



ENDORSEMENT SHEET FOR QP REFERENCE / STANDARD / <u>FIELD</u> QUALITY PLAN (RQP / SQP/RFQP/SFQP)		
<i>TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION</i>		 To be filled in by NTPC
PROJECT NAME	NPGCL, NABINAGAR (3X660 MW)	REVIEW & ENDORSEMENT BY NTPC PROJECT SPECIFIC QP NUMBER ALLOTTED QP NO.: 0370-207-QVE-G-201 REV. NO.: 02 DATE: 30-03-2016 ** The RQP/SQP/RFQP/SFQP once endorsed for a particular contract shall remain valid even though the original QP may have expired or revised, unless / otherwise mutually agreed with the supplier. ①
CONTRACT NO	CS-0370-207-2-FC-COA-003	
CONTRACT NAME	GENERATOR BUSDUCTS AND ASSOCIATED EQUIPMENT, MV BUSDUCTS PACKAGE	
MAIN SUPPLIER	BHARAT HEAVY ELECTRICALS PVT.LTD – RUDRAPUR(UK)	
MANUFACTURER WORKS & ADDRESS	M/S BHARAT HEAVY ELECTRICALS LTD RUDRAPUR, US NAGAR, UTTARAKHAND-263153	
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE / SIZE /RATING etc.	ISOLATED PHAS E BUSDUCT AND ASSOCIATED EQUIPMENTS	
APPROVED QP NO: 0000-999-QVE-T-031	0000-999-QVE-T-031 REV. NO.:0 DATED**:23.02.16	
<i>Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)</i>		<i>(TICK APPLICABLE)</i>
I. That the item/ component is identical to that considered for QP approval. OR. ✓		The QP is endorsed for this project without any change ✓
II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR		
III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet.		The QP is endorsed for this project with changes as indicated.
		<u>DISTRIBUTION OF ENDORSEMENT OF</u> A) RQP/SQP: 1. MAIN SUPPLIER (WITH A COPY OF QP) 2. MANUFACTURER 3. RIO 4. CQA-SPL 5. CQA-O/C B) RFQP/SFQP: 1. MAIN SUPPLIER (with a copy of QP) 2. MANUFACTURER 3. NTPC FQA (with a copy of QP) 4. NTPC Erection (with a copy of QP) 5. CQA-SPL 6. CQA-O/C
 SIGN.: (Main Supplier) DATE: 29.03.16	 SIGN.: (Manufacturer):	NTPC (Reviewed /Approved by/ Date & Seal)



NTPC LTD.
(ENGINEERING DIVISION)
ENGINEERING OFFICE COMPLEX
A-8A, SEC-24, NOIDA, U.P. 201301
PH.: 011- 4946882 FAX 91-2410208

TRANSMITTAL FOR DOCUMENTS

FROM : AGM (QA-SPL)

REF. : 01/CQA/0000-SPL-01

DATE : 23/02/2016

: M/s BHEL Component
FABRICATION
PLANT, RUDRAPUR

CC: RIO -

Please find enclosed following documents for necessary action at your end as indicated in purpose code

	Item	RQP No	Rev No	No. of Copies	Purpose code	Remarks
01	IPBD (ISOLATED PHASE BUSDUCT)	0000-999-QVE-T-031	00	01	11	

- 1.Approved in CAT-1
- 2.Approved in CAT-II With comments resubmit
- 3.Not APPROVED- CAT-III
- 4.Approved in CAT-IV(For information only)
- 5Released for Fabrication/Construction

- 6.for your comments
- 7.Revised as per your comments
8. For your approval
- 9.for your information
- 10.As-built
- 11.Approved for Reference subject to approval of Endorsement sheet





SIGNATURE :

NAME :

B.C.ROY



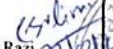
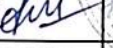

FORMAT NO. : QS-01-DIV-P-02/F2-

ENGINEERING DIVISION

SUPPLIER'S NAME AND ADDRESS:		REFERENCE FIELD QUALITY PLAN					TO BE FILLED IN BY NTPC		
 BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT: IPBD (ISOLATED PHASE BUSDUCT)		QP NO.: BHE/RU/RFQP/IPBD	SIGNATURE OF SUPPLIER'S  Ajit Ku. Sahay, Mgr(FES/PPC)			TO BE FILLED IN BY NTPC QP No: 0000-999-QVE-T-031 REV: 0 DATE: 22.02.2016 VALID UPTO: 21.02.2019	
		SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW		REV. NO.: 0			DATE: 29.12.2015	REVIEWED BY S M Ibrahim Razi H SHEKHAR Sunil Malani	APPROVED BY  K.M. Jain
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
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	Availability of the instruction manual, BoM, Erection and layout drawings, structural arrangements at site for storage, erection & commissioning to be ensured by BHEL.
1.2		Check for packing condition, transit damages (puncture, bend, scratch etc.) and verification of items as per packing list & NTPC clearance. Compliance of CHP 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	
1.3		Check for completeness of supply viz.bus ducts, wall frame, support structure, bushings, rubber bellow, gaskets, splice plates, flexibles, LA, CT, VT, NGR, NGT 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 BOIs, hardware, copper, electrical items etc are stored in store rooms and NGT, NGR, CT, PT to be stored in covered area/shed.	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 CHP STAGE)

FORMAT - QS-01-QAI-P-10/F2-R0




SUPPLIER'S NAME AND ADDRESS:		REFERENCE FIELD QUALITY PLAN				TO BE FILLED IN BY NTPC			
 BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT:	QP NO.:	BHE/RU/RFQP/IPBD	SIGNATURE OF SUPPLIER'S  Ajit Ku. Sahay, Mgr(FES/PPC)	QP No: 0000-999-QVE-T-031	REVIEWED BY	APPROVED BY	
		IPBD (ISOLATED PHASE BUSDUCT)	REV. NO.:	0		DATE: 29.12.2015	REV: 0	S M Ibrahim Razi H SHEKHAR	 31/01/2016
		SUB SYSTEM:	DATE:	29.12.2015		DATE: 22.02.2016	Sunil Malani 	 K M Jain	
		APPLICABLE FOR 500 MW, 660 MW, 800 MW	PAGE:			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	D* 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.	B	Measure	Random Check before erection	Instruction Manual	As per Specificatiojn	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		
2.5		IR value of each bus conductor before erection (Min. 2.5 KV Insulation Tester)	C	Test	100%	IS-8084	IS-8084	Logbook	
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		Fixing of Wall frame Assembly with SOB (if any)	C	Physical	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings	Logbook	
3.5		Check for alignment of enclosure, conductor and SOB	B	Measure	100%	Instruction Manual	Instruction Manual	Logbook	

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FORMAT - QS-01-QAI-P-10/F2-R0

ENGG.DIV/OA & I

SUPPLIER'S NAME AND ADDRESS:		REFERENCE FIELD QUALITY PLAN				TO BE FILLED IN BY NTPC			
 BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT:	QP NO.:	BHE/RU/RFQP/IPBD	SIGNATURE OF SUPPLIER'S  Ajit Ku. Sahay, Mgr(FES/PPC)	QP No: 0000-999-QVE-T-031 REV: 0 DATE: 22.02.2016 VALID UPTO: 21.02.2019	REVIEWED BY	APPROVED BY	
		IPBD (ISOLATED PHASE BUSDUCT) SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW	REV. NO.:	0			S M Ibrahim Razi H SHEKHAR Sunil Malani K M Jain		
DATE:	29.12.2015	PAGE :							
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
3.6		Check for fixing of splice plate, flexible, rubber bellow etc	C	Physical	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings / Instruction Manual	Logbook	
3.7		Cleaning of conductor, Porcelain insulators and enclosure splice plates, flexible, SOB, etc	C	Physical	100%	Instruction Manual	Instruction Manual	Logbook	
3.8		Ensure that eye-bolts are used for lifting of cubicles & generator adopters	C	Physical	100%	Instruction Manual	Instruction Manual		
3.9		Dimension & Alignment checking for Conductors, Enlosures, Cubicles, etc	B	Measure	100%	NTPC Approved Drawings / Instruction Manual	NTPC Approved Drawings / Instruction Manual		
3.10		Check physically insulators after fixing busbars in the Adopter box	B	Measure	100%	Instruction Manual	Instruction Manual	Logbook	
3.11		Ensure only approved make electrodes and consumables are received and packed in sealed polythene cover	C	Physical	100%	Instruction Manual	Instruction Manual		
3.12		WPS &PQR	A	Verify	100%	NTPC approved WPS	NTPC approved WPS		
3.13		Clearance between phase conductor and enclosure before welding	B	Measure	100%	NTPC Approved Drawings	NTPC Approved Drawings	Logbook	
3.14		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	
3.15		Welding on conductor & enclosure: (a) Root Welding (for Conductor only) (b) Final welding	B	Physical	100%	NTPC approved WPS	NTPC approved WPS	Logbook	




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DEPARTMENT AND "C" SHALL BE WITNESSED BY ERECTION/SUPPLIER (A & B CHECK SHALL BE NTPC CHP STAGE)

FORMAT - QS-01-QAI-P-10/F2-R0

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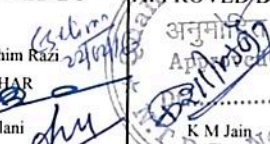
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		IPBD (ISOLATED PHASE BUSDUCT) SUB SYSTEM: APPLICABLE FOR 500 MW, 660 MW, 800 MW	REV. NO.:	0	 Ajit Ku. Sahay, Mgr(FES/PPC)			H SHEKHAR		 Sunil Malani	
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1.	2.	3	4	5	6	7	8	9	D*	10	
3.16		Cleaning/removal of welding spatters, slag, burr, electrode stub/butt, etc.	C	Physical	100%	-	Standard Practice				
3.17		NDT: DPT to be done for conductor & enclosure butt weld joints.	B	Test	As per NTPC Spec.	Welding Manual	Welding Manual	Logbook			
3.18		Radiography test on site welded butt joints of bus bar and enclosure	A	Test	As per NTPC Spec.	Welding Manual	Welding Manual	Logbook	v		
3.19		mV drop test on site welded joint	A	Test	100%	IS-5561	IS-5561	Logbook	v		
3.20		IR value of each bus duct element (Min. 2.5 KV Insulation Tester) before erection	B	Test	100%	IS-8084	IS-8084	Logbook			
3.21		Polarity and ratio of CTs and their placement	B	Test	100%	NTPC Approved Drawings / Instruction Manual	IS-2705	Logbook	v		
3.22		Check CTs' secondaries are kept shorted until connected to respective instrument /relays.	B	Visual	100%	CT Wiring Drawing	CT Wiring Drawing	Logbook			
3.23		Crimping, ferrule numbering and check of wiring (as per wiring diagram) inside CT Terminal box	C	Physical	100%	CT Wiring Drawing	CT Wiring Drawing				
3.24		Positioning of rubber bellows & gaskets	C	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.25		Earthing of busducts, structure, NG cubicles & shunt	B	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings				
3.26		Setting of thermostats	B	Visual	100%	Instruction Manual	Instruction Manual	Logbook			
3.27		Trial Run and operation of Air Pressurization Equipment / Hot Air Blowing Equipment	B	Physical	100%	Instruction Manual	Instruction Manual	Logbook			

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FORMAT - QS-01-QALP-10/F2-R0

ENGG DWG/01

SUPPLIER'S NAME AND ADDRESS:		REFERENCE FIELD QUALITY PLAN				NTPC		TO BE FILLED IN BY NTPC		
 BHEL, COMPONENT FABRICATION PLANT, RUDRAPUR		SYSTEM / EQUIPMENT:	QP NO.:	BHE/RU/RFQP/IPBD	SIGNATURE OF SUPPLIER'S  Ajit Ku. Sahay, Mgr(FES/PPC)	QP No: 0000-999-QVE-T-031 REV: 0 DATE: 22.02.2016 VALID UPTO: 21.02.2019	REVIEWED BY S M Ibrahim Razi H SHEKHAR Sunil Malani	APPROVED BY  K M Jain		
		IPBD (ISOLATED PHASE BUSDUCT)	REV. NO.:	0						
		SUB SYSTEM:	DATE:	29.12.2015						
		APPLICABLE FOR 500 MW, 660 MW, 800 MW	PAGE:							
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1.	2.	3	4	5	6	7	8	9	D* 10	
3.28		Bus bar connections to NG Transformer & NGR	C	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings		FOR NG CUBICLE	
3.29		Function of heaters	C	Verify	100%	Instruction Manual	Instruction Manual	Logbook		
3.30		Free movement of panel doors	C	Verify	100%	Instruction Manual	Free Movement			
3.31		Check for earthing connections of Neutral Grounding Cubicles and associated equipment	B	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings			
3.32		Checking IR value of NGT (Insulation tester)	B	Test	100%	Instruction Manual	Instruction Manual	Logbook		
3.33		Wiring and continuity check	C	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings			
3.34		Movement of trolleys	C	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings			
3.35		Check of proper shrouding and size of bolts	C	Verify	100%	NTPC Approved Drawings	NTPC Approved Drawings			
3.36		Limit switch operation	C	Verify	100%	Instruction Manual	Instruction Manual			
3.37		Completeness of Bus duct Assembly	B	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings			
3.38		IR of each completed bus duct section after erection	B	Test	100%	IS-8084	IS-8084	Logbook	v	
NOTE: All commissioning tests are to be conducted as per NTPC Technical Specification.										

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