

	<b>FIELD QUALITY PLAN FOR LT BUSDUCT (ERECTION &amp; COMMISSIONING)</b>	FQP NO.: QPX:STD:500:EL:65
		REV. No.: R00
		Sheet 1 / 1 Sheet

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### STATUS OF REVISIONS


<u>Sl.No.</u>	<u>Reference of Sheet(s) Revised</u>	<u>Revision No. &amp; Date</u>	<u>Remarks</u>
NIL			


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<b>AUTHORISATION FOR DIFFERENT CATEGORIES OF CHECKS</b>			
Classification of Check ----- Symbol      Description		Checking Authority	Accepting Authority
A	Critical	BHEL & Customer	Customer
B	Major	BHEL	HOS
C	Minor	BHEL	BHEL
<b>Legend</b>		Customer : Customer or any other agency authorised by customer.  BHEL : Concerned engineers of BHEL – Task Performer.  HOS : HEAD OF SECTION for BHEL	
<b>NOTE :</b>			
1. Quantum of check shall be 100% for all characteristics unless otherwise mentioned in reference documents.			
2. Customer shall witness A category checks. He is also authorised to carry out Surveillance in any of the B & C category of checks at his discretion.			
3. In case of non-conformity, accepting authority shall ensure dispositioning before accepting and the dispositioning shall be reflected in log sheets / protocols. Dispositioning of non-conformities to be authorised by Head/TSX with intimation to Head/Quality.			
4. Instruments with valid calibration to be used for measurements.			

	<p align="center">FIELD QUALITY PLAN FOR <b>LT BUSDUCT</b> (ERECTION &amp; COMMISSIONING)</p>	FQP NO.: QPX:STD:500:EL:65
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<b>STATEMENT OF CHECKS</b>		
<b>Capacity / Type</b> : <b>500 MW</b>		
<b>System</b> : <b>BUSDUCT</b>		
<b>Sub-System</b> : <b>LT BUSDUCT</b>		
<b>Area</b> : <b>ERECTION &amp; COMMISSIONING</b>		
<p>* For checks where log sheets are not called for, suitable records shall be maintained in the form of log book / protocols.</p> <p>* As an evidence of having carried out the work satisfactorily, a general-purpose log sheet L-00 shall be maintained for all the checks.</p> <p>* Abbreviations used in the column "Type of Check" are:</p> <p>R : Record Verification</p> <p>M : Measurement</p> <p>V : Visual</p>		

 PSER		FIELD QUALITY PLAN FOR <b>LT BUSDUCT</b> (STATEMENT OF CHECKS)				FQP NO.: QPX:STD:500:EL:65 REV.NO.: R00 SHEET 2 / 4 SHEETS		
SYSTEM: Busduct		SUB-SYSTEM: LT BUS DUCT		AREA: ERECTION				
SL NO.	CHARACTERISTICS / ITEM	TYPE OF CHECK	INSTRUMENT	CLASS	QUANTUM/ FREQUENCY OF CHECK	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	FORMAT OF RECORD	REMARKS
<b>1</b>	<b>ON RECEIPT CHECK :</b>							
1.1	Contents of crates against dispatch note	V/R		C	100%	Dispatch note & packing list		
2.1	Any physical damage occurred during transportation	V/R		C	-do-			
<b>2</b>	<b>STORAGE:</b>							
2.1	Ensure all items are stored in dry indoor place.	V/R		B	100%	Erection & functioning Manual		
2.2	Ensure place of storage is free from corrosive gases, water logging & dust.	V/R		B	100%	Erection & functioning Manual		
2.3	If bus ducts are stored for six months or monsoon season, then space heaters shall be put on to avoid condensation on insulators	V/R		A	100%	Erection & functioning Manual	Logbook	
<b>3</b>	<b>TRANSPORTATION &amp; HANDLING</b>							
3.1	Ensure slings are secured properly during handling	V		C	100%			
3.2	Ensure crate handling & transportation in a proper manner preferably by suitable crates.	V		C	100%			
3.3	Ensure that the handling tools & tackles like slings, manila ropes, pulleys etc. are free from damage	V		C	100%			
3.4	Ensure that proper tying, loading / packing on the vehicle/ transport	V		C	100%			
3.5	Ensure that proper unloading, positioning on an even surface at erection site.	V		B	100%			
3.6	Ensure that panels are vertically upright during transport, unloading & erection	V		C	100%			

 PSR		FIELD QUALITY PLAN FOR <b>LT BUSDUCT</b> (STATEMENT OF CHECKS)					FQP NO.: QPX:STD:500:EL:65  REV.NO.: R00  SHEET 3 / 4 SHEETS		
SYSTEM: Busduct		SUB-SYSTEM: LT BUS DUCT	AREA: ERECTION						
SL NO.	CHARACTERISTICS / ITEM	TYPE OF CHECK	INSTRUMENT	CLASS	QUANTUM/ FREQUENCY OF CHECK	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	FORMAT OF RECORD	REMARKS	
<b>4</b>	<b>PRE ERECTION</b>								
4.1	Ensure availability of E& C manual and drawings	V/R		C	100%	List of drgs.	Logbook		
4.2	Ensure availability of all materials, completeness of supply & accessories	V/R		C	100%	BOM & Drawing			
<b>5</b>	<b>ERECTION</b>								
5.1	Ensure dimension of bus duct layout, foundation & support structure, identification labels & caution plates	M	Tape	B	100%	Drawing	Logbook		
5.2	Ensure use of proper lifting tackles	V		C	100%				
5.3	Ensure verticality of structure within 1mm/M Matching of busduct with transformer & switchgear.	M/N/R	Plumb bob/ Tape	C	100%	E & C manual	Logbook		
5.4	Ensure clearance between phase to phase & pahse to inside of the bus duct			B	100%	E & C manual	Logbook		
5.5	Matching of busbar & tightening of busbar joints	V	Torque wrench	A	100%	E & C manual	Logbook		
5.6	Ensure that no foreign materials like tolls, consumables etc are left inside the enclosures.	V		C	100%				
5.7	Ensure proper earthing of respective equipments like structure & enclosures	M	Megger	A	100%	Drawing	Logbook		
5.8	Check busduct interior components/ insulators.	V		C	100%	Drawing	Logbook		
5.9	Placement of silica gel/ breather wherever applicable	V		C	100%	Drawing	Logbook		
5.10	Ensure that all openings are closed & bolts arre lightened.	V		B	100%	Drawing	Logbook		

 PSER		FIELD QUALITY PLAN FOR <b>LT BUSDUCT</b> (STATEMENT OF CHECKS)				AREA: ERECTION & COMMISSIONING				FQP NO.: QPX:STD:500:EL:65 REV.NO.: R00 SHEET 4 / 4 SHEETS	
SYSTEM: Busduct		SUB-SYSTEM: LT BUS DUCT		TYPE OF CHECK	INSTRUMENT	CLASS	QUANTUM/ FREQUENCY OF CHECK	REFERENCE DOCUMENT/ ACCEPTANCE STANDARD	FORMAT OF RECORD	REMARKS	
<b>6</b>	<b>Testing</b>										
6.1	General inspection. Ensure MCC is ready for charging. Ensure that transformer is ready for use in all respects		V			C	100%	IS 5082, IS 8623, IS375			
6.2	Check manufacturer's test certificate		V			C	100%				
6.3	Check IR value Measurement of Bus bars when Bus duct is connected to LTDB or PMCC.		M		Megger	A	100%	Drawing	L-01		
6.4	Conduct high voltage test		M		Test kit	A	100%	E & C manual/drg.	L-01		
6.5	Ensure that all protective relays are in order & are set to minimum.		V			A	100%	E & C manual/drg.			
<b>7</b>	<b>Commissioning:</b>										
7.1	Ensure power supply feeders are isolated before charging the busduct by keeping the incomer breaker of MCC in off condition.		V			A	100%	E & C manual/drg.	Logbook		
7.2	Switch on the transformer charge LT busduct and measure the incoming voltages. Ensure the voltages are within the permissible limits of variation.		T/M		Multimeter	A	100%	E & C manual/drg.	Logbook		
7.3	Measure & record bus bar currents. Ensure that under full load conditions busbar rated current is not exceeded.		M		Ammeter reading	A	100%	E & C manual	L-01		


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**DOCUMENTS REFERRED IN FIELD QUALITY PLAN**

SL.NO.	Reference Document	Issuing Authority
1	Erection & Commissioning Manual	Supplier

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<div><div>PSER</div></div> <div>RECORD OF QUALITY CHECKS</div>							
SHEET NO. OF FQP	CHECK NO.	RESULTS ACHIEVED OK / NOT OK	DRAWING / DOCUMENT REFERENCE	FORMAT OF RECORD	INSPECTED BY SIGN. & DATE	CLEARED BY SIGN. & DATE	REMARKS
<div>Note : Any protocol made is to be numbered &amp; mentioned in "Format of Record" column.</div>							
PROJECT		SYSTEM	SUB-SYSTEM	AREA	FQP NO.: QPX:STD:500:EL:65		
UNIT NO.					REV. NO. : R00		
RATING					LOG SHEET NO. : L-00		
					SHEET 1 / 1 SHEET		



 PSER	INSTRUMENT REG. NO./TAG				
	DATE OF INSPECTION				
	DRAWING / DOCUMENT REF.				
<b><u>PROTOCOL</u></b>					
<p style="font-size: 2em; transform: rotate(-45deg); opacity: 0.3;">FOR TENDER PURPOSE ONLY</p>					
			NAME	SIGNATURE & DATE	FQP NO.: QPX:STD:500:EL:65
PROJECT		INSPECTED BY			REV.NO.: R 00
UNIT NO.		CLEARED BY			PROTOCOL NO..
RATING		CUSTOMER			PAGE: