

Item: 1.1 KV Power (XLPE & PVC) FRLS Insulated cables		STANDARD QUALITY PLAN (CONFORMING TO CODE IS 1554 PART 1, IS 7098 Part-I AND NTPC TECHNICAL SPECIFICATION)				QP NO. 0000-999-QOE-S-041 REV-00 DATE: 03-02-12 Page 6 of 11 VALID UP TO: 02-02-15		REVIEWED BY INDERJIT SINGH VIKRAM TALWAR RAJEEV GARG		APPROVED BY Anko Garg NTPC				
Sl No	Component & Operations	Characteristics	Class	Type of check	Quantum of check		Reference Document	Acceptance Norms	Record Format	Approval				Remarks
					M	C/N				D*	M	C	N	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		8. Mass of Zinc coating	CR	Meas	Each type & size of cables as per sampling plan of IS 1554 (Part 1) & IS 7098-Part I	NTPC ADS /IS1554(PartI)/IS3975	NTPC ADS /IS1554(PartI) /IS3975	Test certificate	✓	P	W	W		
		9. Uniformity of Zinc Coating	CR	Chem.	--do--	--do--	--do--	--do--	✓	P	W	W		
		10. Adhesion test	CR	Mech	--do--	--do--	--do--	--do--	✓	P	W	W		
		11. Freedom from defects	CR	Visual	--do--	--do--	--do--	--do--	✓	P	W	W		
3.03 (ii)	Conductor													
		1. Resistance Test	CR	Elect	--do--	--do--	--do--	--do--	✓	P	W	W		
		2. Tensile test (For aluminum conductor only)	CR	Mech	Each type & size of cables as per sampling plan of IS 1554 (Part I)/7098(Part-1)	NTPC ADS/ IS 8130	NTPC ADS/ IS 8130	--do--	✓	P	W	W	Test report of manufacturer to be reviewed as per Sl. No. 2.01 for Tensile test & wrapping test (for Aluminum) in case this test is not applicable for cable under inspection as per IS 8130 cl. 6.2	
		3. Wrapping test (For aluminum conductor only)	CR	Mech	--do--	--do--	--do--	--do--	✓	P	P	W	--do--	

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-M: MANUFACTURER/SUPPLIER, C: MAIN SUPPLIER, N: NTPC, P: PERFORM W: WITNESS, V: VERIFICATION AS APPROPRIATE, CHP: NTPC SHALL IDENTIFY IN COLUMN "N" AS "W"

FORMAT NO: QS-01-QAI-F-10/F3-R1

Sl. No		Component & Operations	Characteristics	Class	Type of check	Quantum of check M C/N	Reference Document	Acceptance Norms	Record Format	Agenda D* M C N				Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3.03 (IV)		PVC/XLPE/Insulation & PVC Sheath	1. Thickness of insulation & PVC Sheath	CR	Meas	Each type & size of cables as per sampling plan of IS 1554 (Part 1)/IS7098 (Part-1)	NTPC ADS/ IS 1554(Part1) & IS 7098 Part 1	NTPC ADS/ IS 1554(Part1) & IS 7098 Part 1	Test Certificate	✓	P	W	W	
			2. Tensile strength & elongation at break of insulation & outer sheath (before ageing)	CR	Mech	Each type & size of cables as per sampling plan of IS 1554 (Part 1)/IS7098 (Part-1)	NTPC ADS/ IS 1554(Part1) & IS 7098 Part 1	NTPC ADS/ IS 1554(Part1) & IS 7098 Part 1	Test Certificate	✓	P	W	W	Refer Note 3 Also
			3. Tensile strength & elongation at break of insulation & outer sheath (after Ageing)	CR	Mech	Refer Note 3	--do--	--do--	--do--	✓	P	W	W	Refer Note 3 (ath)
			4. Insulation resistance (Volume resistivity method)	CR	Elect	Each type & size of cables as per sampling plan of IS 1554 (Part 1) & IS 7098-Part 1	--do--	--do--	--do--	✓	P	W	W	
			5. High voltage test at room temperature	CR	Elect	Each type & size of cables as per sampling plan of IS 1554 (Part 1) & IS 7098-Part 1	--do--	--do--	--do--	✓	P	W	W	
			6. Hot Set test (for XLPE insulation only)	CR	Phy	--do--	--do--	--do--	--do--	✓	P	W	W	
			7. Thermal stability on PVC insulation and outer sheath	CR	Chem	One sample of each offered lot of all offered sizes	--do--	--do--	--do--	✓	P	W	W	

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FORMAT NO:QS-01-QAL-P-10/13-R1

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						M	C/N				D*	M	C	N	
1			8. Oxygen index Test on outer sheath	CR	Chem	One sample of each offered lot of all offered sizes		NTPC ADS / IS10810 Part 58	NTPC A.D.S	--do--	✓	P	W	W	
			9. Smoke density rating test on outer sheath	CR	Chem	One sample of each offered lot of all offered sizes		NTPC ADS & AS IMD2843	NTPC ADS	--do--	✓	P	W	W	
			10. Acid gas generation test on outer sheath	CR	Chem	One sample of each offered lot of all offered sizes		NTPC ADS & IEC 60754-1	NTPC ADS	Test Certificate	✓	P	W	W	
			11. Flammability test on completed cable	CR	Chem	Refer Note 4	Refer Note 4	NTPC ADS & IEC 60332 Part-3 (Category-B)	NTPC ADS	--do--	✓	P	W	W	
			12. Surface finish & length measurement.	CR	Visual & Meas	One length of each size	One length of each size	(1) Drum no. (2) IS1554-1 / IS7098-1, Cable size, Voltage grade & Words "FRLS" at every 5 meter is to be embossed. Embossing shall be automatic, in line & marking shall be legible & indelible. (3) Sequential marking of length of cable in meter at every one meter is to be embossed / printed. Embossing / printing shall be progressive, automatic, in line & marking shall be legible & indelible	--do--	✓	P	W	W	Pimple, Fish Eye, Burnt particles, Blow Hole etc. not permitted. Repairing on outer sheath not permitted	
			13. Sequence of cores armour coverage, gap between two consecutive armour / formed wire	CR	Visual & Meas	One length of each size	One length of each size	Min. area of coverage of armouring shall be 90%. The gap between armour wires / formed wires shall not exceed one armour wire / formed wire space & there shall be no cross over / over riding of armour wire / formed wire. Zn rich paint shall be applied on armour joint surface of G S Wire / formed wire	--do--	✓	P	W	W		
4	Packing	I. Sealing	MA	Visual	100%	100%	(1) IS1554(Part-I) & IS 7098-Part I (2) The surface of the drum and the outer most cable layer shall be covered with water proof cover. (3) Both the ends of cables shall be properly sealed with heat shrinkable PVC / rubber caps secured by "U" nails.	QCR	✓	P	--	--			
4.01	Identification	NTPC Sealing	MA	Visual	100%	100%	Sealing shall be visible	QCR	✓	P	V	V			

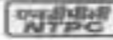

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FORMAT NO: QS-01-QAI-P-16/F3-R1





		Item: 1.1 KV Power (XLPE & PVC) Insulated FRLS cables	STANDARD QUALITY PLAN (CONFORMING TO CODE: IS 1554 PART I, IS 7098 Part-I AND NTPC TECHNICAL SPECIFICATION)			QP. NO. 0000-999- QOE- S-041 REV-00 DATE : 03-02-12 Page 9 of 11 VALID UP TO: 02-02-15		REVIEWED BY INDERJIT SINGH VIKRAM TALWAR RAJEEV GARG						
Sl. No	Component & Operations	Characteristics	Class	Type of check	Quantum of check		Reference Document	Acceptance Norms	Record Format	Agency				Remarks
					M	C/N				D*	M	C	N	
1	2	3	4	5	6		7	8	9	10				11
Notes:														
1) If the compound manufacturer is carrying out Ageing test , test report of compound manufacturer is to be reviewed. If the compound manufacturer is not carrying out ageing test, then cable manufacturer is to carry out ageing test & test report is to be reviewed (quantum of ageing test sample shall be one sample /batch)														
2) (a) In case of manufacturers / supplier who have supplied cables in the past through Corporate Centre/ Regional Offices :- Routine Test of manufacturer internal test report are to be verified by NTPC at the time of final inspection. 2(b) In case of manufacturers / supplier WHO HAVE NOT SUPPLIED cables in the past through Corporate Centre/ Regional Offices :- Routine Test are to be witnessed by Main Contractor & NTPC. This is in addition to manufacturer internal test report to be verified by NTPC at the time of final inspection.														
3) Refer table on page 10 & 11 of 11 for Sampling & Acceptance criteria.														
4) For PVC insulated LT power cable :- For cables with OD less than equal to 30 mm, any size of cable may be clubbed together. For cables where OD is more than 30 mm, clubbing to be done for cables having similar ODs. For XLPE Insulated LT Power cable: Clubbing to be done for cables having similar ODs.														
LEGEND: NTPC ADS: NTPC approved data sheet, QCR: quality control records of cable manufacturer, CABLE MANUF STD- cable manufacturer's internal plant standard, MI: minor, MA: major, CR: critical, COC- certificate of conformance														

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Sl. No	Component & Operations	Characteristics	Class	Type of check	Quantum of check		Reference Document	Acceptance Norms	Record Format	D*	Remarks
					M	C/ N					
1	2	3	4	5	6		7	8	9	10	11

Sampling & Acceptance Criteria


Criteria	Manufacturer experience prerequisite	Condition	Testing procedure	Remarks
Samples as per relevant IS from every size/ type of cable in the offered lot shall be tested for Tensile Strength & Elongation (before ageing). The values will be compared with corresponding values mentioned in the Type Test report accepted by NTPC. These values of Tensile Strength & Elongation (before ageing) should be within +/- 15% tolerance (final values should be more than the minimum values indicated in relevant standard) of the Type Test report	In case of Manufacturers/ Supplier who have supplied cables in the past through Corporate Centre / Regional offices	In case of sizes/ type which meet the criteria	1 Sample of PVC insulation & outer sheath per type of cables offered which have met the criteria, will be put on accelerated ageing test (refer IRS specification no. IRS: S-63/2007 Rev 3.0). The samples shall be aged in air oven at temperature of 130°C +/- 2°C for 5 hours. 1 Sample of XLPE insulation per type of cables offered which have met the criteria, will be put on ageing test as per IS 7098. After wards the samples shall be tested for Tensile Strength & Elongation. Acceptance norms shall be as per relevant IS. This test shall be witnessed by NTPC.	In case the samples do not meet the requirement in accelerated ageing test then 1 sample of that size/ type will be put on ageing test as per IS.
		In case of size /type which do not meet the criteria	Particular size/ type will be put on ageing test as per IS. This test shall be witnessed by NTPC.	----

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Sl No	Component & Operations	Characteristics	Class	Type of check	Quantum of check		Reference Document	Acceptance Norms	Record Format	Agency				Remarks
					M	C/N				D*	M	C	N	
1	2	3	4	5	6		7	8	9	10			11	
				In case of Manufacturers/ Supplier WHO HAVE NOT SUPPLIED cables in the past through Corporate Centre / Regional offices	In case of size /type which meet the criteria	1 Sample per type out of all sizes which have met the criteria, will be put on aging test and witnessed by NTPC as per relevant IS				----				
					In case of size/ type which do not meet the criteria	Particular size / type will be put on ageing test as per IS. This test shall be witnessed by NTPC				----				

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FORMAT NO:QS-01-QAL-P-10/03-01

		T M P M N T M it e r (RECEIPT, STORAGE & ERECTION) T M		N C T L L T P L N C N M N C T N T P C C T N			QP No: REV No: 0 DATE: PAGE: VALID UPTO:		REVIEWED BY		APPROVED BY	
SI No	ACTIVITY AND OPERATION	CHARACTERISTICS	#CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	D*	REMARKS		
1	2	3	4	5	6	7	8	9		10		
1	MATERIAL, RECEIPT AND UNLOADING	Safe unloading of material at site	C	Visual	100%	Manufacturer Installation Manual	No damage	Logbook				
		Verification of quantity, short supply if any	C	-do-	-do-	Packing List / CHP / MDCC/Challan	Packing List / CHP / MDCC/Challan	-do-		Report to Manufacturer for short supply.		
		Package Condition	C	Visual	-do-	Packing List	Free from damages	-do-		Material Damage Report in case of damage		
2	STORAGE	Movement to warehouse	C	Visual	-do-	Manufacturer Installation Manual	No damage	-do-				
		Storage Space	A	Physical	-do-	-do-	Instruction Manual	-do-				
		Store Handling	C	Physical	-do-	-do-	Store in such a way which avoid direct mechanical hit with sharp objects	-do-				
3	PRE - ERECTION	Documents Availaibity	C	Visual	-do-	Ensure availability of Manufacturers instruction manual, NTPC approved Layout drawing/data sheet etc.	Ensure availability of Manufacturers instruction manual, NTPC approved Layout drawing/data sheet etc.	-do-				
		Tools, fixing hardware availability	C	Visual	-do-	Manufacturer Installation Manual	Manufacturer Installation Manual	-do-				
		Completeness of foundadtion, Cable trenches, floor opening for cables	C	Measure	Once before erection	NTPC approved civil drawing	NTPC approved civil drawing	-do-				
		Material Movement to site	C	Visual	-do-	Manufacturer Installation Manual	No damage	-do-				
		Unpacking of Material and its handling	C	Verify	-do-	Manufacturer Installation Manual	No damage	-do-				

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LEGEND TO BE USED: CLASS# : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BR WITNESSED BY MAIN SUPPLIER (A & B SHALL BE NTPC CHP STAGE)

		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)	RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)				RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)	RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)
		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)				RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)
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1	2	3	4	5	6	7	8	9	D*	10
4	ERECTION	Lift the Panel by using proper material handling equipment and position the Panel in place.	C	Visual	100%	Manufacturer Installation Manual	Manufacturer Installation Manual	Logbook		
		Secure the enclosure mounting lugs to preinstalled anchoring with suitable bolts.	C	Electrical	100%	Manufacturer Installation Manual	Manufacturer Installation Manual	-do-		
		Ensure that base frames are securely tag welded	C	Visual	100%	Manufacturer Installation Manual	Manufacturer Installation Manual	-do-		
		Check verticality of Panels	C	Sprit Level	100%	NTPC approved	NTPC approved	-do-		
		Ensure that remaining units are lined up by placing packers of various thickness under each unit.	C	Visual	100%	NTPC approved	NTPC approved	-do-		
		Ensure that correct sequence of panel positioning is maintained as per layout drawing for both normal & phase reversal panels.	B	Visual	100%	NTPC approved drawing	NTPC approved drawing	-do-		
		Check and ensure that un-plated contact surfaces, if any are thoroughly cleaned and electrical jointing compound applied on the surface after scratching with fine emery paper. Plated surfaces are to be cleaned with solvents.	C	Visual	100%	Manufacturer Installation Manual	Manufacturer Installation Manual	-do-		
		Check correctness of bus duct entry w.r.t. phase sequence for both normal & phase reversal panels.	B	Visual	100%	NTPC approved drawing	NTPC approved drawing	-do-		
		Ensure that the bolting surface are free from dust, grease and other contamination.	C	Visual	100%	Manufacturer Installation Manual	Manufacturer Installation Manual			
		Coupling Bolt/ Busbar connections tightness	B	Visual	100%	Manufacturers instruction manual	Manufacturers instruction manual.	-do-		5% at random by NTPC
		Panel Earthing (including doors), its tightness & continuity to Earth Pit, no earthing of communication cable shield to panel	B	Visual and Electrical	100%	NTPC approved drawing/Installation Manual	NTPC approved drawing/Installation Manual	-do-		
		Ensure Vacuum Interrupters have not suffered any damage	C	Visual	100%	Manufacturers instruction manual	Manufacturers instruction manual	-do-		
		Check for no moisture, dust deposition on interrupter & insulator surface	C	Visual	100%	Manufacturers instruction manual	Manufacturers instruction manual	-do-		
		Check for completeness of interpanel wiring	C	Visual	100%	NTPC approved drawing	NTPC approved drawing	-do-		
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'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B SHALL BE NTPC CHP STAGE)										
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Engg. Div./QA&I										

		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)	RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)				RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)		RECEIPT, STORAGE & ERECTION (RECEIPT, STORAGE & ERECTION)	
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SI No	ACTIVITY AND OPERATION	CHARACTERISTICS	#CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	REMARKS	
1	2	3	4	5	6	7	8	9	10	
		Check cable size for all input, output connections, communications, control connections and auxiliary power connections and check tightening torque of cable termination.	B	Visual	100%	Manufacturer instruction manual/NTPC Approved drawings	Manufacturer instruction manual/NTPC Approved drawings	-do-	5% at random by NTPC	
		Verifications that open entries/holes are plugged in.	C	Visual	100%	Manufacturer instruction manual	Manufacturer instruction manual	-do-		
		Ensure CT polarity & CT secondaries shorting where remote instruments are to be used.	B	Electrical	100%	NTPC approved drawing	NTPC approved drawing	-do-	5% at random by NTPC	
		Check Voltage ratio of PT, in case mounting is done at site	C	Elec	100%	NTPC approved drawing	NTPC approved drawing	-do-		
		Check pad locking of doors	C	Visual	100%	NTPC approved drawings	NTPC approved drawings	-do-		
		Check interchangeability of breaker trolleys	C	Visual	100%	NTPC Specification	NTPC Specification	-do-		
		Check for manual spring charging, closing & tripping of the breaker	C	Visual	200%	NTPC Specification	NTPC Specification	-do-		
		Check for electrical spring charging, closing & tripping of the breaker	C	Visual	300%	NTPC Specification	NTPC Specification	-do-		
		Check degree of protection by paper inertion	B	Visual	400%	NTPC Specification	NTPC Specification	-do-		
		IR Test before & after the HV Test with 500V meggar for control circuit and 5.0KV Meggar for Power Ckt.	B	Electical/Megger/ Multi meter	100%	IEC 62271-200	IEC 62271-200	-do-		
		HV test on Power & control ckt at 90% of test voltage as per IEC-62271-200	A	Electical/Megger/ Multi meter	100%	IEC 62271-200	IEC 62271-200	-do-		
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Format No.: QS-01-QAI-P-10/F4-R1										
Engg. Div./QA&I										

SUPPLIER'S LOGO		SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN			PROJECT :			
				ITEM : SWITCHYARD	QP NO.:		PACKAGE :			
		SUB-SYSTEM:		REV. NO.:		CONTRACT NO. :				
				DATE:		MAIN-SUPPLIER:				
		PAGE: OF....								
SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
1	GENERAL									
1.1		Check that all assemblies / components are properly packed in their original or similar packing with suitable clamps, brace and polythene covers as applicable.	C	VISUAL	100%	INSTRUCTION MANUALS	Delivery challan	SITE REGISTER		Periodic anti termite spray with durmet (cynamid) or equivalent on all wooden surfaces wherever applicable.)
1.2		Check that all packages are stored in a ventilated storage.	C	VISUAL	100%	INSTRUCTION MANUALS		SITE REGISTER		
1.3		Check that all small fragile items are stored in proper containers at safe locations to avoid any damage. Ensure that this is stored as per instructions.	B	VISUAL	100%	MFGR. INSTRUCTION MANUAL.		SITE REGISTER		
	HANDLING IN STORAGE									

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MANUFACTURER/ SUB-SUPPLIER		MAIN-SUPPLIER		FOR NTPC USE			
SIGNATURE				REVIEWED BY		APPROVED BY	
				APPROVAL SEAL			

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN				PROJECT :			
			ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE :			
		SUB-SYSTEM:					CONTRACT NO. :			
							MAIN-SUPPLIER:			

SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
1.4		For easy identification Check that identification marks or tags are kept intact.	C	VISUAL	100%	MFGR. INSTRUCTION MANUAL.		SITE REGISTER		
1.5		Check that the items are stored in a systematic way for easy removal and to avoid any damage.	B	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
1.6		Check that the heavy packages are not stored one above the other.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
1.7		Check that suitable slings are used and that while handling there is no impact on packages. Ensure that the packages are not dropped.	B	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		
1.8		Check that the instruction / erection manuals for all equipments have been received from manufacturer.	C	VISUAL	100%	TECHNICAL SPECS. & DRAWINGS.		SITE REGISTER		
1.9		Check that a schedule of erection drawing is available in the instruction manual or is received separately.	C	VISUAL	100%	TECHNICAL SPECS. & DRAWINGS.		SITE REGISTER		

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MANUFACTURER/ SUB-SUPPLIER			MAIN-SUPPLIER		FOR NTPC USE			
SIGNATURE						REVIEWED BY	APPROVED BY	APPROVAL SEAL

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN				PROJECT :			
			ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:			
SUB-SYSTEM:										
SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
1.10		Check the availability of all documents, especially bill of materials, packing list, layout drawing, structural general arrangement and erection drawings as per the schedule.	C	VISUAL	1	TECHNICAL SPECS. & DRAWINGS.		SITE REGISTER		
1.11		Check whether all the mdcc & CHP of equipments and associated material are available at site.	B	VISUAL	1	TECHNICAL SPECS. & DRAWINGS.		SITE REGISTER		
1.12		Check that the proper tools and tackles are used for transporting material to erection site	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
1.13		Check that only required assemblies and components are brought to erection site at the particular stage.	C	VISUAL	100%	LAYOUT DRAWING AND FOUNDATION DRAWING/ NTPC APPROVED DRG. & SPECN.		SITE REGISTER		
1.14		Ensure that fragile items are handled carefully.	C	VISUAL	100%	MANUFACTURER'S MANUAL / INSTRUCTION.		SITE REGISTER		

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							MAIN-SUPPLIER:			

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
2.0	EARTHING SYSTEM									
	RECEIPT:									
2.1		Receiving Inspection.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.			SITE REGISTER	
2.2		Visual examination	C	VISUAL	100%	PACKING LIST AND BOM			SITE REGISTER	
	STORAGE:									
2.3		Check that earthing materials are stored properly.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.			--DO--	
	ERECTION :									
2.4		Check the Burial depth of Earth mat.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.			--DO--	* The earthmat of live portion and new portion shall be connected only under shutdown.
2.5		Check that the overlaps are jointed properly.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.			--DO--	
2.6		Check that proper electrodes are used for welding / brazing.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.			--DO--	

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SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
2.7		Check that protective paints are applied wherever required.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
2.8		Check that buried pipes are crossing the earth rods / strip from below.		VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
2.9		Check that all the structures of all the equipments, all panels inside the building, cable supports, fences, gates, rail tracks etc are connected to earth mat.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
3	MAIN AND AUXILIARY STRUCTURE									
3.0	ISOLATOR									
	RECEIPT :									
3.1		Check for any external damages to packing cases.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		If packing case received is externally damaged lodge claim on carrier.

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
3.2		Check that the required components of the isolator have been received as per packing list.	C		100%	PACKING LIST AND BOM		SITE REGISTER		
3.3		Check for any visual damage to galvanized surface as the case may be.	B	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
3.4		Check for any shortage of components or another damages.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
3.5		Check all porcelains parts for any kind of physical damage or surface defects.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
	STORAGE :									
										If packing case received is externally damaged lodge claim on carrier.
3.6		Check for storing pi's away from inflammable material	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.				
3.7		Check for storing control cubicle / aux. switches in dry and covered places.	B	VISUAL	100%	--DO--				

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
	ERECTION :									
3.8		Structure - Check the structure erected is as per NTPC approved drg.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL AND NTPC APPROVED DRAWINGS		SITE REGISTER		
3.9		Tighten foundation bolts properly	C	PHYSICAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.10		Install the base over the two structure columns	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.11		Install the rotor housing assembly on the base.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.12		Adjust by spirit level the horizontality of the flange, of the rotor.	A	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.13		Install insulator support	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.14		Install the lever plates as per manufacturers manual	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.15		Couple the cross tandem pipe assembly	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
3.16		Ensure equipment is erected with proper tools	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.17		Ensure correct phase sequence and location of operating mechanism.	B	PHYSICAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.18		Check for continuity for electrical connection.	B	PHYSICAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.19		Ensure operating mechanism is correctly assembled and erected. alignment is properly done	A	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.20		Check connections of the isolator.	C	PHYSICAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
3.21		Check for earthing of isolator points / switch cubicles.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
4.00	CURRENT TRANSFORMER AND CAPACITIVE VOLTAGE TRANSFORMERS									

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D* 10.
	RECEIPT :								
4.1		Check packing cases for external damaged and oil marks.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
4.2		Check oil leveler mark on CT/CVT	B	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	CTs to be stored at site as per the instruction manual of the manufacturer. The recommendations to be strictly followed. oil level to be checked when CT/CVT is received at site
4.3		Check for the quantity and short supplies.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
4.4		Check the name plates CT/CVT reference numbers and generally ensure that the CT/CVT received are of required ratings.	C	VISUAL	100%	PACKING LIST AND BOM AND APPROVED EKD		SITE REGISTER	
4.5		Check for any mechanical damages, cracks, deformations or deep scratches.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
4.6		Check for porcelain part for damages, chipping, cracks etc.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
4.7		Check for damages of secondary terminal & primary terminals of CT/CVT.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
4.8		Check that the terminal identification markings for primary terminal and neutral of CVTs are clearly marked as per approved drawing.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
4.9		Check the fixing inserts are in proper condition and that there is no damage to the threads.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
4.10		Check particularly for any visible crack or damage to CVT neck portion and base.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
4.11		Ensure proper and careful handling of packages as well as individual items since fragile items.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
	STORAGE:									
4.12		Check that CTs & CVTs are stored in a place protected from dirt, dust and ingress of moisture.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
4.13		Check that the rating plate and other marking on the CTs & CVTs are kept properly protected during storage.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
	ERECTION:									
4.14		Check for oil marks damage or any other defect of primary and secondary terminals.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
4.15		Ensure the lifting of CT using lifting lugs only (protect porcelain)	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
4.16		Erection of ct's as per instruction manual and Check for tightening of all the bolts and nuts.	C	PHYSICAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
4.18		Check earthing terminal for connections to earth mat at correct location.	B	VISUAL	100%	APPROVED DRAWING AND MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
4.19		Mount the ct on structure ensuring correct polarity and level with respect to al. tube. Tighten the bolts as per the instruction given by the manufacturer.	B	PHYSICAL	100%	APPROVED DRAWING AND MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
4.20		Check for connection made for proper ratio.	C	VISUAL	100%	1.RATING PLATE 2.CONNECTION DIA. 3.MANUFACTURER INSTRUCTIONAL MANUAL.		SITE REGISTER		
5	LIGHTNING ARRESTOR									
	RECEIPT:									
5.1		Check for any external damages to packing case.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		If packing case received in damaged condition lodge claim on carrier obtain odc endorse.
5.2		Check for receipt of all components as per packing list.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		--do--

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
5.3		Ensure rating etc. as per order	C	VISUAL	100%	APPROVED EKD, PACKING LIST AND BOM		SITE REGISTER		counter check by NTPC
5.4		Check for any damages to porcelain	C	VISUAL	100%	VISUAL AS PER PACKING LIST AND BOM		SITE REGISTER		counter check by NTPC
5.5		Check that the material is as per order.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		counter check by NTPC
	STORAGE :									
5.6		Check that the rated arrestors are stored properly to prevent the wood or cases getting damaged.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
5.7		store counters, corona rings and supports safety to prevent from dust, dirt etc.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
	ERECTION :									
5.8		Remove arrestor from the container and clean all surfaces of the arrestor thoroughly.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
5.9		Check for order, assembly master name plat etc. as per approved drawing.	C	VISUAL	100%	APPROVED DRAWING		SITE REGISTER		
5.10		arrestor should be erected by / handled with a chain pulley and nylon rope round around the porcelain for installations.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
5.11		For arrestor provided with insulation base, the base must be bolted to the structure.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
5.12		Surge monitor should be mounted as per drg. at a convenient height and should be connected in parallel with insulating base.	A		100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
5.13		During installation care should be taken to avoid corona rings striking the porcelain.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
5.14		ensure that no intermediate earthing connection shall make to earthing leads.	A	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		

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SIGNATURE					REVIEWED BY	APPROVED BY	APPROVAL SEAL	

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			ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE :			
		SUB-SYSTEM:					CONTRACT NO. :			
							MAIN-SUPPLIER:			
SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
6.0	CLAMPS & CONNECTORS									
	RECEIPT :									
6.1		Check pkg. cases for external damage.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
6.2		Check for quantity of each type of clamp as per the packing list. Check size / physical arrangement as per drawings.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
6.3		Check for its physical appearance and any possible damage such as scratches, deep cut etc. during transit.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
	STORAGE									
6.4		Check that clamps & connectors are stored in a place protected from dirt, dust and ingress of moisture.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
6.5		Check that clamps & connectors are kept in packed condition or atleast covered with polythene covers.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
	ERECTION:									
6.6		Erection of clamps & connectors as per drawing.	B	VISUAL	100%	APPROVED DRAWING AND MFGRS. INSTRUCTION MANUAL.		--DO--		
6.7		Clamps & connectors tighten to their respective equipment as per given equipment.	B	VISUAL	100%	APPROVED DRAWING AND MFGRS. INSTRUCTION MANUAL.		--DO--		
7.0	INSULATORS AND INSULATOR HARDWARES									
	RECEIPT :									
7.1		External damage to pkg.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		If packing case received in damaged condition lodge claim on carrier obtain odc endorse LR/RR. lodge claims. Counter check by NTPC.

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
7.2		Check for quantity and ensure that entire quantity duly inspected and cleared by NTPC.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		--do--
7.3		Check for surface defects / damage of insulator, cracks scratches and chipping of cementing portion.	B	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		--do--
7.4		galvanize and visual defects of metal parts and any slackness of metal parts and chips etc.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		--do--
7.5		Ensure properly repacked to avoid any damage before sending for storage.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM AS PER MFGRS. INSTRUCTION MANUAL		SITE REGISTER		--do--
	STORAGE:									
7.6		Check that insulators & insulator hardware are stored in a place protected from dirt, dust and ingress of moisture.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		--do--

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
	ERECTION:									
7.8		Remove insulator from wooden cases and clean the surface of insulator.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		--do--
7.9		Install the insulator and hardware as per approved drawing	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		--do--
8.0	EARTH WIRE AND ACSR CONDUCTORS									
	RECEIPT:									
8.1		Check conductor for drums for damage that they are in a good condition to be rolled without damaging the conductor.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		SITE REGISTER		
8.2		Check for physical appearance and damage to conductor specially two top layers and end seals and NTPC is seal.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
	STORAGE:									

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
8.3		Check that earthwire & ACSR conductors are stored in a place protected from dirt, dust and ingress of moisture.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
8.4		Check that earthwire & ACSR conductors are kept in packed condition or atleast covered with polythene covers.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
	ERECTION :									
8.5		The paving of earth wire and conductor should be over ground drum to avoid direct contact and scratches from the soil.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
8.6		Check the proper alignment and tightening before crimping the lugs.	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
9.0	3" / 4" IPS ALUMINIUM TUBE (IF APPLICABLE)									
	RECEIPT :									

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
9.1		Check for quantity	C	VISUAL	100%	PACKING LIST AND BOM		--DO--		If packing case received in damaged condition lodge claim on carrier obtain odc endorse LR/RR.
9.2		Check for physical conditions cracks, scratches, during transit.	C	VISUAL	100%	VISUAL PACKING LIST AND BOM		SITE REGISTER		No physical damage.
	STORAGE :									
9.4		Check that aluminium tubes are kept in packed condition or atleast covered with polythene covers.	C	VISUAL	100%	--DO--		--DO--		
	ERECTION :									
9.5		Polishing the al. tube to remove the scratches and measurement of ID and OD to ensure the minimum thickness as per specification.	B	PHYSICAL	100%	NTPC APPROVED DRGS. & TECHNICAL SPECS.		SITE REGISTER		
9.6		Check the proper alignment for complete al. tube is achieved and verified before any welding.	C	VISUAL	100%	NTPC APPROVED DRGS. & TECHNICAL SPECS.		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
9.7		Before the welding Check that no inflammable material is present around the work spot.	C	VISUAL	100%	VISUAL		SITE REGISTER		
9.8		Check that the porcelain are protected before doing any welding on al. tubes	C	VISUAL	100%	--DO--		SITE REGISTER		
9.9		Check that welding is done by only qualified and approved welder, whose performance has been pre-tested with a test piece at site strictly in accordance with the approved welding procedure with recommended welding material and welding machine and the strength of the weld joint is not less than of present material strength. ensure that welding rods are ISI make only	A	PERFORMANCE TEST AT SITE	100%	AS PER NTPC APPROVED WPS		SITE REGISTER		WPS to be submitted for NTPC approval.If welders to be qualified prior start of work.

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
9.10		Ensure that the welding of al. tube are done as per instructions and that best quality welding is achieved. Strict adherence to instructions given in manual and as per approved procedure should be ensured.	B		100%	ELECTRICAL LAYOUT DRAWINGS,/ INSTRUCTION MANUAL WELDING INSTRUCTIONS.		SITE REGISTER		Counter check by NTPC.
9.11		Check that the alignment of tubes are done as per instructions and that best quality welding is achieved.	B	VISUAL	100%	ELECTRICAL LAYOUT DRAWINGS,/ INSTRUCTION MANUAL WELDING INSTRUCTIONS.		SITE REGISTER		
9.12		Dye penetration test	A	PHYSICAL	10%	AS PER INSTRUCTION MANUAL		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
9.13		X-ray on welded joint test	A		10%	GDCD		SITE REGISTER	Location of the x-ray test will be selected by NTPC and failure shall be reviewed by NTPC radiography on welded joint will be checked on 10% of the total length of circumferential.
10.0	CIRCUIT BREAKERS								
	RECEIPT :								
10.1		Check for any external damages to packing case.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
10.2		Check that the required components of circuit breaker have been received as per packing list/ bill of materials.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
10.3		Check for any visual damage to galvanising/ painting as the case may be.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
10.4		Check for any shortage of component and of any other damages in accessible areas of condensation of moisture in arechamember/ driving unit critical areas.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
10.5		Check all porcelain parts	C	VISUAL	100%	VISUAL				
10.6		Check for gas leakage / oil leakage / smell.	B	VISUAL	100%	MANUFACTURER'S INSTRUCTION MANUAL.		SITE REGISTER		counter check by NTPC
10.7		Handling of parts under gas pressure. Check the cleanliness of components equipment received, dirt, girt, soiled parts if any.	C	VISUAL	100%	MANUFACTURER'S INSTRUCTION MANUAL.		SITE REGISTER		
	STORAGE :									
10.8		Check that CBs are stored as per manufacturer instruction.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
10.9		Check for storing CBs away from the inflammable material.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
	ERECTION :									

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1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
10.1		Completeness of erection of breaker as per drg. and manual in correct phase sequence and location with proper tools.	C	VISUAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
10.11		Wires and bus connection and tightness of below connections.	C	VISUAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
10.12		Cable terminators and electrical continuity Check.	B	PHYSICAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
10.13		Leakage of air (sf6 gas)	B	PHYSICAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
10.14		Check for earthing connection	B	VISUAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER		

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1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
10.15		Connection in between individual pole unit and control unit.	C	VISUAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER	
10.16		Check for tightening of all bolts & nuts	B	PHYSICAL	100%	APPROVED DRAWINGS AND MFGRS. INSTRUCTION MANUAL		SITE REGISTER	Counter check by NTPC
11.0	RELAY AND PROTECTION PANEL								
	RECEIPT :								
11.1		Check for any external damages to packing.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	If packing case received in damaged condition lodge claim on carrier obtain odc endorse LR/RR.
11.2		Check that all required mountings have been properly mounted.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
11.3		Ensure that the items not mounted are received as loose supply.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	

		LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)			DOC. NO.:		REV.....	
MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		FOR NTPC USE					
SIGNATURE				REVIEWED BY	APPROVED BY	APPROVAL SEAL		

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN				PROJECT :			
			ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:			
SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
11.4		Check that the components / relays mounted are not damaged. damage of any missing items to reported.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		Counter check by NTPC
11.5		Check the doors are operating properly and keys are available.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		No damage to panels acceptable, if any damage complaint to transport insurance agency and supplier.
11.6		Check for loose wires	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		Check up with wiring drawing about loose wires loose left tree. counter check by NTPC.
11.7		Check if gaskets are proper and no damage or missing.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		No damage and missing gaskete are acceptable and complaint to suppliers. Counter check by NTPC.
11.8		Check if indicating bulbs and fuses are received.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		

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MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		FOR NTPC USE						
SIGNATURE				REVIEWED BY		APPROVED BY		APPROVAL SEAL	

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS	INDICATIVE FIELD QUALITY PLAN				PROJECT :	
		ITEM : SWITCHYARD	QP NO.:		PACKAGE :		
		SUB-SYSTEM:	REV. NO.:		CONTRACT NO. :		
			DATE:		MAIN-SUPPLIER:		
			PAGE: OF....				

SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
11.9		Check glass / relays / instruments are in tack.	C	VISUAL	100%	VISUAL, PACKING LIST AND BOM		SITE REGISTER		
	STORAGE :									
11.1		Check panels are properly packed.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL		SITE REGISTER		
11.11		Check panels are kept as per supplier's recommendation	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL				
11.12		Check panels are kept safely	C	VISUAL	100%	MFGRS. INSTRUCTION MANUAL				
11.13		Check panels are kept above the ground as per supplier's recommendations.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL				
11.14		Check panels are kept away from vehicle moving area and easily accessible for shipments.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL		--DO--		
	ERECTION:									
11.15		Check foundation / ground level	B	VISUAL	100%	APPROVED DRAWINGS AND LAYOUT DRG.		SITE REGISTER		
11.16		Check holes / foundations bolts provided as per the civil drawing and panel drawing.	B	VISUAL	100%	APPROVED DRAWINGS AND LAYOUT DRG.		SITE REGISTER		

MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER	SIGNATURE	LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)	FOR NTPC USE	DOC. NO.:		REV.....	
					REVIEWED BY	APPROVED BY	APPROVAL SEAL	

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN				PROJECT :			
			ITEM : SWITCHYARD		QP NO.: REV. NO.: DATE: PAGE: OF....		PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:			
SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
11.17		Check that panels are in level & in line	B	VISUAL	100%	VISUAL		SITE REGISTER		
11.18		Check panels are bolted properly	C	VISUAL	100%	VISUAL		SITE REGISTER		
11.19		Check that no damage to panel will take place during erection.	C	VISUAL	100%	VISUAL		SITE REGISTER		
11.20		Check provision for cable entry from tray upto panel.	C	VISUAL	100%	VISUAL		SITE REGISTER		Panel wiring to be done at site so that connection traceability is proper and panel does not look shabby
12	MARSHALLING BOX / JUNCTION BOX		C	VISUAL				SITE REGISTER		
	RECEIPT :									
12.1		Check for external damage to packing	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		No physical damage. If pkg. extremely damaged take odc endorse LR/RR lodge claim.

		LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)			DOC. NO.:		REV.....		
MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		FOR NTPC USE						
SIGNATURE				REVIEWED BY		APPROVED BY		APPROVAL SEAL	

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS	INDICATIVE FIELD QUALITY PLAN				PROJECT :	
		ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE :	
		SUB-SYSTEM:				CONTRACT NO. :	
					MAIN-SUPPLIER:		

SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
12.2		Check for the quantity general appearance physical condition and paint work. no rust on MKs and JB's when material is received at site	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	No physical damage. If pkg. extremely damaged take odc endorse LR/RR lodge claim.
12.3		Check that all required mountings have been properly mounted, ensure that the items not mounted are received as loose supply.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
12.4		Check that the terminal blocks / terminals are not damaged.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
12.5		Check that necessary cable glands if called for, have been lifted or received loose along with required quantity of inter connecting cables.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
12.6		Check the doors are operating and are properly lockable and that keys are available	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	
12.7		Check that the heater, illuminating lamp and their wiring are intact wherever provided.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER	

MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER	SIGNATURE	LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)	FOR NTPC USE	DOC. NO.:			REV.....	
					REVIEWED BY	APPROVED BY	APPROVAL SEAL		

SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS	INDICATIVE FIELD QUALITY PLAN				PROJECT :	
		ITEM : SWITCHYARD	QP NO.: REV. NO.: DATE: PAGE: OF....			PACKAGE :	
		SUB-SYSTEM:				CONTRACT NO. :	
					MAIN-SUPPLIER:		

SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
12.8		Check for gasketing is proper or missing. Check any glass items (fragile) broken/missing. Check relays, instruments, gauges, meters etc. are in their position.	C	VISUAL	100%	PACKING LIST AND BOM		SITE REGISTER		
	STORAGE :									
12.9		Check that marshalling boxes / junction boxes are stored in a place protected from dirt, dust and ingress of moisture.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
12.10		Check that marshalling boxes / junction boxes are kept in packed condition or atleast covered with polythene covers	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL.		--DO--		
	ERECTION :									
12.11		To erect in foundation with proper size of foundation bolts with nut and washer. erection in vertical portion & as per drawing.	B	VISUAL	100%	MFGRS. INSTRUCTION MANUAL IF ANY OR APPROVED DRAWING.		--DO--		
		Correct placement, alignment & levelling of MBs.								

MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER	LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)	FOR NTPC USE	DOC. NO.:		REV.....	
				REVIEWED BY	APPROVED BY	APPROVAL SEAL	
SIGNATURE							


SUPPLIER'S LOGO	SUPPLIER'S NAME AND ADDRESS		INDICATIVE FIELD QUALITY PLAN				PROJECT :			
			ITEM : SWITCHYARD		QP NO.:		PACKAGE :			
			SUB-SYSTEM:		REV. NO.:		CONTRACT NO. :			
					DATE:		MAIN-SUPPLIER:			
					PAGE: OF....					

SL. NO	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS# OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	D*	10.
		Proper sealing & tightness of MB base plates.								
		Proper sealing & locking arrangement of door.								

INDICATIVE FIELD QUALITY PLAN

		LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS # : A = CRITICAL, B=MAJOR, C=MINOR; 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION / CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)		DOC. NO.:			REV.....		
MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		FOR NTPC USE						
SIGNATURE				REVIEWED BY	APPROVED BY	APPROVAL SEAL			


MFGR.'s LOGO		MANUFACTURER'S NAME AND ADDRESS		INDICATIVE MANUFACTURING QUALITY PLAN						PROJECT :			
				ITEM : LT SWITCHGEAR		QP NO.: REV.NO.: DATE: PAGE: OF....				PACKAGE :			
										CONTRACT NO. :			
SUB-SYSTEM: LT		MAIN-SUPPLIER:											
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.
A	RAW MATERIAL												
1	Angles, channels & Sheet Steel for fabrication (CRCA / HR)	1) Thickness	Major	Meas	1 Sample of each type & size per lot	-	IS-513, IS-1079, IS 2062	NTPC Specification	QC Records/ supplier TC		P	-	-
		2) Surface finish & check for waviness / flatness	Major	Visual	-do-	-	IS-513, IS-1079, IS 2062	Mfr Std/Drg	QC record/ Supplier TC		P	-	-
		3) Bending Test	Major	Mech	Sample	-	IS-513, IS-1079, IS 2062	IS-513, IS-1079, IS 2062	Supplier TC		V	-	-
2.	Busbars – Aluminium & Copper	1) Dimensions	Major	Meas.	1 Sample of each type & size per lot	-	IS-5082 (for Al) IS1897 & IS 613 (for Cu), NTPC Approved Drgs. / data shee	IS-5082 (for Al) IS1897 & IS 613 (for Cu), NTPC Approved Drgs. / data shee	QC record/ Supplier TC	-	P	-	-
		2) Surface finish	Major	Visual	-do-	-	IS-5082 (for Al) IS1897 IS 613 (for Cu),	IS-5082 (for Al) IS1897 IS 613 (for Cu)	QC Record	-	P	-	-
		c) Conductivity	Major	Electrical	As per IS	-	IS-5082 (for Al) IS1897 IS 613 (for Cu)	IS-5082 (for Al) IS1897 IS 613 (for Cu)	QC Records/ supplier TC		P	-	-

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MANUFACTURER/ SUB-SUPPLIER			MAIN-SUPPLIER					
SIGNATURE								
				 FOR NTPC USE		REVIEWED BY 	APPROVED BY 	APPROVAL SEAL

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS	INDICATIVE MANUFACTURING QUALITY PLAN					PROJECT :				
		ITEM : LT SWITCHGEAR		QP NO.:			PACKAGE :				
		SUB-SYSTEM: LT		REV.NO.:			CONTRACT NO. :				
				DATE:			MAIN-SUPPLIER:				
					PAGE: OF....						


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.

B	Bought out items : (For Makes refer Note # 1)												
1	Air Circuit Breaker	1) Type & Rating	Major	Visual	100%	-	IS-13947 Part 2/ NTPC approved drg. / Data sheet	IS-13947 Part 2/ NTPC approved drg. / Data sheet	QC record	-	P	-	-
		2) All routine tests including calibration of releases	Critical	Tests	-do-	-	IS-13947 Part 2/ NTPC approved drg. & Data sheet	IS-13947 Part 2/ NTPC approved drg. & Data sheet	Mfr.'s Compliance TC		V	V	V
2	CT's	1) Overall dimensions & mounting arrangement	Major	Meas.	10% of each type & rating per lot	-	Mfr drg. / NTPC Spec	Mfr drg. / NTPC Spec	QC Record / Supplier TC		P	-	-
		2) Type & Rating	Major	Visual	-do-	10% of each type & rating per lot	NTPC App. Drg. & data sheet	NTPC App. Drg. & data sheet	QC Record		P	-	-
		3) All routine tests as per IS 2705	Critical	Electrical	100%	100%	IS 2705	IS 2705	Supplier's TC		V	V	V
3	PT's	1. Overall dimensions & mounting arrangement	Major	Meas.	10% of each type	-	Mfg Drg.	Mfr. Drg.	QC Record/Supplier's TC		P	-	-
		2) Type & Rating	Major	Visual	-do-	10% of each type & rating per lot	NTPC Appd. Drg/ Data sheet	NTPC app. Drg/Data sheet	QC Record/Supplier's TC		P	V	


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MANUFACTURER/ SUB-SUPPLIER				MAIN-SUPPLIER					
SIGNATURE						REVIEWED BY		APPROVED BY	

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS	INDICATIVE MANUFACTURING QUALITY PLAN						PROJECT :				
		ITEM : LT SWITCHGEAR			QP NO.:			PACKAGE :				
		SUB-SYSTEM: LT			REV.NO.:			CONTRACT NO. :				
						DATE:			MAIN-SUPPLIER:			
						PAGE: OF....						


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.
		3) All routine tests as per IS 3156 (92)	Critical	Electrical	100%	100%	IS 3156	IS 3156	Supplier's TC		V	V	V
4	AC / DC Power & aux. Contactors	1) Type & Rating	Major	Visual	5 sample of each type, make & rating per lot	-	IS-13947 Part 4 sec 1, NTPC appd. drg & Data sheet	IS-13947 Part 4 sec 1, NTPC appd. drg & Data sheet	QC Record/ Swbd TC		P	-	-
5	Air Air Break switches / Fuse Switch units	1) Type & Rating	Major	Visual	5 sample of each type, make & rating per lot	-	IS-13947 Part 3 , NTPC appd. drg & Data sheet	IS-13947 Part 3 , NTPC appd. drg & Data sheet	QC Record/ Swbd TC		P	-	-
6	Timers	1) Type & Rating	Major	Visual	10% of each type, & rating per lot	-	NTPC App. Drg. & data sheet	NTPC App. Drg. & data sheet	QC Record		P	-	-
		2) Compact configuration	Major	Electricazl	-do	-	-do-	-do-	Reg/Sheet		P	-	-
7	HRC Fuses	1) Type & Rating	Major	Visual	10% of each rating per lot	-	Makes as per LOA / Endorsement sheet IS-13703 / NTPC App. Drgs	NTPC Appd. Drgs.	Swbd TC		P	-	-
8	Indicating Instruments	1) Type & Ratings (Calibration report to be verified)	Major	Visual	10% of each rating per lot	10% of each rating per lot	NTPC Appd Drg/ Data sheet	NTPC Appd drg/ data sheet	Supplier's TC		P	V	


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MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER					
SIGNATURE						
			REVIEWED BY	APPROVED BY	APPROVAL SEAL	

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS		INDICATIVE MANUFACTURING QUALITY PLAN						PROJECT :														
			ITEM : LT SWITCHGEAR			QP NO.:			PACKAGE :														
			SUB-SYSTEM: LT			REV.NO.:			CONTRACT NO. :														
						DATE:			MAIN-SUPPLIER:														
			b) Finish & workmanship			Minor		Visual		Sample		-		Compliance to standard Engg. Norms & free from surface defects		-		P		-		-	
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMA T OF RECOR D	AGENCY			REMARKS										
					M	C / N				M	C	N											
1.	2.	3.	4.	5.	6.		7.	8.	9.	D *	** 10.												
		2) Routine tests including calibration & accuracy test reports	Major	Electrical	100%	100%	IS 1248 , NTPC Appr .drg / data sheet	IS 1248 , NTPC Appr .drg / data sheet	Supplier's test report		V	V	V										
9	KWH Meters	1) Type & Ratings	Major	Visual	10% of each type & rating per lot	10% of each type & rating per lot	NTPC Appr .drg / data sheet	NTPC Appr .drg / data sheet	QC Records		P	V	-										
		2) Routine tests including calibration & accuracy test report	Major	Electrical	100%	100%	IS 722 & IS 13779 , 13010 & NTPC Appr .drg / data sheet	IS 722 & IS 13779 , 13010 & NTPC Appr .drg / data sheet	Supplier's test report		V	V	V										
10	Transducers	1) Type & Ratings	Major	Visual	10% of each type & rating per lot	10% of each type & rating per lot	NTPC Appr .drg / data sheet	NTPC Appr .drg / data sheet	QC Records		P	V	-										
		2) Routine tests including calibration & accuracy test reports	Major	Electrical	100%	100%	IS 12784 & NTPC Appr .drg / data sheet	IS 12784 & NTPC Appr .drg / data sheet	Supplier's test report		V	V	V										


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MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		 FOR NTPC USE				
SIGNATURE					REVIEWED BY	APPROVED BY	APPROVAL SEAL

MFGR.'s LOGO		MANUFACTURER'S NAME AND ADDRESS		INDICATIVE MANUFACTURING QUALITY PLAN				PROJECT : PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:					
				ITEM : LT SWITCHGEAR		QP NO.:							
				SUB-SYSTEM: LT		REV.NO.:							
						DATE:		PAGE: OF....					
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMA T OF RECOR D	AGENCY			REMARKS
					M	C / N				M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D *	**	10.	11.
11	Push Button	1) Type, Color & Ratings	Major	Visual	5 samples of each type & rating per lot	-	IS 13947 Part 5 sec1 NTPC App. Drg. & data shee	IS 13947 Part 5 sec1 NTPC App. Drg. & data shee	QC Record		P	-	-
12	IEC 61850 compliant Numerical Relays	1)Type & Rating	Major	Visual	100%	10% of each type, & rating per lot	NTPC appd drg & data sheet	NTPC appd drg & data sheet	QC Records		V	-	-
		2) Routine test certificate	Major	Electrical	100%	100%	IEC 60255 / IEC 61850 Relay Mfr's Specifications	IEC 60255 / IEC 61850 Relay Mfr's Specifications	Supplier's TC	-	V	V	V
		3) Numerical Relay Testing	Major	Electrical	10% of each type, & rating per lot	10% of each type, & rating per lot	As per Approved test procedure No. 9548-206-QVEQ-005	As per Approved test procedure No. 9548-206-QVEQ-005	Procedure No. 9548-206-QVEQ-005	-	P	W	W
13	Control & Selector Switches	1) Type & Rating	Major	Visual	5 samples of each type & rating per lot	-	IS 13947 Part 5 sec1 NTPC App. Drg. & data sheet	IS 13947 Part 5 sec1 NTPC App. Drg. & data sheet	QC Records	-	P	-	-
		2Contact configuration check	Major	Visual	Do	Do	Do	Do	Do	-	P	-	-


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MANUFACTURER/ SUB-SUPPLIER				MAIN-SUPPLIER		 FOR NTPC USE			
SIGNATURE								REVIEWED BY	
						APPROVAL SEAL			

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS		INDICATIVE MANUFACTURING QUALITY PLAN						PROJECT : PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:								
			ITEM : LT SWITCHGEAR			QP NO.:											
			SUB-SYSTEM: LT			REV.NO.:											
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMA T OF RECOR D	AGENCY			REMARKS				
					M	C / N				M	C	N					
1.	2.	3.	4.	5.	6.		7.	8.	9.	D *	**	10.	11.				
14	Overload relay with SPPR facility & Heavy duty starting overload relay	1) Type & Rating	Major	Visual	10% of each type & rating per lot	-	IS-3231 NTPC appd. drg & data sheet	IS-3231 NTPC appd. drg & data sheet	QC Records / Swbd TC		P	-	-				
		2)Routine tests	Major	Electrical	-do-	-	Do		-		P	-	-				
15	Coupling relays	1) Type & Rating	Major	Visual	10% of each type per lot		IS-3231, NTPC appd. drg & data sheet	IS-3231, NTPC appd. drg & data sheet	QC Records		P	-	-				
16	MCB	1) Type & Rating	Major	Visual	-do-	-	IS-8828 & NTPC appd. drg	IS-8828 & NTPC appd. drg	QC Records		P	-	-				
17	Control Transformer	1) Type & Rating	Major	Visual	100%	`	NTPC Appd drg/data sheet	NTPC appd drg/data sheet	QC Records		P	-	-				
18	Insulating barriers & shrouds – (Fire retardant type)	1) Dimensions including thickness check and HV test.	Major	Electrical	5 sample of each type per lot	-	Mfr drg	2.5 KV for 1 min	QC Record		P	-	-				
		2) Flame Resistance	Major	Flame Test	Sampling as per Mfr. Std.	-	IS 6746	IS 6746	-do-		P	V	V				
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			SUB-SYSTEM: LT			REV.NO.:			CONTRACT NO. :																
						DATE:			MAIN-SUPPLIER:																
			c) Eccentricity of insulation & ovality of core			Major		Physical		Sample		-		IEC 60840		IEC 60840		Reg/Sheet		P		-		-	
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.											
19	Busbar Support Insulator	1) Dimension	Major	Meas.	Each setting	-	5 sample of each type per lot	5 sample of each type per lot	QC Records		P	V	V	Insulators to preferably have Batch Identification											
		2) Finish	Major	Visual	-do	-do-	No visual defects	No visual defects	QC Records		P	V	V												
		3) Comparative Tracking Index check	Major	Electrical	1 Sample per lot	-	IS 2824	IS 2824	QC Records		P	V	V												
		4) HV Test	Major	Electrical	-do-	-	BS-2782/IS-8623	2.5 KV for 1 Min	-do-		P	V	V												
		5) IR Test	Major	Electrical	Do	-	-do-	BS-2782/IS-8623	-do-		P	V	V												
		6) Flexural strength test	Critical	Mech.	Do	-	BS-2782	BS 2782	Supplier's TC		V	V	V												
20	Synthetic rubber Gasket / Neoprene rubber gasket	1) Material Type	Major	Visual	Supplier's std	Supplier's std	NTPC spec & IS 11149 / L&T's drgs	NTPC spec & IS 11149 / L&T's drgs	Supplier's Conformance Report		V	-	--	Type, Dimensions & profile of the gaskets should be same as type tested panel gaskets											

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			ITEM : LT SWITCHGEAR			QP NO.:							
			SUB-SYSTEM: LT			REV.NO.:							
						DATE:			PAGE: OF....				
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					M	C / N				M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D *	**	10.	
		2) Dimensions, profile & Visual Inspection	Major	Meas.	-do-	-	L&T's drg	L&T's drg	QC Record		P	-	-
		3) Shore Hardness	Critical	Test	1 Sample per lot	-	NTPC Spec & IS 11149, L&T Drg	NTPC Spec & IS 11149, L&T Drg	Supplier's TC / QC Record		P	V	V
		4) Elongation at break & ageing	Major	Test	Mfr's std	Mfr's std	-do-	-do-	Supplier's TC		V	V	V
		5) Compression Test	Critical	Test	-do-	-	-do-	-do-	-do-		V	V	V
		6) Ozone Resistance Test	Major	Test	-do-	-	-do-	-do-	-do-		V	V	V
21	PVC wires (HR FR Grade)	Verify size, colour and HR-FR Grade	Major	Visual	1 sample of each type & rating per lot	-	IS-694		QC Records/ Mfr's Test Report		P	-	-
22	Space Heater, Thermostat, 3 pin socket, hooter	1) Dimension/ Mounting arrangement	Major	Meas	-do-	-	Purchase spec : Rated Voltage/Current/ wattage	Purchase spec : Rated Voltage/Current/ Wattage	-do-		P	-	-

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					M	C / N				M	C	N		
1.	2.	3.	4.	5.	6.		7.	8.	9.	D *	**	10.	11.	
23 24 25 C 1. 2		2) Function Test	Major	Test	-do-	-	Mfr Std	Mfr. Std	QC Record		P	-	-	
	ACB Handling trolley	Overall dimensions & functional checks	Major	Test	1 sample of each type & rating of first lot	1 sample of each type & rating of first lot	Mfr std/drg	Mfr std/drg	QC Record		P	V	V	
	Terminal Block	Type & Rating	Major	Visual	5 sample of each type & rating per lot	-	NTPC Spec.	NTPC specification	QC Records		P	-	-	
	Paint/Powder	Make, Type & Shelf life	Major	Visual	100%	-	Mfr std	Mfr. Std	-do-		P	-	-	
	IN-PROCESS													
	Fabrication	1) Cutting, Punching, Shearing & Bending	Major	Meas.	Mfr. Practice	-	NTPC Approved GA Drg		QC Records		P	-	-	
		2) panel front door cut-outs punching	Major	Meas.	-do-	-	NTPC Approved GA Drg	NTPC Approved GA Drg	-do-		P	-	-	
	Pretreatment & Painting (powder coating)	1) Pre treatment of sheet steel (all tanks)	Major	Process	-do-	Mfr Practice	Mfr Std practice , NTPC spec., IS- 600	Mfr Std practice , NTPC spec., IS- 600	-do-		P	-	-	
		2) Paint shade	Major	Visual	1 sample per lot	-	NTPC spec. approved drgs.	NTPC Spec. approved Drg. RAL std shade	QC Records		P	V	V	

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