :		POWER TRANSFORMER Up to 400 kV CLASS		QP NO.: QA/TCB/31/161 REV. : 05 DATE : 15.06.2017		SIGN OF  Santosh Meena		QP NO. : 0000-999-QVE-P-168 Rev No: 05 Date: 17.06.2017 Page : 12 of 15 VALID UP TO 16.06.2020		REVIEWED BY Aman Pandey S H Malani H Shekhar		APPROVED BY  Dt..... K. Ojha	
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS		
1	2	3	4	5	M	C/N	7	8	9	D*	10**			11	
3.00 TYPE TESTS, SPECIAL TESTS & STAGE INSPECTIONS:															
3.01	Type & Special Tests	a) Review of Test Reports													
3.02	Stage Inspections	a) Review of all previous stage of inspection as per QP prior to final testing	Major	Verify	100%	100%	Reports	Reports / NTPC Spec.	TC / TR	V	V	V		NTPC RIO to verify type test clearance from NTPC Engg for complete transformer including bushing, marshaling box, transformer tank (eg. Pressure & Vacuum tests), terminal connector, etc, as per specification / LOA.	
4.00 ROUTINE TESTS:															
a) Each transformer shall be fully assembled with all fittings and accessories (as per GA drawing) meant for the particular transformer for testing. b) Routine test to be read in conjunction with test schedule approved by NTPC Engg.															
4.01	Transformer	a) Partial Counting for Oil b) Electric strength (BDV), water content, resistivity & tan delta & interfacial tension for insulating oil c) Bushing CT Ratio d) Measurement of winding resistance of LV & HV at all taps e) Measurement of voltage ratio at all taps, polarity & vector group verification. f) Measurement of no load losses & magnetizing current at 90%, 100% & 110% of rated voltage g) Magnetic balance test with low voltage single phase supply of LV side for 3 phase transformer before & after final inspection	Major Major Major Critical -do- -do- -do-	Test Test Verify Measure -do- -do- -do-	100% 1 Sample / transformer 100% -do- -do- -do- -do-	100% 1 Sample / transformer 100% -do- -do- -do- -do-	TR 10270P IS 1866 NTPC Spec/Test Report IS 2026/IEC-60076/ NTPC Spec & DS -do- -do- -do-	TR 10270P IS 1866 NTPC Spec/Test Report IS 2026/IEC-60076/ NTPC Spec & DS -do- -do- -do-	TC / TR -do- -do- -do- -do- -do- -do- -do-	√ √ √ √ √ √ √	P P P P P P P	V V V W W W W	V V V W W W W		
LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.										Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection					
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SL NO		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS		
1		2	3	4	5	M	C/N	6	7	8	9	D*	10**			11
			h) Measurement of impedance voltage / short circuit impedance at principal & two extremes taps	Critical	Measure	100%	100%	IS 2026/IEC-60076/ NTPC Spec & DS	IS 2026/IEC-60076/ NTPC Spec & DS	-do-	√	P	W	W	Sampling of oil to be done in presence of NTPC. For Generator Transformers	
			i) Measurement of load loss	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			j) Measurement of insulation resistance	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			k) DGA of insulating oil before & after Temperature rise test	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V		
			l) Temperature rise test at 110% of rated current including Infrared thermography.	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			m) Oil leakage test	-do-	-do-	-do-	-do-	-do-	No leakage	-do-	√	P	W	W		
			n) DGA of insulating oil before & after Dielectric Tests	-do-	-do-	-do-	-do-	-do-	IS 2026/IEC-60076/ NTPC Spec & DS	-do-	√	P	V	V		
			o) Lightning impulse (Full & Chopped wave) test	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			p) Switching Impulse test	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			q) Induced voltage test with partial discharge measurement (IVPD)	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			r) Applied Voltage Test (AV)	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			s) Repeat iron loss measurement and no-load current	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			t) Measurement of insulation power factor & capacitance between winding & earth	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			u) Tests on OLTC / OCTC	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			v) Frequency Response Analysis	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W		
			w) Jacking test & DP check of jacking pad welds	-do-	-do-	-do-	-do-	TR 100271	TR 100271	-do-	√	P	W	W		

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						REV. : 05		Date: 17.06.2017	Aman Pandey					
						DATE : 15.06.2017		Page : 14 of 15	S H Malani					
								VALID UP TO	H Shekhar					
								16.06.2020						
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	10**			11
		x) Isolation test / measurement of insulation resistance between at 10 kV:	Critical	Measure	100%	100%	IS 2026/IEC-60076 NTPC Spec / DS	IS 2026/IEC-60076 NTPC Spec / DS		√	P	W	W	If earthing is done outside the tank
		i) Core to core clamp	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W	
		ii) Core to tank	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W	
		iii) Core clamp to tank	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W	
		y) Verification of core earthing	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	V	V	
		z) Check orientation of component	-do-	-do-	-do-	-do-	NTPC aprd GA	approved GA	-do-	√	P	W	W	
4.02	Marshalling Box	a) 2 kV Test for Aux. wiring	Critical	Test	100%	100%	BHEL Std.	NTPC approved Drg	TR	√	P	W	W	
		b) Degree of protection class check by thin paper insertion method	-do-	Test	100%	100%	NTPC Specification	NTPC Specification	-do-		P	W	W	
		c) Adhesion Test	-do-	Test	Spot check on random basis	Spot check on random basis	-do-	-do-	-do-		P	W	W	
		d) Paint, shade, thickness	-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	W	W	
		e) Functional / Continuity checking of WTL, OTL, Buscholtz relay, etc	-do-	-do-	100%	100%	-do-	-do-	-do-		P	W	W	
4.03	Composite Monitoring System (CMS)	a) Make & BOM of CMS	Critical	Test	100%	100%	NTPC approved Drg/DS	NTPC approved Drg/DS	TR	√	P	W	W	
		b) All functional tests including logic checks	-do-	-do-	-do-	-do-	-do-	-do-	-do-	√	P	W	W	SQP No: 0000-999-QOE-S-065 to be followed
5.00 PRE-SHIPMENT CHECKS:														
5.01	Transformer	a) Internal inspection of transformer	Major	Verify	100%	Surveillance Check	BHEL QC-Check List	BHEL QC-Check List	QC-CL		P	W*	W*	
		b) Dew point measurement of N2 / Dry Air at the time of filling & after 24 hours in transformer tank	Critical	Measure	-do-	-do-	NTPC Specification	NTPC Specification			P	W*	W*	At the time of filling, dew point should be better than -50°C. After 24 hrs dew point should be better than (-)30°C
		c) Nitrogen gas / Dry Air tightness pressure reading, availability of pressure gauge & 2 nos of gas/air cylinders	-do-	Physical	-do-	-do-	TR 10165 S	TR 10165 S Pressure to be maintained at 0.17±0.02 kg/cm2 for 24 hrs or at 0.35±0.02 Kg/sq cm for 12 Hrs	TR		P	V	V	

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						QA/TCB/31/161		Rev No: 05	Aman Pandey					
						REV. : 05		Date: 17.06.2017	S H Malani					
						DATE : 15.06.2017		Page : 15 of 15	H Shekhar					
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SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
					M	C/N				M	C	N		
1	2	3	4	5	6		7	8	9	D*	10**		11	
		d) Installation of impact recorder & functional check on the same in X, Y & Z direction	Major	Verify	100%	100%	BHEL Drawings/ NTPC spec.	BHEL Drawings/ NTPC spec.	TR		P	V	V	
		e) Check for proper loading of transformer on road trailer / railway wagon -proper bracing & anchoring	-do-	-do-	-do-	-	-	-	QC-CL		P	-	-	
5.02	Accessories & fittings	a) Proper packing of accessories & fittings	Major	Physical	100%	100%	Drawings / Packing List	Drawings / Packing List	TR		P	V	V	
		b) Cleaning of pipes & blanking of pipe ends with bolted plates	-do-	-do-	-do-	-do-	-do-	-do-	-do-		P	V	V	

Abbreviation :

W : Customer Hold Point (CHP) - Not to proceed without NTPC clearance
TR : Test record issued by BHEL
TC : Test certificate / Inspection report / Observation report issued by BHEL, Supplier / Vendor
W* (Surveillance Check): Specific call will be given before four hours from start of the activity. In case of non-availability of NTPC-RIO Executive, BHEL will complete the activity within stipulated time and will proceed to next stage.

Notes:

- In case of difference between BHEL Specification / drg & NTPC contract specification / drawing, the later shall be binding considering comments / deviation mutually agreed between BHEL & NTPC for each contract.
- TC correlation for stocked items (having no serial no for identification) will not be possible. For items having unique serial numbers, correlation with TC shall be made.
- Revisions of QP-referred purchase specification & plant standards will be submitted to NTPC for review and reference in case revision takes place during contract execution. In addition to Specs / Standard mentioned in RQP, the Specs / stds. as mentioned in contract drgs. of BHEL shall be applicable. Similarly, Revision number of documents / standards will be as per BHEL Design recommendation / drawing / technical specification.
- A tentative manufacturing Schedule will be submitted to NTPC (RIO) Bhopal by BHEL to facilitate check the activities in general as and when desired by RIO.
- Relevant records should be available with concerned agency (as mentioned in agency column). NTPC may verify them at their discretion at any time.
- Quality & inspection of spare will also be guided as per this QP.
- Spare fitting, accessories, components & instruments ordered by NTPC but not covered in this QP shall be accepted as under :-
 - Items of control cabinet e.g. contactor, overload relay, indicating lamp, push button, rotary switches, etc. shall be VDE / CE / UL / CSA Marking Certification preferably from Third Party Agency or BIS Approval Letter shall be submitted for NTPC's Verification /Information. Despatch clearance will be given based on visual inspection report including type designation and a certificate of conformance issued by BHEL-QC. Other items shall be cleared for despatch on the basis of COC.
 - CHP clearance will be given after verification of supplier's test certificate or QC (TCB) inspection report for miscellaneous items procured as per BHEL's Spec / drg / called in purchase order.
- All pipes / flange openings shall be blanked by bolted plates on flanges to prevent ingress of foreign material.
- Serial no. of testing instrument used, its range and calibration status shall form part of final test reports.
- All TCs/ Records must be reviewed by BHEL prior to submitting it for NTPC Verification. In case of non availability of original TC with BHEL, the BHEL authenticated xerox copy of the same shall be put up for NTPC review.

LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (N) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.

****M:** MANUFACTURER/SUB-SUPPLIER, C: MAIN SUPPLIER, N: NTPC, P: Perform, W: Witness and V: Verification as appropriate, CHP: NTPC shall identify in column "N" as W

Notes: # NTPC Inspection Engineer to check, approval date/revison no. of reference documents at the time of Inspection

Satyendra Singh

From: AshiMohan Telgote-HEP <amtelgote@bhel.in>
Sent: Tuesday, August 21, 2018 7:27 AM
To: Satyendra Kumar Singh-HEP
Subject: Fwd: Regarding consideration of Specification AA10905 in place of AA25716 in Quality Plan of Reactor and Transformer (No 0000-999-QVE-P-412, Rev 00, 9591-501-QVE-Q-003 and 0000-999-QVE-P-168, Rev 05)
Attachments: Part of QP_Transformer.pdf; Part of QP_Recator_9591_501_QVE_Q_003.pdf; Part of QP_Recator.pdf; AA25716.pdf; AA10905.pdf

From: "S K R Meena-HEP" <s.meena@bhel.in>
To: "Ms. Parul Shrivastava-HEP" <parul@bhel.in>, "ajay singh" <ajay.singh@bhel.in>, "deepeshkumbhare" <deepeshkumbhare@bhel.in>, "Ajay Ratnakar-HEP" <aratnakar@bhel.in>, "Shri Ashish Mohan Telgote-HEP" <amtelgote@bhel.in>
Cc: "Shri M K Sharma-HEP" <mk.sharma@bhel.in>
Sent: Monday, August 20, 2018 6:03:56 PM
Subject: Fwd: Regarding consideration of Specification AA10905 in place of AA25716 in Quality Plan of Reactor and Transformer (No 0000-999-QVE-P-412, Rev 00, 9591-501-QVE-Q-003 and 0000-999-QVE-P-168, Rev 05)

Dear Sir,
M4 Grade issue resolved.
Regards

Santosh Meena

From: "amanpandey" <amanpandey@ntpc.co.in>
To: "s.meena" <s.meena@bhel.in>
Cc: ntpcbhopal@yahoo.co.in, "Anita Pal" <anitapal@ntpc.co.in>, "sklal" <sklal@ntpc.co.in>, "Rajesh Sharma" <rajeshsharma02@ntpc.co.in>, "Shakti Nath Tripathi" <shaktintripathi@ntpc.co.in>, "Ashish Senapati" <ashishsenapati@ntpc.co.in>
Sent: Monday, August 20, 2018 5:12:54 PM
Subject: FW: Regarding consideration of Specification AA10905 in place of AA25716 in Quality Plan of Reactor and Transformer (No 0000-999-QVE-P-412, Rev 00, 9591-501-QVE-Q-003 and 0000-999-QVE-P-168, Rev 05)

Dear Sir,

With reference to trailing mail, please be informed that the Specification No. AA10905 for CRGO (as attached herewith) is **NOTED** in place of Specification No. AA25716 as mentioned in the attached Quality Plans for Power Transformers and Reactors.

This is for your kind information & necessary action please.

Thanks & Regards
Aman Pandey
Manager (CQA-Electrical)
NTPC EOC, Noida
9650992159

From: Santosh Meena-HEP [mailto:s.meena@bhel.in]
Sent: 18 August 2018 09:13 AM
To: amanpandey@ntpc.co.in
Cc: amarpratap; Deepesh Kumar Kumbhare
Subject: Fwd: Regarding consideration of Specification AA10905 in place of AA25716 in Quality Plan of Reactor and Transformer (No 0000-999-QVE-P-412, Rev 00, 9591-501-QVE-Q-003 and 0000-999-QVE-P-168, Rev 05)

-----Email received from External domain from Internet. Actual Sender:--
s.meena@bhel.in-----

Dear Madam,
Waiting for your response please.
Regards

Santosh Meena
Sr DGM/TSD

From: "s.meena" <s.meena@bhel.in>
To: "amanpandey" <amanpandey@ntpc.co.in>
Cc: "sklal" <sklal@ntpc.co.in>
Sent: Friday, August 10, 2018 3:50:01 PM
Subject: Regarding consideration of Specification AA10905 in place of AA25716 in Quality Plan of Reactor and Transformer (No 0000-999-QVE-P-412, Rev 00, 9591-501-QVE-Q-003 and 0000-999-QVE-P-168, Rev 05)

Dear Madam,

As discussed with you, Pls refer attached part of approved Quality Plans. In these plans, in clause No 1.04 (Raw Material: CRGO), AA25716 has been misprinted by mistake. It has no relation with CRGO. The correct specification is AA10905 (M4 Grade CRGO). Copy of both AA25716 and AA10905 is attached for your reference.

It is therefore kindly requested to consider the correct specification(AA10905) for inspection and record review.
Waiting for your positive response.

Thanks and Regards

Santosh Meena
DGM/ QTR
BHEL Bhopal
Mobile: 9425604753

इलेक्ट्रॉनिक ट्रांसमिशन संदेश- ई-मेल के लिए डिस्क्लेमर

इस इलेक्ट्रॉनिक ट्रांसमिशन संदेश में दी गई जानकारी अर्थात् ई-मेल और इस इलेक्ट्रॉनिक संदेश के साथ प्रेषित कोई अटैचमेंट केवल प्रेषिती (प्रेषितियों) के उपयोग के लिए है और इसमें व्यक्ति विशेष के लिए, गोपनीय या विशेष रूप से अधिकृत जानकारी हो सकती है। यदि यह जानकारी आपके लिए नहीं है तो आपको इस ई-मेल को प्रसारित, वितरित या कॉपी न करें। यदि आपको यह संदेश गलती से मिला है, तो आपको इस संदेश को नष्ट करना चाहिए और ई-मेल द्वारा प्रेषक को सूचित कर दें। ई-मेल ट्रांसमिशन सुरक्षित या त्रुटिरहित होने की गारंटी नहीं है, क्योंकि जानकारी ट्रांसमिशन के दौरान अवरुद्ध हो सकती है, विकृत हो सकती है, खो सकती है, नष्ट हो सकती है, देर से या अपूर्ण रूप में पहुंच सकती है, या वायरस से ग्रस्त हो सकती है। इसलिए, ई-मेल और इसकी विषय-वस्तु (निर्दिष्ट त्रुटियों के साथ या उनके बगैर) की जिम्मेवारी ई-मेल तैयार करने वाले / प्रेषक या बीएचईएल या उसके सहयोगियों

की नहीं होगी। इस ई-मेल में उल्लिखित विचार या राय, यदि कोई हो, प्रेषक के ही हैं। यह आवश्यक नहीं है कि ये बीएचईएल या इसकी सहयोगी कंपनियों के विचार या राय के साथ मेल खाएं। लक्षित प्राप्तकर्ता ई-मेल या इसकी विषय-वस्तु पर कार्रवाई करने से पहले वैकल्पिक संचार तंत्र के माध्यम से जानकारी या निहितार्थ को सत्यापित करवा सकते हैं।

चेतावनी: यद्यपि कंपनी ने यह सुनिश्चित करने के लिए कि इस ई-मेल में कोई वायरस मौजूद नहीं हो, काफी सावधानी बरती है, फिर भी प्राप्तकर्ता यह जाँच कर लें कि इस ई-मेल और इसके अटैचमेंट्स में वायरस न हों। इस ई-मेल द्वारा संक्रामित किसी वायरस के कारण होने वाली किसी क्षति के लिए ई-मेल का प्रेषक या बीएचईएल जिम्मेदार नहीं हैं।

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Bharat Heavy Electricals Limited, Bhopal

Quality Assurance-TCB

Page 1 of 1

To,
Ms Aman Pandey
Manager (QA)
NTPC
Noida

Ref. No. : QTR/QA/NTPC/QP/18-19/01
Date: 24/08/2017

Sub: Request for Considering Inspection of End Frame as per attached Annexure-1.

Reference: Clause No 2.01 of MQPs of TPL NTPC Telangana Project and

1. RQP No 0000-999-QVE-P-168, Rev 05 (Transformer)
2. RQP No 0000-999-QVE-P-412, Rev 00 (Reactor)
3. MQP No 9591-501-QVE-Q-003 (MQP for Shunt Reactor) &
4. MQP No 9591-501-QVE-Q-001 (MQP for Station and Generator Transformer)

Dear Madam,

As per above referred Quality Plans, It is noted that inspection of End Frame is presently embedded in the clause (Clause No 2.01) of Transformer Tank.

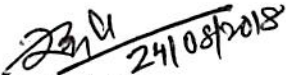
End Frame is a separate fabricated item and is not a part of Transformer Tank and accessories. It is for supporting the core structure in active part.

End Frame was added in latest revision of RQPs but was not separately mentioned.

Considering the above facts, it is kindly requested to consider the Inspection of End Frame as per attached QAP of end frame (attached as Annexure-1).

Waiting for your Positive response.

Regards.


Santosh Meena
Sr DGM QTR
BHEL Bhopal
Mobile: 09425604753

Cc: Shri S K Lal, AGM(QA) NTPC.

MANUFACTURER'S NAME & ADDRESS:				REFERENCE QUALITY PLAN												
BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL				ITEM:				Q.P. NO.:		SIGN OF:		Q.P. NO.:		TO BE FILLED IN BY NTPC		
				Core Clamping Structure (End Frame Assembly for Transformer and Core Clamp assembly for Reactor)				QUANTITY/REV. : 00		MFR.		Rev No: 00		REVIEWED BY		APPROVED BY
				DATE: 21.06.2018						DATE:		Page:		VALID UP TO		
1.00	RAW MATERIAL															
2.00	WELDING REQUIREMENT	Chemical Composition, Mechanical properties	Major	T	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	TC or TR	P	V	V			
		Use of BHEL's Qualified Welders, WPS and PQR	Major	V	100%			As per BHEL's approved WPS and PQR	As per BHEL's approved WPS and PQR	-do-	P	V	V			
		Welding electrodes	Major	V	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	-do-	P	V	V			Only BHEL approved sources
		Visual and Dimensional check of all weld	Major	V, M	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	-do-	P	W	V			
		DIP test on all load bearing welds	Major	V, T	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	-do-	P	W	V			
3.00	DIMENSIONAL CHECK															
		Dimensional Measurement	Major	V, M	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	-do-	P	W	V			
		Dimensional Checking in Assembled condition (For End Frame Assembly)	Major	V, M	100%			As per BHEL Spec/DRG.	As per BHEL Spec/DRG.	-do-	P	W	V			Maintain colour photograph of assembled condition.
4.00	SURFACE CLEANING & PAINTING															
		Shot Blasting	Major	V	100%			TR10003P SR NO 22	As per BHEL Spec/DRG.	TC or TR	P	W	V			
		Painting	Major	V	100%			TR10003P SR NO 22	As per BHEL Spec/DRG.	-do-	P	W	V			Paint film thickness inside and outside. Adhesion test

LEGEND: * RECORDS IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. **MFR. MANUFACTURER/SUB-SUPPLIER, N: BHEL, P: Perform, W: Witness and V: Verification as appropriate. C/HF: BHEL shall identify in column "N".

as W, V- Visual, M- Measurement, T- Test.

Clarification Regarding Agency:

M: Component Manufacturer.

C: BHEL (Equipment Manufacturer)

N: Customer (NTPC/Main Contractor)

24/06/2018

24/06/2018 (Sanjay Meena)

SANTOSH MEENA
Sr. Dy. General Manager
Quality Control-ICB
BHOPAL

satyendrasingh

From: Ravi Shekhar <ravishekhar@ntpc.co.in>
Sent: 24 June 2020 15:00
To: satyendrasingh
Cc: Rajeev Ranjan; a mittal; Ajay Kumar Arya-HEP; aksharma1@bhel.in; Shri Kumar-HEP; achandra@bhel.in; Prabir Kumar Paul प्रबीर कुमार पॉल; Chinmoy Sarkar चिन्मय सरकार; Bhaswati मुखर्ज; K Ranjan के रंजन; Pankaj Kumar Khanra पंकज कुमार खानरा
Subject: Re: Reply from NTPC for Vendor list for supply of 4 X 200 MVA ICT
Attachments: Annexure II Vendor List NTPC BARH Rev 01.pdf

Dear Sir,

Competent authority has accorded approval of your submitted 'Revised Vendor list (Rev 01)'.

This is for your information and further necessary action please.

Regards,

Ravi Shekhar
Sr. Manager(O&M/EMD)
NTPC Limited
Kahalgaon
Mob- 09650992115

----- Original Message -----

From: "satyendrasingh" <satyendrasingh@bhel.in>
To: ravishekhar@ntpc.co.in
Cc: "Rajeev Ranjan" <rajeev.ranjan@bhel.in>, "a mittal" <a.mittal@bhel.in>, "Ajay Kumar Arya-HEP" <akarya@bhel.in>, aksharma1@bhel.in, "Shri Kumar-HEP" <somendra@bhel.in>, achandra@bhel.in
Sent: Friday, June 19, 2020 12:51:38 PM
Subject: RE: Reply from NTPC for Vendor list for supply of 4 X 200 MVA ICT

****Security Advisory: This Email has been sent by a Non-NTPC mail ID from Internet. The Actual sender determined by Security Gateway is [satyendrasingh@bhel.in]. Please do not click links contained in this mail or open attachments unless you recognise the source of this email and know the content is safe. ****

Dear sir,

Ref: - 1. PO No. 4000234658-M87-1028 DATED 19/03/2020

2. PO No. 5500035287-046-1028 DATED 19/03/2020

Please find attached Revised Vendor list (Rev 01) in line with trailing mail and commented copy provided.

	PROJECT : NTPC BARH							LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)										REV. NO.:01	
	SUPPLIER : BHEL, Bhopal										DATE: 12/06/2020	
	CONTRACTOR NO :											
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status/ Category	Sub Supplier Details Submission Schedule	Remark		
A	INTER CONNECTING TRANSFORMER <i>(item subjected to Sub-QR clearance)</i>	I	10			BHEL	Bhopal	A		ICT- 4X200 MVA, 400/132/33 kV		
1	OIL IMPREGNATED CONDENSER BUSHING (≥ 52kV)	I	30			BHEL	Bhopal	A				
		*					ABB Power Tech. Products	Sweden	A			
							ABB Ltd.	Vadodara	A		Up to 245 kV Class	
							Passoni villa (Alstom)	Italy	A			
							GE T&D	Hosur	A			
							Crompton Greaves Ltd	Nasik	A			
							TRENCH FRANCE SAS,	FRANCE	A		Up to 400 kV Class	
							TELK	Agnamally, Kerla	A			
				Crompton Greaves Ltd	Auragabad	A		Up to 245 kV Class				
2	RIP BUSHING	*				TRENCH High Voltage	China	A				
						ABB Secom	Ludvika	A				
						ABB Switzerland,MICAFIL	Switzerland	A				
						HSP	Germany	A				
						Isolyter	Russia	A				
						XIAN XD HV Bushing Co Ltd	China	A				
						Yash High voltage insulator Pvt Ltd	Vadodara	A		Up to 145kV Class		
3	STEEL PLATE AND PIPE	*				Essar Steel India Limited	Hazira	A				
						Jindal Steel & Power Ltd	Raigarh	A				
						SAIL	india	A				
						IISCO	Asansole	A				
						Ispat Industries Ltd	Dolvi	A				
						Jindal Iron & Steel Co Ltd	Mumbai	A				
						RINL	Vishakhapatnam	A				
						TISCO	Jamshedpur	A				
4	Fabrication of Transformer Tanks, Conservator, associated piping works, End Frame	*				BHEL	Bhopal/Jhansi	A				
						Allahabad Enterprises Pvt. Ltd.	Allahabad	A		Upto 400 KV Class Trf.		
						Electro Auto Industries	Bhopal	A				
						Electro Mechanicals Unit I & II	Bhopal	A				
						Mech & Fab Industries	Bhopal	A				
						Mechmen	Bhopal	A		Approval conditions apply		
						Sigma Heavy Engg. Industries	Bhopal	A		Condition Apply		
Satyam (Fab) Industries Pvt. Ltd.	Bhopal	A		Approval conditions apply								

	PROJECT : NTPC BARH					LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)								REV. NO.:01	
	SUPPLIER : BHEL, Bhopal								DATE: 12/06/2020	
	CONTRACTOR NO :									
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status / Category	Sub Supplier Details Submission Schedule	Remark
5	CRGO STEEL	*				Jyoti fabricators	Allahabad	A		Up to 265 MVA 400 KV Trnf
						AK Steel	USA	A		
						JFE steel (Kawasaki)	Japan	A		
						Nippon Steel	Japan	A		
						Posco	Korea	A		
						TKES	Germany	A		
						VizStal/NLMK	Russia	A		For M4 grade only
						COGENT ORB Electrical Steel	UK	A		
6	CRGO PROCESSORS	*				Mitshubishi Corp	Japan	A		
						BHEL	Bhopal / Jhansi	A		
						KRYFS Laminations	Silvassa	A		
						Mahendra Steel Services Center	Mandideep	A		
						Mahendra Intratrade	Vadodara/ Kanhe/ (Pune)	A		
						National Laminations Industries	Daman	A		
						Precision Transcore	Daman	A		
						Surya Laminations	Vadodra	A		
						Amod Stamping	Vadodara	A		
						Alfa Lamination	Daman	A		
						Posco Tmc India Private Limited	Pune	A		
						Pradeep Trans Core	Allahabad	A		
Posco-Poggenamp Electrical Steel Pvt. Ltd.	Kheda (Gujrat)	A								
7	CONTINUOUS CAST COPPER WIRE ROD	*				BHEL Approved Sources	*	A		
8	CONTINUOUSLY TRANSPOSED CONDUCTOR	*				Asta Elektrodraht Gmbh	Austria	A		
						Asta India	Vadodara	A		
						Chandra Proteco	Silvassa	A		
						Shree Cables	Bhopal	A		
						KSH International	Chakan, Pune	A		
						Precision Wires	Silvassa	A		

	PROJECT : NTPC BARH					LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)								REV. NO.:01	
	SUPPLIER : BHEL, Bhopal								DATE: 12/06/2020	
	CONTRACTOR NO :									
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status/ Category	Sub Supplier Details Submission Schedule	Remark
9	PAPER INSULATED COPPER CONDUCTOR	*				Sam Dong	Korea	A		
						Smit Draad	Netherland	A		
						Chandra Metals Pvt Ltd.	Allahabad	A		
						BCPL Conductors Pvt Ltd	Mandideep	A		
						Bhandari Poweerlines Pvt. Ltd	Manipal/Baroda	A		
						Delta Trans Conductors Pvt Ltd	Mumbai	A		
						Precision Wires	Silvassa	A		
						Rima Transformer & Conductors	Bangalore	A		
						Shakti Insulated Wire	Ankleshwar	A		
						Shree Cables	Bhopal	A		
						Vidya wires India Pvt. Ltd.	Vidyanagar	A		Up to 132 kV Class Transformer
						KSH International	Chakan Pune/Taloja	A		
10	INSULATING PAPER for PICC/CTC	*				M.P.Cupro Metals Pvt.Ltd.,	Bhopal	A		
						Munksjo Smurtif	Sweden	A		
						Weidmann	Switzerland	A		
						Amotfors	Sweden	A		
						Tomoegawa	Japan	A		
						CINDUS Corporation	USA	A		For thermally upgraded paper also
11	PORCELAIN INSULATOR FOR BUSHING	*				TERVAKOSKI OY	FINLAND	A		
						BHEL APPROVED SOURCES		A		
12	BUSHING CT	*				BHEL	Bhopal / Jhansi	A		
						Enpay	Vadodara	A		
						Pragati Electricals	Mumbai	A		
						Prayog Electricals	Pune	A		
						Agarwal Industries	Mandideep	A		
						A.U.- Electromachines	Allahabad	A		
						Mahendra Electricals	Mumbai	A		
						Nareyan Power tech	Vadodara	A		up to 132 kV system
13	INSULATING OIL	I				Apar Industries	Rabale/Trombay/ Silvasa	A		
						Raj Petro Specialities	Chennai/Silvasa	A		
						Savita Oil Technologies	Mumbai/Silvasa	A		
						NYNAS PTE LTD	Hongkong	A		

	PROJECT : NTPC BARH						LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)									REV. NO.:01	
	SUPPLIER : BHEL, Bhopal									DATE: 12/06/2020	
	CONTRACTOR NO :										
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status/ Category	Sub Supplier Details Submission Schedule	Remark	
14	MOULDED INSULATION COMPONENTS	*				Enpay	Vadodara	A		Pressboard and Wet Pressboard to be supplied by Enpay, Turkey	
						Enpay	Turkey	A			
						Govik Electricals	Mumbai	A			
						Pucaro Figholm Insulation Kit Centre	Vadodara	A			
						ABB	China	A			
						Raman Boards	Mysore / Vadodra	A			
15	PRE-COMPRESSED BOARDS	*				Raman Board	Mysore	A			
						Enpay	Turkey	A			
						H Wiedman	Switzerland	A			
						ABB Power Tech AB	Sweden	A			
						OJI F-TEX	Japan	A			
						Senapathy Whiteley	Bangalore	A		Condition apply	
						Enpay	Vadodara	A		Pressboard to be supplied by Enpay, Turkey	
						Figeholms	Sweden	A			
16	OIL PUMP AND MOTOR SET	*				Flow Oil Pumps Pvt ltd	Bangalore	A			
						SPP Pumps	UK	A			
						NXL Flow Instruments	Bangalore	A			
						ABS Pump Production AB	Sweden	A			
17	BUCHOLZ RELAY & OIL SURGE RELAY	*				EMB	Germany	A			
						ETI	Italy	A			
						Instruments & Controls	Vadodara	A			
						P&B Weir Electric	UK	A			
						Sukrut Electric Co	Pune	A			
						A.J. Services	Mumbai	A			
						ASPE	Italy	A			
						VIAT INSTRUMENTS	KOLKATA/ Sanand	A			
18	ON LOAD TAP CHANGER	*				Easun MR	Chennai	A			
						CTR Elin	Pune	A			
						BHEL	Bhopal	A			
						ABB Ltd.	Sweden	A			
						MR	Germany	A			
19	RADIATORS	*				Tarang Engineering Pvt.Ltd.	Nagpur	A			
						BHEL	Bhopal	A			

	PROJECT : NTPC BARH						LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)									REV. NO.:01	
	SUPPLIER : BHEL, Bhopal									DATE: 12/06/2020	
	CONTRACTOR NO :										
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status / Category	Sub Supplier Details Submission Schedule	Remark	
						Hi Tech Radiators	Mumbai	A			
						PE Engrs	Hyderabad	A			
						Transpares Pvt. Ltd	Ahamadabad	A			
						TTP	Bangalore	A			
20	ONLINE DISSOLVED GAS ANALYSER	III				GE Kelman Ltd	UK	A			
						Qualitrol (Serveron)	USA	A			
						A-eberle	Germany	A			
						Morgan Scehaffer	Canada	A			
						NLCOM	China	A			
						CIC (Conditions Apply)	Vadodara	A			
21	LT PVC COPPER WIRES	*				BIS Approved Makes		A			
22	UNIMPREGNATED DENSIFIED WOOD	*				Manufacturer approved sources		A			
23	NITRIL RUBBER GASKET	*				Manufacturer approved sources		A			
24	SRBC GASKET	*				Manufacturer approved sources		A			
25	AIR CELL	*				Manufacturer approved sources		A			
26	TERMINAL CONNECTOR	*				Manufacturer approved sources		A			
27	OIL/WATER FLOW INDICATOR	*				Manufacturer approved sources		A			
28	PRESSURE RELIEF VALVE	*				Manufacturer approved sources		A			
29	MAGNETIC OIL GAUGE					Manufacturer approved sources		A			
30	PRESSURE GAUGE	*				Manufacturer approved sources		A			
31	OTI/WTI (RTD/TYPE)	*				Manufacturer approved sources		A			
32	OFF LOAD TAP CHANGER					Manufacturer approved sources		A			
33	COOLING FAN & MOTOR ASSEMBLY	*				Manufacturer approved sources		A			
34	ROLLER ASSEMBLY	*				Manufacturer approved sources		A			
35	SILICA GEL BREATHER	*				Manufacturer approved sources		A			
36	GUN METAL/CAST IRON / BUTTERFLY VALVE / SLUDGE REMOVAL VALVE	*				Manufacturer approved sources		A			
37	GAS COLLECTING DEVICE	*				Manufacturer approved sources		A			

	PROJECT : NTPC BARH					LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (ANNEXURE-II)			DOC. NO.:	
	PACKAGE : Power Transformers(ICT)								REV. NO.:01	
	SUPPLIER : BHEL, Bhopal								DATE: 12/06/2020	
	CONTRACTOR NO :									
Sr. No.	Item	QP/ Insp Cat	QP No.	QP Sub. Schedule	QP Approval Schedule	Proposed Sub Supplier	Place	Sub Supplier Approval Status / Category	Sub Supplier Details Submission Schedule	Remark
38	MARSHALLING BOX	*				Manufacturer approved sources		A		
39	MARSHALLING BOX / RTCC COMPONENTS	Any make/model with VDE / CE / UL / CSA Marking Certification preferably from Third Party Agency or BIS Approval with CML Number is acceptable								

NOTE:

Note-1. SYSTEM SUPPLIERS/SUB-SUPPLIERS APPROVAL STATUS CATEGORY(SHALL BE FILLED BY NTPC)

A-For this items proposed vendor is acceptable to NTPC.To be indicated with letter "A" in the list along with condition of approval,if any

Note-2. QP / INSPN CATEGORY

CAT-I :For these items the Quality Plans approved by NTPC & final acceptance will be on physical inspection witness by NTPC

CAT-II :For these items the Quality Plans approved by NTPC.However no physical inspection shall be done by NTPC.The final acceptance by NTPC shall be on basis of documents as per approved QP

CAT-III :For these items Main supplier approves the Quality Plans.The final acceptance by NTPC shall be on basis of certificate of conformance by the main supplier.

* :Control measure of item covered in quality plan of main item.

Note-3. UNITS/WORKS : Place of manufacturing/ Place of Main Supplier of multi units/ works.

PREPARED BY:

SATYENDRA KUMAR SINGH
DY. ENGINEER/QA-TCB

REVIEWED BY:

ABHISHEK KUMAR SHARMA
MANAGER / QA-TCB

satyendrasingh

From: Ravi Shekhar <ravishekhar@ntpc.co.in>
Sent: 01 July 2020 11:45
To: satyendrasingh
Cc: Rajeev Ranjan; a mittal; aksharma1@bhel.in; achandra@bhel.in; Prabir Kumar Paul प्रबीर कुमार पॉल; Chinmoy Sarkar चिन्मय सरकार; Bhaswati मुखर्ज; K Ranjan के रंजन; Pankaj Kumar Khanra पंकज कुमार खानरा
Subject: Re: Request for approval of vendors for GPICC and Maintenance free Breather for supply of 4 X 200 MVA ICT.

Dear Sir,

Please Refer following comments from our SSC- ER-I, QA department regarding your sub-vendor proposal in the trailing mail:

'Sub-vendors proposed by M/s BHEL may be accepted, **except M/s Eaun-MR Tap Changers (P) Ltd, Chennai** for Regenerative / Maintenance free breathers as the same is not approved by CQA as on date.'

This for your information and further necessary action pls.

Regards,

Ravi Shekhar
Sr. Manager(O&M/EMD)
NTPC Limited
Kahalgau

----- Original Message -----

From: "satyendrasingh" <satyendrasingh@bhel.in>
To: "Ravi Shekhar" <ravishekhar@ntpc.co.in>
Cc: "Rajeev Ranjan" <rajeev.ranjan@bhel.in>, "a mittal" <a.mittal@bhel.in>, aksharma1@bhel.in, achandra@bhel.in, "Prabir Kumar Paul प्रबीर कुमार पॉल" <pkpaul01@ntpc.co.in>, "Chinmoy Sarkar चिन्मय सरकार" <csarkar@ntpc.co.in>, "Bhaswati मुखर्ज" <bhaswatimukherjee@ntpc.co.in>, "K Ranjan के रंजन" <kanishkaranjan@ntpc.co.in>, "Pankaj Kumar Khanra पंकज कुमार खानरा" <pkkhanra@ntpc.co.in>
Sent: Tuesday, June 30, 2020 11:34:50 AM
Subject: Request for approval of vendors for GPICC and Maintenance free Breather for supply of 4 X 200 MVA ICT.

****Security Advisory: This Email has been sent by a Non-NTPC mail ID from Internet. The Actual sender determined by Security Gateway is [satyendrasingh@bhel.in]. Please do not click links contained in this mail or open attachments unless you recognise the source of this email and know the content is safe. **** Dear sir,

Reference: Approved vendor list against subjected order for supply of 4 X 200 MVA ICT.

A) This is to bring in your kind notice that in approved vendor list PICC (Paper insulated copper conductor) and CTC (Continuously Transposed conductors) are approved for making windings of ICTs, whereas as per design of the ICTs winding is to be made by GPICC (Glued Paper insulated copper conductor). Therefore we propose the following vendors for approval.

1) M/s ASTA ELEKTRODRAHT GMBH, Austria

- 2) M/s KSH INTERNATIONAL PVT.LTD, Pune
- 3) M/s SHREE CABLES & CONDUCTORS (P) LTD, Bhopal
- 4) M/s SAM DONG CO. LTD, Korea

The above vendors are already approved for CTC.

B) Similarly Vendors for Silica gel breather were approved in Vendor list whereas Regenerative/ Maintenance free breathers are be provided with ICTs. Therefore we propose following vendors for approval.

- 1) M/s ABB SPA, Italy
- 2) M/s EASUN-MR TAP CHANGERS (P) LTD, Chennai
- 3) M/s MESSKO GMBH, Germany

It is requested to kindly extend your approval to the above vendors.

धन्यवाद / Thanks,

सत्येन्द्र कुमार सिंह/Satyendra Kr. Singh.
उप अभियंता (गु. आ.) /Dy. Engineer (QA)
बी एच ई एल, भोपाल/BHEL, BHOPAL.
कार्यालय/(Office) : 07552505063
Mob: +91-9770003861

-----Original Message-----

From: Ravi Shekhar [mailto:ravishekhar@ntpc.co.in]

Sent: 24 June 2020 15:00

To: satyendrasingh <satyendrasingh@bhel.in>

Cc: Rajeev Ranjan <rajeev.ranjan@bhel.in>; a mittal <a.mittal@bhel.in>; Ajay Kumar Arya-HEP <akarya@bhel.in>; aksharma1@bhel.in; Shri Kumar-HEP <somendra@bhel.in>; achandra@bhel.in; Prabir Kumar Paul प्रबीर कुमार पॉल <pkpaul01@ntpc.co.in>; Chinmoy Sarkar चिन्मय सरकार <csarkar@ntpc.co.in>; Bhaswati मुखर्ज <bhaswatimukherjee@ntpc.co.in>; K Ranjan के रंजन <kanishkaranjan@ntpc.co.in>; Pankaj Kumar Khanra पंकज कुमार खानरा <pkkhanra@ntpc.co.in>

Subject: Re: Reply from NTPC for Vendor list for supply of 4 X 200 MVA ICT

Dear Sir,

Competent authority has accorded approval of your submitted 'Revised Vendor list (Rev 01)'.
This is for your information and further necessary action please.

Regards,

Ravi Shekhar
Sr. Manager(O&M/EMD)
NTPC Limited
Kahalgaon
Mob- 09650992115

----- Original Message -----

From: "satyendrasingh" <satyendrasingh@bhel.in>

To: ravishekhar@ntpc.co.in