



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
1	A. Section RAW MATERIAL INSPECTION - CT Insulators												
							E						
a	Routine Tests	Electrical	100%	IS : 5621 Clause:3.3	IS : 5621 Clause:3.3	EM register as per BSPTCL	B	K	P	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Verification of Dimensions	Measure	100% / E.M. one sample / lot	Relevant Drawing	Relevant Drawing	EM register as per BSPTCL	A	J	S	W		N	
c	Porosity Test	Mech.	IS 5621	IS : 5621 Clause:3.5	IS : 5621 Clause:3.5	EM register as per BSPTCL	B	K	P	W		N	
d	Temp. Cycle Test	Mech.	IS 5621	IS : 5621 Clause:3.6	IS : 5621 Clause:3.6	EM register as per BSPTCL	B	K	P	W		N	do
2	Transformer Oil												
							E						
a	Specific Resistivity	Electrical	IS 6855 / E.M. one sample / lot	IS 335 / IS 6103	IS 335 / IS 6103	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Tan Delta at 90°C	Electrical	IS 6855 / E.M. one sample / lot	IS 335 / IS 6262	IS 335 / IS 6262	EM register as per BSPTCL	A	J	S	W		N	
c	Dielectric Strength (BDV)	Electrical	IS 6855 / E.M. one sample / lot	IS 335 / IS 6792	IS 335 / IS 6792	EM register as per BSPTCL	A	J	S	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
d	Specific Resistance at 29 °C & 90 °C	Electrical	IS 6855 / E.M. one sample / lot	As per IS :335 / IS:6103	As per IS :335 / IS:6103	EM register as per BSPTCL	B	K	P	W		N	do
e	Density@ 29.5°C, Min.	Electrical	IS 6855 / E.M. one sample / lot	As per IS: 1448 (P-16)-1990	As per IS: 1448 (P-16)-1990	EM register as per BSPTCL	B	K	P	W		N	do
f	Kinematic Viscosity	Electrical	IS 6855 / E.M. one sample / lot	As per IS: 1448 (P-25)-1976	As per IS: 1448 (P-25)-1976	EM register as per BSPTCL	B	K	P	W		N	do
g	Flash Point PMCC, Min.	Electrical	IS 6855 / E.M. one sample / lot	As per IS: 1448 (P-21)-1992	As per IS: 1448 (P-21)-1992	EM register as per BSPTCL	B	K	P	W		N	do
h	Pour Point, Max.	Electrical	IS 6855 / E.M. one sample / lot	As per IS: 1448 (P-10)-1970	As per IS :1448 (P -10) / IS:1970	EM register as per BSPTCL	B	K	P	W		N	do
i	Neutralization Value	Electrical	IS 6855	As per IS: 1448 (P-2)-1967	As per IS: 1448 (P-2)-1967	EM register as per BSPTCL	B	K	P	W		N	do
j	Water Content, Max.	Electrical	IS 6855	As per IS: 13567-1992	As per IS: 13567-1992	EM register as per BSPTCL	B	K	P	W		N	do
k	Presence of oxidation inhibitor, % by weight	Electrical	IS 6855	As per IS: 13631-1992	As per IS: 13631-1992	EM register as per BSPTCL	B	K	P	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

	Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016		
	BSPTCL				Rev. No. 00	Valid Upto: Till Revision		
					Date: 02.01.2016	Page No. 1 of 17		
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes	Remarks
							1 2 3 4 5 6	
A. Section RAW MATERIAL INSPECTION - CT								
3 Copper Wire E								
a	Dimension	Measure	01sample/size per lot	IS 13730-2	IS 13730-2	EM register as per BSPTCL	A J S W	N Rev. of CM/EM TC during final insp. By BSPTCL
b	Mechanical Properties	Mechanical	01sample/size per lot	IS 13730-3	IS 13730-3	EM register as per BSPTCL	B K P W	N
c	Thermal Properties	Thermal	01sample/size per lot	IS 13730-6	IS 13730-6	EM register as per BSPTCL	B K P W	N
d	Chemical Properties	Chemical	01sample/size per lot	IS 13730-4	IS 13730-4	EM register as per BSPTCL	B K P W	N do
e	Electrical Properties	Electrical	01sample/size per lot	IS 13730-5	IS 13730-5	EM register as per BSPTCL	B K P W	N do
4 Cotton Covered Copper Rope E								
a	Visual	Visual	5 % Random	EM SPECIFICATIONS	Covering to be uniform with sufficient insulation	EM register as per BSPTCL	B K P W	N Rev. of CM/EM TC during final insp. By BSPTCL
b	Cross Section	Measure	01sample per lot	EM SPECIFICATIONS	No.of strands X cross section of each strand	EM register as per BSPTCL	B K P W	N
c	Resistance	Electrical	DO	EM SPECIFICATIONS	IS - 8130	EM register as per BSPTCL	B K P W	N
d	Purity of Copper	Chemical	DO	EM SPECIFICATIONS	Min. 99.90 %	EM register as per BSPTCL	B K P W	N do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL				Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
5 Insulation Crepe Paper							E						
a	Thickness	Measure	One sample per size per lot	EM SPECIFICATIONS	IS 9335 - 3- 3	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Hillcount	Measure	One sample per size per lot	EM SPECIFICATIONS	IS 9335 - 3- 3	EM register as per BSPTCL	B	K	P	W		N	
c	Substance	Measure	One sample per size per lot	EM SPECIFICATIONS	IS 9335 - 3- 3	EM register as per BSPTCL	B	K	P	W		N	
d	Elongation at break MD	Mechanical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	do
e	Ash Content	Mechanical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	do
Insulation Crepe Paper							E						
f	Moisture Content	Mechanical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	do
g	PH Value	Chemical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	
h	Conductivity	Electrical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer	Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016							
		BSPTCL		220 KV CT	Rev. No. 00	Valid Upto: Till Revision							
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
i	Tensile Strength	Mechanical	One sample per size per lot	EM SPECIFICATIONS	IS 9335-3-3	EM register as per BSPTCL	B	K	P	W		N	do
j	Visual	Visual	5 % Per Lot	EM SPECIFICATIONS	Free from Damage	EM register as per BSPTCL	B	K	P	W		N	do
k	Dimension	Measure	One sample per size per lot	EM SPECIFICATIONS	As per P.O.	EM register as per BSPTCL	B	K	P	W		N	do
6	Insulating Semi conducting Crepe Paper (Black)											E	
a	Visual	Visual	01 sample/ lot	EM SPECIFICATIONS	Free from Damage	EM register as per BSPTCL	B	K	P	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Dimension	Measure	01 sample/ lot	EM SPECIFICATIONS	0.45 mm to 0.55 mm	EM register as per BSPTCL	B	K	P	W		N	
c	Tensile Strength	Mechanical	01 sample/ lot	EM SPECIFICATIONS	12 lb Min.	EM register as per BSPTCL	B	K	P	W		N	
d	Elongation	Mechanical	01 sample/ lot	EM SPECIFICATIONS	50 % Min.	EM register as per BSPTCL	B	K	P	W		N	do
7	Insulating Aluminum Crepe Paper											E	
a	Visual	Visual	01 sample/ lot	EM SPECIFICATIONS	No sign of Oxidation	EM register as per BSPTCL	B	K	P	W		N	
b	Thickness	Measure	01 sample/ lot	EM SPECIFICATIONS	0.38mm±10 %	EM register as per BSPTCL	B	K	P	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL				Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
c	Tensile Strength	Mechanical	01 sample/ lot	EM SPECIFICATIONS	>60 N per15 mm width	EM register as per BSPTCL	B	K	P	W		N	
d	Elongation	Mechanical	01 sample/ lot	EM SPECIFICATIONS	45 - 55 %	EM register as per BSPTCL	B	K	P	W		N	
e	Density	Measure	01 sample/ lot	EM SPECIFICATIONS	0.45 G/Cm ³ ± 8 %	DO	B	K	P	W		N	
8 Secondary Terminal							E						
a	Visual	Visual	10 %/ lot	EM SPECIFICATIONS	Free from Damage	EM register as per BSPTCL	B	K	P	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Dimension	Measure	5 %/ lot	EM SPECIFICATIONS	As per Drawing	EM register as per BSPTCL	B	K	P	W		N	
c	Insulation Resistance	Electrical	2 %/ lot	EM SPECIFICATIONS	2 M Ohms Min.	EM register as per BSPTCL	B	K	P	W		N	
d	Dielectric Test	Electrical	2 %/ lot	EM SPECIFICATIONS	5 KV rms / 1Min.	EM register as per BSPTCL	B	K	P	W		N	do
9 Primary Terminal							E						
a	Visual	Visual	10 %/ lot	EM SPECIFICATIONS	Free from Damage	EM register as per BSPTCL	B	K	P	W		N	do
b	Dimension	Measure	5 %/ lot	EM SPECIFICATIONS	As per Drawing	EM register as per BSPTCL	B	K	P	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

	Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016							
	BSPTCL				Rev. No. 00	Valid Upto: Till Revision							
					Date: 02.01.2016	Page No. 1 of 17							
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
10	Core						E						
a	Visual / dimensions check	Measure	100%	As per BSPTCL Spec./ Drawing	As per BSPTCL Spec./ Drawing	EM register as per BSPTCL	A	J	S	W		N	do
b	Test at specified flux density for losses.	Electrical	100%	Within limit as per specified grade of Core/ BSPTCL Spec.	Within limit as per specified grade of Core/ BSPTCL Spec.	EM register as per BSPTCL	A	J	S	W		N	do
c	Ductility, Stacking Factor, Surface Insulation resistivity, Magnetic permeability	Electrical	200%	Within limit as per specified grade of Core/ BSPTCL Spec.	Within limit as per specified grade of CRGO / BSPTCL Spec.	EM register as per BSPTCL	A	J	S	W		N	do
11	Nitrogen Gas (99% Purity)						E						
a	Oxygen Content	Chemical	01 sample/lot of 50 cylinders or less%	As per BSPTCL Spec./ EM Specification	As per BSPTCL Spec./ EM Specification	Test Report	B	K	P	W		N	do
b	Moisture (Dew Point)	Mechanical	01 sample/lot	As per BSPTCL Spec./ EM Specification	As per BSPTCL Spec./ EM Specification	Test Report	B	K	P	W		N	do
12	MS Tanks						E						
a	Welding Procedure & Welding Qualification		100%	BSPTCL Spec.	BSPTCL Spec.		B	K	P	W		N	do
b	Welding Electrode Type		100%	BSPTCL Spec.	BSPTCL Spec.		B	K	P	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer	Vendor's Code:	Item:	M.Q.P. No.	017	Valid From:	15.01.2016					
		BSPTCL		220 KV CT	Rev. No.	00	Valid Upto:	Till Revision					
						Date:	02.01.2016	Page No.	1 of 17				
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
c	Leakage Test	Mechanical	100%	No Leakage at 30 P.S.I	No Leakage at 30 P.S.I	EM register as per BSPTCL	B	K	P	W		N	do
d	Dimensions	Measure	One sample per size per lot	As per approved drawings/ EM drawings	As per approved drawings/ EM drawings	EM register as per BSPTCL	A	J	S	W		N	do
12.1 Galvanising Checks							E						
a	Thickness of Zinc coating	Mechanical	5 Samples / Shift	IS 4759-1984/BSPTCL Spec.	IS 4759-1984/BSPTCL Spec.	EM register as per BSPTCL	B	K	P	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	Weight of Zinc coating	Mechanical	1 Sample / Shift	IS 4759-1984 /BSPTCL Spec.	IS 4759-1984 /BSPTCL Spec.	EM register as per BSPTCL	B	K	P	W		N	
c	Uniformity of Zinc coating	Chemical	1 Sample / Shift	IS 2633/BSPTCL Spec.	IS 2633/BSPTCL Spec.	EM register as per BSPTCL	B	K	P	W		N	do
d	Adhesion test	Mechanical	5 Samples / Shift	IS 2629/BSPTCL Spec.	IS 2629/BSPTCL Spec.	EM register as per BSPTCL	B	K	P	W		N	do
12.2 Painting Of Tanks													
a	Visual /Shade	Visual	1 Samples / lot	BSPTCL Spec./ EM	BSPTCL Spec./ EM	EM register as per BSPTCL	A	J	S	W		N	
b	Thickness	Measure	DO	DO	BSPTCL Spec. / 85 mic.	DO	A	J	S	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

	Customer	Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016								
	BSPTCL			Rev. No. 00	Valid Upto: Till Revision								
				Date: 02.01.2016	Page No. 1 of 17								
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	


13 <u>Rubber 'O' Ring</u>													E					
a	Dimensions	Measure	One sample per size per lot	As per Drawing	As per Drawing	EM register as per BSPTCL	A	J	S	W		N	do					
b	Hardness (Before & After agieng Test)	Mechanical	One sample per size per lot	As per IS : 3400 Part-II	As per IS : 3400 Part-II	EM register as per BSPTCL	B	K	P	W		N	do					
c	Elongation at break(Before & After agieng Test)	Mechanical	One sample per size per lot	As per IS : 3400 Part-I	As per IS : 3400 Part-II	EM register as per BSPTCL	B	K	P	W		N	do					
d	Aging in transformer oil at 100°C for 72 hrs.	Mechanical	One sample per size per lot	As per IS : 3400	As per IS : 3400	EM register as per BSPTCL	B	K	P	W		N	do					
e	Compression Set at 70 °C for 24 hrs	Mechanical	One sample per size per lot	As per IS : 3400 Part-X	As per IS : 3400 Part-X	EM register as per BSPTCL	B	K	P	W		N	do					
14 <u>Cork Gasket</u>													E					
a	Dimensions	Measure	One sample per size per lot	As per Drawing	As per Drawing	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL					

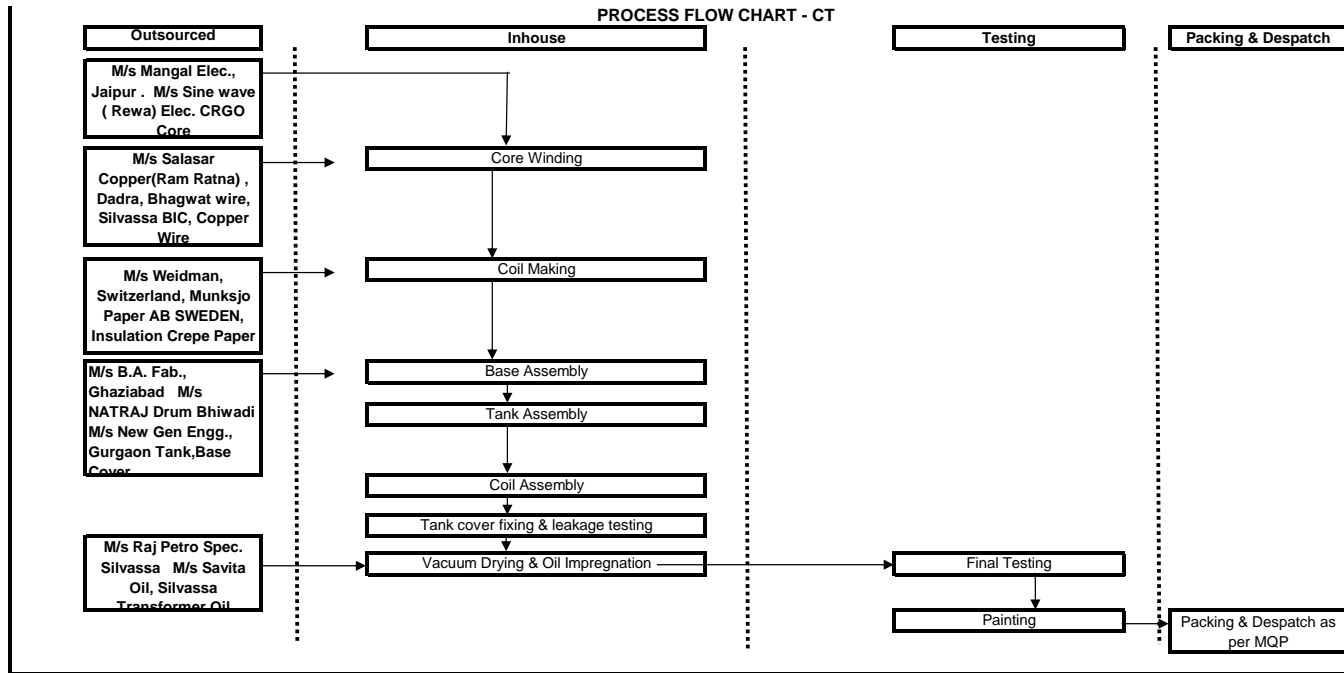


BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
b	Hardness	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
c	Tensile Strength	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
d	Compression Set at 100 °C for 70 hrs	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
e	Compressibility	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
f	Flexibility	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
g	Resistance to transformer oil at 100 °C for 70 hrs.	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do
h	pH of water extract	mechanical	One sample per size per lot	IS: 4253-Part II-1980	IS: 4253-Part II-1980	EM register as per BSPTCL	B	K	P	W		N	do

													
BIHAR STATE POWER TRANSMISSION COMPANY LIMITED													
MANUFACTURING QUALITY PLAN -- 220 KV CT													
		Customer		Vendor's Code:		Item:		M.Q.P. No. 017		Valid From: 15.01.2016			
		BSPTCL				220 KV CT		Rev. No. 00		Valid Upto: Till Revision			
								Date: 02.01.2016		Page No. 1 of 17			
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	





BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer	Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016							
		BSPTCL		220 KV CT	Rev. No. 00	Valid Upto: Till Revision							
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
B. Section INPROCESS INSPECTION - CT													
1 Primary Winding E													
a	Visual check, Dimension & Cleanliness of Primary conductor	Visual/Measurement	100%	As per sampling Plan IS 2500 Part 1	As per sampling Plan IS 2500 Part 1	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final Insp. By BSPTCL
b	Overlap of Insulation		100%	As per Plant Standard	As per Plant Standard	EM register as per BSPTCL	A	J	S	W		N	
2 Core Winding (Secondary) E													
a	Interturn Over Voltage test	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	do
b	Accuracy	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	do
3 Coil Insulation E													
a	Polarity Marking & Verification of Core Sequence	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final Insp. By BSPTCL
b	Secondary H.v Test	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	
c	Interturn Over Voltage test	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL				Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
4 CT Assembly							E						
a	Fitment of Primary Terminal	Mechanical	100%	As per Approved Drawing	As per Approved Drawing	EM register as per BSPTCL	A	J	S	W		N	do
b	Fitment of Bushing	Mechanical	100%	As per Approved Drawing	As per Approved Drawing	EM register as per BSPTCL	A	J	S	W		N	do
c	Secondary H.V.test	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	do
d	Verification of Accuracy Class	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	do
4 B. Section INPROCESS INSPECTION - CT							E						
4 CT Assembly							E						
e	Polarity Marking & Verification of Core Sequence	Electrical	100%	IS 2705	IS 2705	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
f	Leakage Test	Mechanical	100%	leakage testing is done on complete assembled unit at 30 psi to rule out any leakage.	leakage testing is done on complete assembled unit at 30 psi to rule out any leakage.	EM register as per BSPTCL	A	J	S	W		N	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL				Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
5 Vacuum Drying & Oil impregnation													E
a	Temperature of Oven		Hourly Reading		90-105 Deg C	LOG BOOK	A	J	S	W		N	do
b	Vacuum & vacuum Leakage	Electrical	12 Hourly		No Leakage	LOG BOOK	A	J	S	W		N	do
c	Measurement of Water in Vapor Condenser	Electrical	6 Hourly		No water for 6 hours in vapour condensor.	LOG BOOK	A	J	S	W		N	do
d	BDV of Insulating Oil used for impregnation of CT Electric Strength	Electrical	One sample/lot	As per BSPTCL spec./ EM specification	As per BSPTCL spec./ EM specification		D	L	V	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
C. Section FINAL INSPECTION & TESTING - CT													
1	<u>Routine Test</u>												
a	Verification of Terminal marking & Polarity	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
b	High voltage power frequency withstand test on primary winding.	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	
c	High voltage power frequency withstand test on secondary winding.(All cores to be tested seperatly)3kV for 1 min	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
d	Partial Discharge test	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
e	Accuracy Test -Ratio and phase angle error test on metering & protection class cores.	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
f	Resistance ,Kneepoint voltage ,Exciting Current measurement on special protection (Class PS) cores.	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT


		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
C. Section FINAL INSPECTION & TESTING - CT													
1 Routine Test													
g	Turns ratio measurement (Ratio error at no load)for special purpose protection (Class PS)cores.	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	Rev. of CM/EM TC during final insp. By BSPTCL
h	Interturn over voltage test (all cores will be tested seperatly)	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
i	Determination of composite error	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
j	Measurement of capacitance & tan delta at 10kV & Um/root3 kV.(applicable for 66 kv & above)	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	S	W		N	do
k	I.R. Measurement Between primary & secondary (Earth)	Electrical	100%	BSPTCL Specs / IS2705/IEC60044.1	Min 7000 M Ohms.	Test Report	A	J	S	W		N	do



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL				Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
2 Acceptance Test													
a	Verification of Terminal marking & Polarity	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
b	High voltage power frequency withstand test on primary winding.	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
c	Transformer Oil from CT After HV Test												
i	BDV Test (Min.)	Electrical	01sample /lot	60 kv	60 kv	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
ii	Tan Delta at 90°C Max. (Applicable for 66 kv & Above)	Electrical	01sample /lot	0.002 max.	0.002 max.	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
iii	Moisture Content (Max.) applicable for 132 kv & Above	Electrical	01sample /lot	IS 1866 /BSPTCL spec./10 ppm	IS 1866 /BSPTCL spec./10 ppm	EM register as per BSPTCL	A/D	J/L	V	Y		Y	C.I.P
iv	Specific resistivity @90°C (Min.) applicable for 132 kv & Above	Electrical	01sample /lot	1x10 ¹² Ohm CM	1x10 ¹² Ohm CM	EM register as per BSPTCL	A/D	J/L	V	Y		Y	C.I.P
v	Interfacial Tension(Min.) applicable for 132 kv & Above	Electrical	01sample /lot	0.03 N/m	0.03 N/m	EM register as per BSPTCL	A/D	J/L	V	Y		Y	C.I.P

		BIHAR STATE POWER TRANSMISSION COMPANY LIMITED											
		MANUFACTURING QUALITY PLAN -- 220 KV CT											
	Customer		Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016							
	BSPTCL				Rev. No. 00	Valid Upto: Till Revision							
					Date: 02.01.2016	Page No. 1 of 17							
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	


2 Acceptance Test													
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	1	2	3	4	5	6	Remarks
d	High voltage power frequency withstand test on secondary winding.(All cores to be tested seperatly)3kV for 1 min	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
e	Partial Discharge test	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
f	Accuracy Test -Ratio and phase angle error test on metering & protection class cores.	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
g	Resistance ,Kneepoint voltage ,Exciting Current measurement on special protection (Class PS) cores.	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
h	Turns ratio measurement (Ratio error at no load)for special purpose protection (Class PS)cores.	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
i	Interturn over voltage test (all cores will be tested seperatly)	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- 220 KV CT

		Customer		Vendor's Code:	Item:	M.Q.P. No. 017	Valid From: 15.01.2016						
		BSPTCL			220 KV CT	Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	
2 Acceptance Test													
j	Determination of composite error	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
k	Measurement of capacitance & tan delta at 0.3,0.7,1.0 & 1.1 Um/root3 kV.before & after HV Test applicable for 66 kv & above	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
l	Instrument Security Factor Test	Electrical	100% For 1st Lot	BSPTCL Specs / IS2705/IEC60044.1	BSPTCL Specs / IS2705/IEC60044.1	EM register as per BSPTCL	A	J	U	Y		Y	C.I.P
m	IR measurement between Primary & Secondary (Earth)	Electrical	100% For 1st Lot	BSPTCL Specs.	BSPTCL Specs.	Test Report	A	J	U	Y		Y	C.I.P
n	Painting Shade & Thickness Check	Measure	100% For 1st Lot	BSPTCL Specs./85 Micron Min.	BSPTCL Specs./85 Micron Min.	Test Report	A	J	U	Y		Y	C.I.P

		BIHAR STATE POWER TRANSMISSION COMPANY LIMITED											
		MANUFACTURING QUALITY PLAN -- 220 KV CT											
	Customer			Vendor's Code:	Item: 220 KV CT	M.Q.P. No. 017	Valid From: 15.01.2016						
	BSPTCL					Rev. No. 00	Valid Upto: Till Revision						
						Date: 02.01.2016	Page No. 1 of 17						
Sr. No.	Components / Operations & Description of Test	Type of check	Quantum of Check / Sampling with basis	Reference document for Testing	Acceptance Norms	Format of Record	Applicable Codes						Remarks
							1	2	3	4	5	6	

D. Section PACKING & DESPATCH - CT

1	N2 Gas Filling	Mechanical	100%	N2 is filled at 10 psi.	Pressure is observed after 1 hour. To check leakage		A	J	S	W		N	
2	Checking for completeness of the equipment and accessories including spares as per order.	Visual	100%	As per EM Process Specification	As per EM Process Specification		A	J	S	W		N	
3	Check for proper packing	Visual	100%	As per EM Process Specification	As per EM Process Specification		A	J	S	W		N	
4	Ensure supply of operation manual, packing list and test reports along with copy of inspection reports, CUIP and MICC	Visual	100%	As per EM Process Specification	As per EM Process Specification		A	J	S	W		N	