



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

MANUFACTURING QUALITY PLAN -- MCCB

		Customer	Vendor's Code	Item:	MQP No : 012	Valid From:	15.01.2016
		BSPTCL		MCCB	Rev. No. 00	Valid Upto:	Till Revision
					Date : 02.01.2016	Page: 1 of 12	

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	
Code 1	Indicates place where testing is planned to be performed i.e. Inspection Location			Code 2	Indicate who has to perform the tests i.e. Testing Agency								
A	At Equipment Manufacturer's works			J	The Equipment Manufacturer								
B	At Component Manufacturer's works			K	The Component Manufacturer								
C	At Authorised Distributor's place			L	The Third Party								
D	At Independent Lab			M	The Turnkey Contractor								
E	At Turn Key Contractor's location												
F	Not specified												
Code 3	Indicates place who shall witness tests i.e. Witnessing Agency			Code 4	Review of Test Reports/Certificates								
P	Component Manufacturer itself			W	By Equipment manufacturer								
Q	Component Manufacturer and Equipment Manufacturer			X	By Contractor during product/process inspection								
R	Component Manufacturer, Equipment Manufacturer and Contractor			Y	BY BSPTCL during product/process inspection								
S	Equipment Manufacturer itself			Z	By Contractor and/or BSPTCL during product/process inspection.								
T	Equipment Manufacturer and Contractor												
U	Equipment Manufacturer, Contractor and BSPTCL												
V	Third Party itself												
Code 5	Whether specific approval of sub-vendor / Component			Code 6	Whether test records required to be submitted after final inspection for issuance of Dispatch Clearance / Instructions								
E	All packing cases should be marked with BSPTCL LOA details, name of p			Y	Yes								
N	Envisaged			N	No								
	Not Envisaged												

One copy of test report, Dispatch Clearance / Instructions shall also be sent along with consignment.



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<p>NOTE:</p> <p>The MQP should be read in conjunction with BSPTCL specification and shall deem to include additional tests if any required as per the contract.</p>													
1	The MQP should be read in conjunction with BSPTCL specification and shall deem to include additional tests if any required as per the contract.												
2	BSPTCL specification shall include provisions of letter of Award, BSPTCL approved drawings /technical data sheet / BOM / test schedule / test procedure applicable to the specific contract.												
3	<p>In case of any contradiction between the manufacturer's plant standards, this MQP and BSPTCL specification following precedence shall be followed :-</p> <p>i) BSPTCL specification</p> <p>ii) This Manufacturing Quality plan.</p> <p>iii) Manufacturer's plant standards</p>												
4	It is the responsibility of the manufacturer to ensure that this document is readily available at their works, as well as at the works of their sub vendors in order to avoid any delay at the time of inspection.												
5	<p>The manufacturer shall ensure that their as well as their sub vendors control, metering & testing instruments are duly calibrated and should have calibration certificates traceable to Indian/International standards. Calibration records should be available during inspection by BSPTCL.</p> <p>Key testing instruments will be calibrated only by NABL accredited laboratories or manufacturer laboratories.</p>												
6	In case of any tests being carried out at third party lab, such lab / facility should be NABL accredited /accepted by BSPTCL												
7	The manufacturer shall maintain the proper co-relation of test certificates from raw material stage to finished product stage and the records should be available during inspection by BSPTCL.												
8	Manufacturer shall show the approval of BSPTCL engineering for all contract specific type tests, including specific type tests if any as per the BSPTCL specification at the time of final inspection.												
9	All packing cases should be marked with BSPTCL LOA details, name of project, item description and Dispatch Clearance / Instructions number by which material has been cleared for dispatch.												
10	One copy of test report, Dispatch Clearance / Instructions shall also be sent along with consignment.												

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BSPTCL

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11	Inspection of spare items ordered by BSPTCL shall also be governed by the provisions of this MQP. Items if not governed under MQP shall be offered for inspection as per BSPTCL specification / Relevant-Indian / International Specification												
12	The manufacturer shall align their quality system and that of their sub vendors to the requirements of latest ISO 9000 quality standards in a time bound Manner.												
13	The relevant details of plant standards and quality plan for different ratings are shown in attached Annexure.												
14	BSPTCL may review the effective implementation of the processes during the product inspection / process inspection in case any violation in process or process parameters are observed, the reason along with corrective & preventive measures shall be conveyed to BSPTCL within 2 weeks.												
	EM : Equipment Manufacturer			CM: Component Manufacturer									
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A	RAW MATERIAL/COMPONENTS INSPECTION:												
1.0	COPPER STRIPS												
1.1	Dimensions	Measurement	One sample from each Lot	BSPTCL specification	BSPTCL specification	BSPTCL Record	A	J	S	W	N	N	
1.2	Conductivity	Electrical	One sample from each Lot	BSPTCL specification	BSPTCL specification min conductivity 97.0 IACS	BSPTCL Record	A	J	S	W	N	N	
1.3	Cleanliness & Surface Smoothness (Visual Check)	Visual	5% on each lot	As per EM specification The strips shall be bright and clean. It shall be free from blisters, scale, fins, spills cracks and other defects.	As per EM specification The strips shall be bright and clean. It shall be free from blisters, scale, fins, spills cracks and other defects.	BSPTCL Record	A	J	S	W	N	N	

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2.0	BRASS STRIP/COIL/SHEET:												
2.1	Dimensions	Meas.	One sample from each Lot	EM specification	As per EM specification	BSPTCL Record	A	J	S	W	N	N	
2.2	Conductivity	Elect.	One sample from each Lot	EM specification BSPTCL Specs	As per EM specification Power Grid Specs	BSPTCL Record	A	J	S	W	N	N	
2.3	Cleanliness & Surface Smoothness (Visual Check)	Visual	5% on each lot	As per EM specification The strips shall be bright and clean. It shall be free from blisters, scale, fins, spills cracks and other defects.	As per EM specification The strips shall be bright and clean. It shall be free from blisters, scale, fins, spills cracks and other defects.	BSPTCL Record	A	J	S	W	N	N	
<p>All packing cases should be marked with BSPTCL LOA details, name of project, item description and Dispatch Clearance / Instructions number by which material has been cleared</p> <p>One copy of test report, Dispatch Clearance / Instructions shall also be sent along with consignment.</p>													

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3.0	Plastic granules/chips: Arnite, Stanyl & Nylon PA6												
3.1	Type / Description	Visual	check the lot	As per vendor MTC	As per identity tag with packing bag & Bill data sheets	BSPTCL Record	A	J	S	W	N	N	
4.0	components:												
4.1	Fix Contact	measurement	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings	BSPTCL Record	A	J	S	W	N	N	
4.2	Fix Contact Tip			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.3	Fix Contact Packing			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.4	Arcing Horn			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.5	Arcing Horn Rivet			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.6	Cross bar 3P	measurement	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.7	Dolly	measurement	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings	BSPTCL Record	A	J	S	W	N	N	
4.8	Mechanism Plate- L&R			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.9	Dolly Support Guide Pin			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.12	Latch			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.13	Latch Pin			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.14	Dolly Support			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.15	Dolly Support Spring			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.16	Mech Pin			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	

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Components:													
4.17	Arc Chute R Plate	measurement	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings	BSPTCL Record	A	J	S	W	N	N	
4.18	Arc Chute L Plate			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.19	Arc Chute Bottom plate			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.2	Arc Chute Plate			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.21	Arc Chute Rivet			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.22	Arcing Flame Guide			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.23	Cross Bar Guide Bush			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.24	M6 Nut Cover			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.25	Aux Tripping Knob			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.26	Base bottom washer			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.27	Base Plug			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.28	Arc chute Barrier			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.29	Arc chute Barrier Cover			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.3	Top Cover			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.31	Phase Barrier			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.32	Base Moulding	measurement	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings	BSPTCL Record	A	J	S	W	N	N	
4.33	Brass Bush M4*6L			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.34	Hex Nut M6;8.8 grade			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.35	Switch	Elect.	As per Sampling Plan IS 2500	As per approved BSPTCL drawings	As per approved BSPTCL drawings	BSPTCL Record	A	J	S	W	N	N	
4.36	Alarm Switch support			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	
4.37	Self tapping Screw M2x13			As per approved BSPTCL drawings	As per approved BSPTCL drawings		A	J	S	W	N	N	

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							1	2	3	4	5	6	
5.0	INPROCESS INSPECTION OF MCCB:												
5.1	Surface finish and Sub Assy (Visual & Dimensional check)	Visual	Sub assy inspected 3Times per day	Process & Quality check sheet	Process & Quality check sheet Sub assy shall be ok and free from any defect	BSPTCL Record	A	J	S	W	N	N	
5.2	Riveting	Visual/Manual	Sub assy inspected 3Times per day	Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
5.3	SPOT WELDING	Manual	Sub assy inspected 3Times per day	Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	

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5.4	Fix Contact Assy. Dimensional & Visual	Visual/VC	Sub assy inspected 3Times per day	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
5.5	Cross Bar assembly Dimensional & Visual	Visual/VC	Sub assy inspected 3Times per day	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
5.6	Mechanism Assy. Dimensional & Visual	Visual/VC	Sub assy inspected 3Times per day	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
5.7	Arc Chute Assy. Dimensional & Visual	Visual/VC	Sub assy inspected 3Times per day	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	



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5.8	Base Assy.	Visual	Sub assy inspected 3Times per day	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
	Visual												
5.9	Cover Printing & Assy	Visual	Line inspection	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
	Visual												
5.10	Visual Check	Visual	100% visual inspection	As per Process & Quality check sheet	Process & Quality check sheet	BSPTCL Record	A	J	S	W	N	N	
	Visual												

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C.	FINAL INSPECTION & TESTING:																		
	6.0 ROUTINE TESTING																		
	6.1	Magnetic Hold/ Trip	Elect	100% inspection	As per BSPTCL spec.	As per BSPTCL spec.	BSPTCL Record	A	J	U	Y		Y	Dispatch Clearance / Instructions will be issued based on sample test by BSPTCL Sample=01 unit per type, all routine tests.					
	6.2	Thermal Test	Elect	100% inspection	As per BSPTCL spec.	As per BSPTCL spec.	BSPTCL Record	A	J	U	Y		Y						
	6.3 OPERATIONAL TEST																		
	6.3.A	10 Times ON & OFF	Manual	100% inspection	As per (IS/IEC-60947) Routine test instruction sheet	As per Routine test instruction sheet	BSPTCL Record	A	J	U	Y		Y	Conduct before contact resistance					
	6.3.B	Push to Trip at Max ON	Manual	100% inspection															
	6.3.C	Push to Trip at Max OFF	Manual	100% inspection															
	6.3.D	Push to Trip at Mini ON	Manual	100% inspection															
	6.3.E	Push to Trip at Mini OFF	Manual	100% inspection															
	6.4	HV Test	Elect	100% inspection	As per (IS/IEC-60947) Routine test instruction sheet	2.5kv for 1 sec	routine test report	A	J	U	Y		Y	Conduct before contact resistance					
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6.5		Contact Resistance	Elect	100% inspection	As per Routine test instruction sheet	As per EM Reference sheet	computerised test bench/Register report	A	J	U	Y		Y	Dispatch Clearance / Instructions will be issued based on sample test by BSPTCL Sample=01 unit per type, all routine tests.
7.0		PACKING & DISPATCH (Check for identification & packing)												
7.1		PRIMERY PACKING:	Visual	100.00%	As per BSPTCL instructions	As per BSPTCL	Register	A	J	U	Y		Y	
8.0		TYPE TESTS All type tests to be carried out as per IS/IEC 60947-2 specifications for BSPTCL Engineering Deptt. Approval.					Type Test Certificate							