

		MANUFACTURER'S NAME AND ADDRESS: BHARAT HEAVY ELECTRICALS LIMITED, PIPLANI, BHOPAL - 462 022		STANDARD MANUFACTURING QUALITY PLAN					PROJECT:							
									PACKAGE: ELECTROMECHANICAL							
				ITEM: MACHINING OF FRANCIS RUNNER BLADE		QP NO.: QA/HT/2013 REV.NO.: 00 DATE: 04/02/2020 PAGE: 01 OF 01		ENQUIRY / PO NO.:								
								MAIN-SUPPLIER: BHEL, BHOPAL								
SL. NO	COMPONENT & OPERATIONS		CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REF. DOC.	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS	
						M	C / B					M	C	B		
	1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	** 10.			11.	
1.	CHECKING OF CHORD															
1.1	Checking of chord at corners of the blade			Major	Measurement	100%	100%	Drawing /BHEL Observation sheet		QCR	√	P	W	W		
2.	PROFILE CHECKING															
2.1	Longitudinal & transverse profile checking at suction & pressure side			Major	Measurement	100%	100%	Drawing /BHEL Observation sheet		QCR	√	P	W	W		
2.2	Inlet & Outlet profile checking			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
2.3	Inlet & Outlet nose profile checking			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
2.4	Internal reports of Profile checking			Major	Measurement	100%	100%	-do-		IR	√	P	W	V	Refer foot-note 1	
3.	Inlet & outlet angle check			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
4.	Thickness check at identified sections			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
5.	Waviness check			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
6.	Surface Finish Check			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
7.	Weld edge preparation check			Major	Measurement	100%	100%	-do-		QCR	√	P	W	W		
8.	Weight of individual blade			Minor	Measurement	100%	100%	-do-		QCR	√	P	W	V		
9.	Identification & Packaging			Major	Visual	100%	100%	Purchase Order / BHEL drawing		CoC	√	P	W	W		
 QA-HYDRO				 H.T.E.				 FABRICATION				LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER/SUB-SUPPLIER C: SUPPLIER/ SUPPLIER NOMINATED INSPECTION AGENCY, B: BHEL/ BHEL APPOINTED INSPECTION AGENCY P: PERFORM W: WITNESS AND V: VERIFICATION IR- INSPECTION REPORT QCR-QC REPORT TC- TEST CERTIFICATE RR – REVIEW OF RECORD COC: CERTIFICATE OF COMPLIANCE				
PREPARED& REVIEWED BY (BHEL QA, DESIGN & FABRICATION)												ACCEPTED BY (VENDOR'S QC REPRESENTATIVE)				

- Internal report for clauses 2.1 to 2.3 shall be furnished by vendor for verification in which observations are recorded on machine during profile machining, while keeping both side templates to ensure machining dimension accuracy of blade while the blades are on the machine.
- Marking/ Reference is to be provided by vendor for profile checking by template.