

कार्यालय अधीक्षण अभियन्ता विद्युत 765/400 केवी० उपकेन्द्र परिकल्पना मंडल-II उ०प्र० पावर ट्रान्समिशन कारपोरेशन लिमिटेड 11 वां, तल, शक्ति भवन विस्तार 14, अशोक मार्ग लखनऊ- 226001 दूरभाष सं. - 0522-4001129, 2218683 E-mail - se400sdc@upptcl.org		Office of the Superintending Engineer Electricity 765/400 KV S/S Design Circle-II U.P. Power Transmission Corporation Ltd., 11th Floor, Shakti Bhawan Extension, 14, Ashok Marg, Lucknow-226001 Telephone NO - 0522-4001129, 221 8683 E-mail - se400sdc@upptcl.org
--	---	--

No. 378 /ESD-8/103/QAP/ Vendor List

Dated: April 17, 2018

Sub: Approval of QAP and vendor list of 400/220/33 kV, 500 MVA Transformers against tender specification no. ESD-8/103 .

M/s Bharat Heavy Electricals Limited,
Regional Operations Division
B-2 , 1st Floor, Picup Bhawan
Gomti Nagar, Lucknow

Dear sirs,

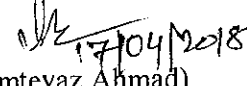
With reference to the subject above, please refer your letter no. RE-17E-LKO-021/LOI dated 17.04.2018 vide which Quality Assurance Plan and vendor list have been submitted for our approval . In this connection, it is to intimate that Quality Assurance Plan and vendor list have been approved with some correction, a copy of the same is being enclosed herewith for further necessary action at your end.

It is also requested to submit 1% security bank guarantee at the earliest to this office for further necessary action.

The approval of the above documents does not absolve you of your responsibility to supply the equipment as per the technical specifications and relevant standards. You are not relieved of your contractual obligation and responsibilities towards weights, qualities , designs, details, assembly fits, performance particulars and conformity of the supplies against tender specifications/contract.

Thanking you.

Yours faithfully


(Imteyaz Ahmad)

Superintending Engineer

CC:

1. Chief Engineer (765 kV DU), UPPTCL, 13th floor Shakti Bhawan Extension, Lucknow.



BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QA/TCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO.: 67038A 51201

Page 1 of 8

Cl. No.	Component/Operation	Characteristics	Cl. of a s s	Type of Check	Quantity of check	Reference doc/Acceptance norms	Form at of record	Agency	Remarks

TRANSFORMER TANK AND CONSERVATOR (DURING FABRICATION):

1	Raw material (Steel Plates)	a) Chemical Composition, Mechanical properties, Dimensional Check	M	T, M	Sample/ Mett/lot	BHEL Drawing & AA10108/	TC	P	V
1.1									
1.2	Welding requirement	a) Use of BHEL's Qualified Welders & WPS and PQR b) Welding electrodes type	M	RR	100%	WPS based on ASME Sec. IX	TC	P	V
1.3	Weld Quality	a) Visual and Dimensional checks of weld joints b) UT/RT for Butt-joint on bottom tank c) Rim flatness of tank	M	V	100%	WPS based on ASME Sec. II	TC	P	V
1.4	NDT on tank	a) DP test on load bearing members (Jacking pads, Bollard, Haulage lugs) and leakage joints	M	T	100%	BHEL spec/Drg.	TC	P	V
1.5	Final Inspection	a) Visual & Final Dimension	M	M	100%	BHEL Drg.	TC	P	V
1.6	Leakage test on tank	a) Leakage test (leak proofness at normal pressure plus 35 kpa for tank for 1 hr minimum) and measurement of permanent deflection of tank	M	T	100%	BHEL spec/Drg.	TC	P	V
1.7	Leakage test on conservator	a) Leakage test (leak proofness at normal pressure plus 35 kpa for tank for 1 hr minimum) and measurement of permanent deflection of tank	M	T	100%	MTI	TC	P	V
1.8	Vacuum Test on Tank	a) Vacuum test (vacuum withstand at an internal pressure of 25 torr max. for 1 hr and deflection measurement)	M	T	100%	MTI	TC	P	V
1.9	Surface cleaning & Painting inside and outside	a) Shot blasting, painting adhesion, DFT, Shade and Visual check	M	V, M	100%	TR 10015T/BHEL Drawings TR10005P-Sr No 22/BHEL Drawings	TC	P	V

Category of responsibility: P - Perform, V - Verify, W - Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL appointed inspection agency

TR = test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Deptt.

A = Critical

B = Major

C = Minor

SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL

TSD = Technical Services Deptt. Of BHEL

TFX = Traffic & Dispatch Deptt.

RR

QC

TCB

TTG

CHP

CITS

= Record Review

= Quality Control Deptt. Of BHEL

= Transformer, Capacitor And Bushing Deptt. Of BHEL

= Transformer Test Group Of BHEL

= Customer Hold Point

= Customer inspection Test schedule

Office of the Superintending Engineer
Electricity Supply Substation Design
Up Power Transmission Corporation Limited
11th Floor, Shakti Bhawan Extn. Lucknow

APPROVED

SE

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
 CUSTOMER: M/s UPPTCL
 PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
 BHEL QAP NO: QAT/CBI/31/1236 Rev 00 Dated: 17/04/2018
 BHEL WO NO.: 67038A 51201

Page 2 of 8

Cl. No.	Component/Operation	Characteristics	Cl. Type of Check	Quantity of check	Reference doc/Acceptance norms	Form at of record	Agency	Remarks
							M C N	

PIPE WORKS:								
2	Raw material	a) Chemical Composition, Mechanical properties, Dimensional Check	M	Sample/lot	IS3589/IS1239-1/BHEL Drg/Spec /BHEL Drawing	TC	P V V	V
2.1	Air leakage test on pipes	b) Air pressure testing at 4Kg/Sq. Cm for 15 Min	M	100%		TC	P V V	V
2.2	Surface cleaning & Painting inside and outside	a) Shot blasting, DFT, painting adhesion, DFT, Shade and Visual check	M	100%	MGA/BHEL Drawing	TC	P V V	V
3	CORE:							
3.1	Raw material-CRGO steel	a) Grade, Dimension and Finish, Mechanical (Ductility/Bend Test, Stacking Factor), Electrical (Total Specific loss, Surface resistivity and Magnetic permeability test, Total Specific loss on aged Specimen (type test))	M	One Sample/Lot/Grade	BHEL Drg/AA25716/BP1 0987/BP10988/BP 10984/BP10985/A A10914	TC	P V V	V
3.2	Core Building	a) Lamination thickness & size, Dia over resiglass tape, Slack Height, Yoke bolt tightness, Visual checks on build core	M	100%	BHEL Drawing	TC	P V	W
3.3	Test on core	a) Isolation 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	M	100%	BHEL Spec. TR10129I	TC	P V	W
4	INSULATING MATERIAL:							
4.1	PRESS BOARD (Stock item)	Density, Oil absorption, Moisture content, Shrinkage in air, Tensile /Flexural Strength, Compressibility Electrical Strength, PH value, conductivity, ash content	M	One sample per thickness	AA21108/AA21105 / AA21109/AA21101 / TRE 184/TRE 185	TC	P V V	V
4.2	SYNTHETIC RUBBER BONDED CORK SHEET (Stock item)	Hardness, Tensile strength, Compressibility, Recovery, Compression set, Flexibility, Ageing in Oil, Side flow, Density	M	1 sample /lot	AA59802	TC	P V V	V

Category of responsibility: P - Perform, V - Verify, W - Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL appointed inspection agency
 TR = Test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Deptt.
 A = Critical
 B = Major
 C = Minor
 SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL
 TSD = Technical Services Deptt. Of BHEL
 TFX = Traffic & Despatch Deptt.

RR = Record Review
 QC = Quality Control Deptt. Of BHEL
 TCS = Transformer, Capacitor And Bushing Deptt. Of BHEL
 TTG = Transformer Test Group Of BHEL
 CHP = Customer Hold Point
 CITS = Customer inspection Test schedule

APPROVED
 [Signature]
 [Stamp: BHEL Bhopal]
 [Stamp: 11th Floor, Shakti Bhawan Extn. Lucknow]
 [Stamp: 11th Floor, Shakti Bhawan Extn. Lucknow]
 [Stamp: 11th Floor, Shakti Bhawan Extn. Lucknow]



BHEL WO NO.: 67038A 51201

Cl. No.	Component	Operation
1	1.1	1.1.1
2	2.1	2.1.1
3	3.1	3.1.1
4	4.1	4.1.1
5	5.1	5.1.1
6	6.1	6.1.1
7	7.1	7.1.1
8	8.1	8.1.1
9	9.1	9.1.1
10	10.1	10.1.1
11	11.1	11.1.1
12	12.1	12.1.1
13	13.1	13.1.1
14	14.1	14.1.1
15	15.1	15.1.1
16	16.1	16.1.1
17	17.1	17.1.1
18	18.1	18.1.1
19	19.1	19.1.1
20	20.1	20.1.1
21	21.1	21.1.1
22	22.1	22.1.1
23	23.1	23.1.1
24	24.1	24.1.1
25	25.1	25.1.1
26	26.1	26.1.1
27	27.1	27.1.1
28	28.1	28.1.1
29	29.1	29.1.1
30	30.1	30.1.1
31	31.1	31.1.1
32	32.1	32.1.1
33	33.1	33.1.1
34	34.1	34.1.1
35	35.1	35.1.1
36	36.1	36.1.1
37	37.1	37.1.1
38	38.1	38.1.1
39	39.1	39.1.1
40	40.1	40.1.1
41	41.1	41.1.1
42	42.1	42.1.1
43	43.1	43.1.1
44	44.1	44.1.1
45	45.1	45.1.1
46	46.1	46.1.1
47	47.1	47.1.1
48	48.1	48.1.1
49	49.1	49.1.1
50	50.1	50.1.1
51	51.1	51.1.1
52	52.1	52.1.1
53	53.1	53.1.1
54	54.1	54.1.1
55	55.1	55.1.1
56	56.1	56.1.1
57	57.1	57.1.1
58	58.1	58.1.1
59	59.1	59.1.1
60	60.1	60.1.1
61	61.1	61.1.1
62	62.1	62.1.1
63	63.1	63.1.1
64	64.1	64.1.1
65	65.1	65.1.1
66	66.1	66.1.1
67	67.1	67.1.1
68	68.1	68.1.1
69	69.1	69.1.1
70	70.1	70.1.1
71	71.1	71.1.1
72	72.1	72.1.1
73	73.1	73.1.1
74	74.1	74.1.1
75	75.1	75.1.1
76	76.1	76.1.1
77	77.1	77.1.1
78	78.1	78.1.1
79	79.1	79.1.1
80	80.1	80.1.1
81	81.1	81.1.1
82	82.1	82.1.1
83	83.1	83.1.1
84	84.1	84.1.1
85	85.1	85.1.1
86	86.1	86.1.1
87	87.1	87.1.1
88	88.1	88.1.1
89	89.1	89.1.1
90	90.1	90.1.1
91	91.1	91.1.1
92	92.1	92.1.1
93	93.1	93.1.1
94	94.1	94.1.1
95	95.1	95.1.1
96	96.1	96.1.1
97	97.1	97.1.1
98	98.1	98.1.1
99	99.1	99.1.1
100	100.1	100.1.1

Page 3 of 8

Category of responsibility: P - Perform, V - Verify, W - Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TSU = Technical Services Dept.
TFX = Traffic & Despatch Dept.

APPROVED

28

ncy, N = customer

10/11/2011

contractor, C =

M = manufacture

m, V - Verify, W - Write

of responsibility: P

8



BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QA/TCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO: 67038A 51201

Page 4 of 8

Cl. No.	Component/Operation	Characteristics	Cl. a s	Type of Check	Quantity of check	Reference doc/Acceptance norms	Form at of record	Agency	Remarks
5.3	Winding of Coil	a) Brazing procedure & Brazer qualification b) Brazed joints- visual check e) Leads & coil identification/markings, Megger test between strands of bunched conductors, Continuity test b/n conductors	M M M	RR V V	100% 100% 100%	BP0631199 / ASME Sec IX BP0631199 BHEL Drg	TC TC	P P P	V V V
6	CORE AND WINDING ASSEMBLY	a) Visual check for correctness of complete assembly including Terminal gear connections, Smooth operation of OCTC, Electrical clearances on HV & LV Side b) Ratio resistance, magnetic, balance and magnetising current tests c) ISOLATION test at 2 KV for one minute between i) Core & Yoke Bolts, ii) Core & Clamps, iii) Core Clamps & Yoke Bolts.	M M M	V T T	100% 100% 100%	BHEL Drg TR10129I TR10129I	TC TC TC	P P P	V V V
7	TRANSFORMER TREATMENT PROCESS	a) Drying, oil impregnation soaking - 1st process b) Servicing (visual inspection of active part, tightening of all joints, clamping, bracing, etc) c) Drying, oil impregnation- 2nd process	M	M, T	100%	BHEL Spec TR 10266P	TC TC TC	P P P	V V V
7	FITTINGS AND ACCESSORIES	Routine tests:- Mechanical tests, Sequence tests, Auxiliary circuits insulation test, Pressure and vacuum tests Rating and Creepage distance	M	T V, M	100% 100%	BHEL SPEC:- 8488/IEC600214-1 Approved OGA/Drg	TC TC	P P	V V

Category of responsibility: P - Perform, V - Verify, W - Witness, M - manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report Issued by BHEL supplier / BHEL appointed inspection agency
TR = test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or
A = Critical
B = Major
C = Minor
SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL
TSD = Technical Services Deptt. Of BHEL
TFX = Traffic & Despatch Deptt.

RR = Record Review
QC = Quality Control Deptt. Of BHEL
TCB = Transformer, Capacitor And Bushing Deptt. Of BHEL
TTC = Transformer Test Group Of BHEL
CHP = Customer Hold Point
CITS = Customer inspection Test schedule

SE

EE

AE

APPROVED





BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

GAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QATCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO: 67038A 51201

Page 5 of 8

Cl. No.	Component/ Operation	Characteristics	Cl a s s	Type of Check	Quantu m of check	Reference doc/Acceptance norms	Form at of recor d	Agency	Remarks
			M	T	100%	IEC 60137 / IS: 2099 / IS: 12676/Approved OGA/Drig IS:3637 / TR200538 IS:3637 / TR200538/TR1017 3B IS 2705/ IEC 44 - 1 TR10123T	TC	P	V
7.3	Bucchoitz Relay (Stock item)	Routine tests: Measurement of tan delta and capacitance at ambient temperature, Measurement of partial discharge quantity, Dry power frequency voltage withstand test, Tests on the test tap insulation, Tightness test for internal leakage Type, Size & Make	M	V	100%		TC	P	V
7.4	Bushing (Stock item)	Routine test:- Porosity test, HV and IR test, Dielectric test at 2 kV for 1 minute, Elements test, Loss of oil and surge test, Gas volume test CT	M	T	100%		TC	P	V
7.5	WT/OTI (Local & Remote) (Stock item)	a) Calibration test, HV test at 2 kV for one minute.	M	T	100%		TC	P	V
7.6	Pressure relief valve (Stock item)	b) Accuracy test for indication and switch setting scales, Test for adjustability of switch setting, Test for switch rating.	M	T	1 instrument/lot or batch		TC	P	V
7.7	Air Cell (Flexible Separator) (Stock item)	a) Visual & dimensional check, Leakage test at 75% of operating pressure for 1hr. b) Indication flag operation and switch operation, Dielectric test at 2 kV for one minute, Switch contact testing at 5 A 240V AC. a) Routine test on basic fabric, oil side coating compound, air side under coating compound, air side outer coating compound & coated fabric	M	V.M. T	100%		TC	P	V
			M	T	100%	TR20001V	TC	P	V
			M	T	100%	TR20001V	TC	P	V
			M	T	100%	TR 20038 A/ TR 10150 A/ BHEL Electricity 400KV PO Office of the Superintending Engineer UP Power Transmission Design 11th Floor, Shakti Bhawan, Extn. Loc.	TC	P	V

Category of responsibility: P - Perform, V - Verify, W - Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL appointed inspection agency
TR = test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Dept.
A = Critical
B = Major
C = Minor
SOR = Switchgear, Control gear & Rectifier Deptt. Of BHEL
TSD = Technical Services Deptt. Of BHEL
TFX = Traffic & Dispatch Deptt.

RR = Record Review
QC = Quality Control Deptt. Of BHEL
TCB = Transformer, Capacitor And Bushing Deptt. Of BHEL
TIG = Transformer Test Group Of BHEL
CHP = Customer Hold Point
CITS = Customer inspection Test schedule

APPROVED
AE
EE



BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QAT/TCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO.: 67038A 51201

Page 6 of 8

Cl. No.	Component/Operation	Characteristics	Cl. a s s	Type of Check	Quantity of check	Reference doc/Acceptance norms	Form at of record	Agency	Remarks
			M	T, M	100%		TC	P	V
7.8	MOLG (Stock item)	b) Surface finish of completed air cell & dimension check c) Routine test - Ten times inflation & deflation at 10 K pa & pressure test at 10 K pa for 24 hrs. B) Type test - Oil side coating air side under coating, air side outer coating & coated fabric. visual & Dimensional check, Calibration check for ¼ 35 degreeC ¾ & full level on gauge, switch operation & 2 KV test for 1 minute between terminals to earth Test for oil levels, Switch operation for low level alarm. Switch contact test at 5A 240V AC, Dielectric test at 2 kV for 1 minute. a) Visual check, dimensions, b) Pressure Test	M	T	100%	TR 20041 O	TC	P	V
7.9	Oil Level Indicator (Stock item)		M	T	100%	TR 20068 I	TC	P	V
7.10	Silica gel Breather (Stock item)		M	V, M	100%	TR 20040 B	TC	P	V
7.11	Oil Pumps and Motor Set (Stock item)		M	T	100%	TR 10023 P	TC	P	V
7.12	Cooling Fans and Motor assembly (Stock item)		M	V, T	100%	TR 20029 F	TC	P	V

Category of responsibility: P - Perform, V - Verify, W - Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL appointed inspection agency

TR = test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Deptt.

A = Critical V = Visual RR = Record Review

B = Major M = Measurement QC = Quality Control Deptt. Of BHEL

C = Minor T = Test TCB = Transformer, Capacitor And Bushing Deptt. Of BHEL

SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL

TSD = Technical Services Deptt. Of BHEL

TFX = Traffic & Despatch Deptt.

Customer Hold Point

Customer inspection Test schedule

APPROVED

AE

EE

SE





**BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)**

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QA/TCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO.: 67038A 61201

Page 7 of 8

Cl. No.	Component/ Operation	Characteristics	Cl a s s	Type of Check s	Quantu m of check	Reference doc/Acceptance norms	Form at of recor d	Agency	Remarks
7.13	Radiator/Cooler	Air pressure testing of radiators	M	T	100%	TR10086R		P	V
7.14	Marshalling Box	Painting adhesion, DFT, Shade and Visual check	M	M	100%	TR10005P/Cust. Spec	TC	P	V
		a) Degree of protection (type test)	M	T	1 Per Type	IS2147	TC	P	V
		b) HV test at 2 KV for 1 Min.	M	T	100%	TR10079 I	TC	P	V
		c) Functional test of electrical control operation, interlocks and sequence of operation. Verification of Wiring	M	T	100%	As per applicable scheme	TC	P	V
		d) Mechanical operation of Equip/Switches, Contractor etc	M	T	100%	TR 10079 I	TC	P	V
7.15	Pressure Gauge (Stock item)	e) Painting of inside and outside surfaces (DFT, Shade)	M	T	100%	TR 10005 P	TC	P	V
		Dimensions, Accuracy check (calibration)	M	T	100%	TR 20007 P	TC	P	V
7.16	Valves - Valves- Gunmetal/ CI (Gate/ Globe) Butterfly (Stock item)	Dimensional check. Type, Size & Make, Leakage Test (Hydraulic test for Body and Seat)	M	V.M	100%	TR 20036 V/ TR 20037 V/ TR 20034 V/ TR 20020 V	TC	P	V
		Dimensional check. Surface Finish. Acceptance tests	M	V.M. T	100%	IS 5561/ BHEL Drgs	TC	P	V
7.17	Terminal Connector (Stock item)	Dimensions, Mechanical properties, Chemical Properties	M	V.T	1 sample/l ot	BHEL Drawings & TR 20005R	TC	P	V
7.18	Roller Assembly (Stock item)					Electricity 400KV Substation Design UP Power Transmission Corporation Ltd 11th Floor, Shakti Bhawan Extn. Lucknow			

Category of responsibility: P - Perform, V - Verify, W - Witness, M - Manufacturer / sub-contractor, C - contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL a appointed inspection agency

TR = test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Deptt.

A = Critical

B = Major

C = Minor

SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL

TSD = Technical Services Deptt. Of BHEL

TFX = Traffic & Despatch Deptt.

RR = Record Review

QC = Quality Control Deptt. Of BHEL

TCB = Transformer, Capacitor And Bushing Deptt. Of BHEL

TTG = Transformer Test Group Of BHEL

CHP = Customer Hold Point

CITS = Customer inspection Test schedule





BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
STANDARD MANUFACTURING QUALITY PLAN (MQP)

QAP FOR: 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER.
CUSTOMER: M/s UPPTCL
PROJECT: SUPPLY OF 4X500 MVA, 400/220/33KV, AUTO TRANSFORMER
BHEL QAP NO: QATCB/31/1236 Rev 00 Dated: 17/04/2018
BHEL WO NO.: 87038A 51201

Page 8 of 8

Cl. No.	Component/ Operation	Characteristics	Cl a s s	Type of Check	Quantu m of check	Reference doc/Acceptance norms	Form at of recor d	Agency	Remarks
								M C N	

FINAL TESTS									
8	Routine tests	Routine tests as per customer approved tests schedule.	M	V.M. T	100%	CITS	TC	P V W	CHP
8.1	Type tests	Type tests as per customer contractual requirement.	M	V.M. T	100%	CITS or sub- mission of type test Record of Equivalent Job	TC	P V W	CHP
9	PRESHIPMENT CHECKS	a) Nitrogen gas tightness check	B	T	100%	BHEL Drg./Std.	TC	P V V	
		b) Check on completeness of TRFR for shipping, Appearance, Mounting of Nitrogen gas regulator & Regularization of pressure and mounting of impact recorder	B	T	100%	BHEL Drg./Std.	TC		

NOTES:

- BHEL BPL WILL SUBMIT DETAILS OF TESTS WHICH ARE 'WITNESS' & 'CHP' CATEGORY AS PER TECHNICAL SPECIFICATION AND CUSTOMER INSPECTION TEST SCHEDULE FOR CUSTOMER.
- IN CASE OF DIFFERENCE BETWEEN BHEL DOCUMENT (SPEC, STD, DRG) & CONTRACT SPEC. OF THE CUSTOMER, THE LATER SHALL BE BINDING CONSIDERING DEVIATIONS MUTUALLY AGREED BETWEEN BHEL & CUSTOMER
- THE LATEST REVISION / EDITION / AMENDMENT OF BHEL SPECIFICATIONS, STANDARDS & BHEL DRAWINGS AND NATIONAL / INTERNATIONAL STANDARDS SHALL BE FOLLOWED.
- THE ITEMS APPEARING IN THIS QA PLAN BUT NOT APPLICABLE TO THE SPECIFIC DESIGN / CONTRACT MAY BE CONSIDERED AS OMITTED.

PREPARED BY:

ASHISH MOHAN TELGOTE
Sr. ENGINEER / QA-TCB

Office of the Superintending Engineer
Electricity 400KV Substation Design Circle
UP Power Transmission Corporation Limited
11th Floor, Shakti Bhawan Extn. Lucknow

AE

REVIEWED BY:

K. SHARMA
Sr. General Manager (QIR)
अपर महाप्रबन्धक (क.सं.बो.) / Quality Control-TCB
गुणता नियंत्रण-टी.सी.बो. / Quality Control-TCB
बी.एच.ई.एल., भोपाल / BHEL, BHOPAL

Category of responsibility: P = Perform, V = Verify, W = Witness, M = manufacturer / sub-contractor, C = contractor/nominated agency, N = customer

TC = Test Certificate / Inspection Report / Observation Report issued by BHEL supplier / BHEL appointed inspection agency
TR = Test reports issued by Technical Service Division / Transformer Test Group / Engineering Division Or Observation Report of BHEL QC / Production Deptt.
A = Critical V = Visual
B = Major M = Measurement
C = Minor T = Test
SCR = Switchgear, Control gear & Rectifier Deptt. Of BHEL
TSD = Technical Services Deptt. Of BHEL
TFX = Traffic & Despatch Deptt.
RR = Record Review
QC = Quality Control Deptt. Of BHEL
TCB = Transformer, Capacitor And Bushing Deptt. Of BHEL
TTG = Transformer Test Group Of BHEL
CHP = Customer Hold Point
CITS = Customer inspection Test schedule