

SUPPLIER'S NAME AND ADDRESS		REFERENCE FIELD QUALITY PLAN						TO BE FILLED IN BY NTPC			
BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT: SPBD (SEGREGATED PHASE BUSDUCT)		Q.P. NO.: REV. NO.: DATE:	BHE/RU/RFPQ/SPBD 0 29.12.2015	SIGNATURE OF SUPPLIER'S	Q.P. No: 0000-999-QVE-T 032 REV: 0 DATE: 22.02.2016 VALID UPTO: 21.02.2019	REVIEWED BY S M Bhaskar Rao B M SHARMA S M Jain	APPROVED BY		
SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW		CHARACTERISTICS / INSTRUMENTS		CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	REMARKS	
SL. NO.	ACTIVITY AND OPERATION	3	4	5	6	7	8	9	10		
1.0	MATERIAL RECEIPT & STORAGE										
1.1		Unloading with use of strap belt/manila ropes near the support channel	C	Visual	100%	Instruction Manual			Logbook		
1.2		Check for packing condition, transit damages (puncture, bend, scratch etc.) and verification of items as per packing list & NTPC clearance. Compliance of Crp remarks to be ensured -if any	B	Physical	At the time of receipt & storage	Instruction Manual, Packing List / Challan	No physical damage. Material Damage Report (MDR) in case of damage		Logbook / MDR		Availability of the instruction manual, BOM, Erection and layout drawings, structural arrangements as site for storage, erection & commissioning to be ensured by BHEL
1.3		Check for completeness of supply viz bus ducts, wall frame, support structure, bushings, rubber bellow, gaskets, splice plates, flexibles, etc as applicable	B	Visual	Once at receipt	Instruction Manual, Packing List / Challan	Instruction Manual, Packing List / Challan		Logbook		
1.4		Ensure that busduct is not kept directly on ground and the exposed part such as palms are covered/wrapped properly. Storage on wooden sleepers / brick pedestal, etc., to ensure that the same is free from water logging. Ensure that BOMs, hardware, copper, electrical items etc are stored in store rooms.	C	Physical	Once at receipt	Instruction Manual / BHEL Document No: BD-15012P	Bus-duct to be stored free from water logging and covered with polythene sheet / BHEL Document No: BD-15012P		Logbook		





LEGEND : * RECORDS IDENTIFIED WITH "TICK" (*) SHALL BE ESSENTIALLY BE 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 DEPARTMENT AND "C" SHALL BE WITNESSED BY ERECTION/SUPPLIER (A & B CHECK SHALL BE NTPC CRP STAGE)
 FORMAT - QS-01-QA/P.10/F2.R0
 ENGG.DIV/QA&I

SUPPLIER'S NAME AND ADDRESS		REFERENCE FIELD QUALITY PLAN							TO BE FILLED IN BY NTPC		
SYSTEM / EQUIPMENT: SPBD (SEGREGATED PHASE BUSDUCT)		QP NO:	BHE/RU/RFPQ/SPBD	SIGNATURE OF SUPPLIERS	QP No: 0000-999-QVE-T-032	REVIEWED BY	APPROVED BY				
SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW		REV. NO:	0	DATE: 29.12.2015	REV: 0	DATE: 22.02.2016	VALID UPTO: 21.02.2019				
CHARACTERISTICS / INSTRUMENTS		CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	REMARKS			
SL. NO.	ACTIVITY AND OPERATION	3	4	5	6	7	8	9	10		
2.0	PRE-ERECTION										
2.1	Before erection of the structure at site, visually material may be seen on random basis for the quality of the galvanization.	II	Measure	Random Check before erection.	Instruction Manual	As per Specification	Logbook				
2.2	Dimensional and level checking of foundation	B	Measure	100%	NTPC Approved Drawings	Handing over protocols from Civil	Logbook				
2.3	Check the equipment for their physical condition and cleanliness	C	Visual	100%	-	Standard Practice					
2.4	Check for position & marking of supporting structures	C	Visual	Once before erection	NTPC Approved Drawings	NTPC Approved Drawings					
3.0	ERECTION										
3.1	Alignment of structure including verticality	B	Measure	100%	NTPC Approved Drawings	NTPC Approved Drawings	Logbook			No iron hammering on bus bar joint bolts is allowed	
3.2	Layout of Bus Ducts and correct phase sequence	B	Physical	100%	NTPC Approved Drawings	NTPC Approved Drawings	Logbook				
3.3	Check for tightness of bolts (Between enclosure, insulator and conductors)	B	Physical	100%	Instruction Manual	Instruction Manual	Logbook				
3.4	Installation of rain hoods at the joints of enclosure	C	Physical	0%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings					
3.5	Fixing of Wall frame Assembly with SOB	C	Physical	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings	Logbook				

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 FORMAT - QS-01-QAL-P-10/F2-R0
 ENGG.DV/QA.61

SUPPLIER'S NAME AND ADDRESS		REFERENCE FIELD QUALITY PLAN						TO BE FILLED IN BY NTPC		
BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT: SPBD (SEGREGATED PHASE BUSDUCT)	QIP NO.: REV. NO.: DATE:	BHE/RU/RFP/SPBD 0 29.12.2015	SIGNATURE OF SUPPLIER'S	QIP No: 0000-999-QVE-T-032 REV: 0 DATE: 22.02.2016 VALID UPTO: 21.02.2019	REVIEWED BY	APPROVED BY		
SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW		CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	REMARKS	
1.	2.	3	4	5	6	7	8	9	10	
3.6	Check for alignment of enclosure, conductor and SOB		B	Measure	100%	Instruction Manual	Instruction Manual	Logbook		
3.7	Check for fixing of splice plate, flexible etc		C	Physical	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings / Instruction Manual	Logbook		
3.8	Cleaning of conductor, Porcelain insulators and enclosure splice plates, flexible, SOB, etc		C	Physical	100%	Instruction Manual	Instruction Manual	Logbook		
3.9	Dimension & Alignment checking for Conductors, Enclosures, Cubicles, rain hoods, etc		B	Measure	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings / Instruction Manual			
3.10	Ensure only approved make electrodes and consumables are received and packed in sealed polythene cover		C	Physical	100%	Instruction Manual	Instruction Manual			
3.11	WPS & PQR		A	Verify	100%	NTPC approved WPS	NTPC approved WPS			
3.12	Clearance between phase conductor and enclosure before welding		B	Measure	100%	NTPC Approved Drawings	NTPC Approved Drawings	Logbook		
3.13	Ensure that welder qualification test is done and approved before actual welding work is taken up		A	Test	100%	NTPC approved WPS	ASME SEC-IX	Logbook	If applicable	
3.14	Welding on conductor & enclosure: (a) Root Welding (for Conductor only) (b) Final welding		B	Physical	100%	NTPC approved WPS	NTPC approved WPS	Logbook		
3.15	NDT: DPT to be done for conductor & enclosure butt weld joints.		B	Test	As per NTPC Spec.	Welding Manual	Welding Manual	Logbook		
3.16	Radiography test on site welded joints of bus bar and enclosure		A	Test	As per NTPC Spec.	Welding Manual	Welding Manual	Logbook		
3.17	mV drop test on site welded joint / Splice plate		A	Test	100%	IS-5561	IS-5561	Logbook		

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 FORMAT - QS-01-QAJ P.10 F2.80
 ENGG.DIV/QA & I

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 BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT:		Q.P. NO.	BHE/RU/RQP/SPBD	SIGNATURE OF SUPPLIER'S	Q.P. No: 0000-999-QVE-T	REVIEWED BY	APPROVED BY		
		SPBD (SEGREGATED PHASE BUSDUCT)		REV. NO.:	0	 Ajit K. Sahay, Mgr/FES/PPC	032	 S. M. Bhatnagar	 S. M. Bhatnagar		
		SUB SYSTEM:		DATE:	29.12.2015		REV: 0	DATE: 22.02.2016			
		APPLICABLE FOR 500 MW, 660 MW, 800 MW		PAGE:	4 of 4		VALID UPTO: 21.02.2019				
SL. NO.	ACTIVITY AND OPERATION	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	REMARKS		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.		
3.18		IR value of each bus duct element before erection (Min. 2.5 kV Insulation Tester)	B	Test	100%	IS-8084	IS-8084	Logbook			
3.19		Positioning of rubber bellows & gaskets	C	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.20		Earthing of busducts, structure, etc	B	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.21		Setting of thermostats	B	Visual	100%	Instruction Manual	Instruction Manual	Logbook			
3.21		Drain plug assembly for effective drain out	C	Verify	100%	Instruction Manual	Instruction Manual				
3.22		Silica gel breather assembly	C	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.23		Completeness of Bus duct Assembly	B	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.24		IR of each completed bus duct section after erection	B	Test	100%	IS-8084	IS-8084	Logbook	✓		

NOTE: All commissioning tests are to be conducted as per NTPC Technical Specification.

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 ENGG.DIV/QA&I

ROURKELA PP-II EXPANSION (1 X 250 MW)

COMPLIANCE REPORT

DOCUMENT NO. : QPE:RKL:250:EL:56 (FIELD QUALITY PLAN FOR SEGREGATED PHASE BUS-DUCT)

SL. NO.	Customer/Consultant Comment Dt: 29.04.2017	BHEL Reply Dt : 18.05.2017
1	VENDOR IS NOT APPEARING IN THE APPROVED VENDOR LIST	<ul style="list-style-type: none">Approval for BHEL-Rudrapur as an approved manufacturer of IPBD & SPBD received from NSPCL vide email dated 09/05/2017