




MANUFACTURER'S Logo		MANUFACTURER'S Name and Address		STANDARD MANUFACTURING QUALITY PLAN			Project :			
				Item : FRANCIS PUMP IMPELLER / RUNNER CASTING SUB-System: FRANCIS TURBINE / PUMP	QP No. : QA/HT/2132 Rev.No. : 00 Date : 19.07.2021 page : 01 OF 02	PO /Indent No:				
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT / ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY		REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	1	2	10.
1	Melt analysis	Chemical composition	Major	Chemical test	One Sample / Heat	-do-	TC	P	V	
2	Gas Analysis	Gas composition	Major	Chemical test	One Sample / Heat	-do-	TC	P	V	Hydrogen, Oxygen and Nitrogen
3	Preliminary NDT	NDT of casting before heat treatment	Major	UT /RT	100%	-do-	TC	P	V	
4	Defect Excavation	Inspection of defect mapping & excavation	Critical	Visual/ UT/MPI /DPT	100%	-do-	TC	P	V	Photographs of defects & repair welding; in addition to defectograms to be submitted
5	Rectification welding	Qualification of WPS & welder	Major	Performance test	Qualification of WPS & welder	-do-	TC	P	V	
6	Heat treatment	Temp. /Time Control	Major	Process control	100%	-do-	CHART	P	V	
7	Identification of casting & keel block	Physical verification & Stamping	Major	Visual	100%	-do-	JIR	P	W	
8	Mechanical Test	Mechanical properties including impact test	Critical	Mechanical	One Sample / Heat	-do-	JIR	P	W	
9	Microstructure	Review of microstructure	Major	Metallurgical	One Sample / Heat	-do-	TC	P	V	
10	NDT	NDT after heat treatment	Major	UT/MPI/ DPT/RT	100%	-do-	TC	P	V	
11	Defect Excavation	Inspection of defect mapping & excavation	Critical	Visual/ UT/MPI /DPT	100%		TC	P	V	
12	Stress relieving	SR after repair welding	Major	Process control	100%	-do-	TC	P	V	
LEGEND: 1: MANUFACTURER/SUB-SUPPLIER 2: BHEL/ NOMINATED INSPECTION AGENCY W: WITNESS AND V: VERIFICATION RR – REVIEW OF RECORD IR – INTERNAL RECORD JIR – JOINT INSPECTION REPORT						FOR CUSTOMER USE		DOC. NO.:		REV..... CAT.....
MANUFACTURER/ SUB-SUPPLIER		MAIN-SUPPLIER		SIGNATURE		REVIEWED BY		APPROVED BY		APPROVAL SEAL


 19-07-21
 AADHAR SHARMA
 Dy. Manager
 QWT Division
 BHOPAL

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1.	2.	3.	4.	5.	6.	7.	8.	9.		10.				
13	Final NDT	NDT after SR	Major	UT/MPI/ DPT/RT	100%	-do-	JIR	P	W					
14	Profile check	Blade Pitch, thickness, profile check	Major	Visual / Measurement	100%	Drawing / Relevant standard	JIR	P	W					
15	Dimensions & Surface finish	Dimension check/Surface finish of rough machined casting	Major	Measurement	100%	-do-	JIR	P	W					
16	Hardness Survey	Hardness	Major	Measurement	At random points with special focus on weld repairs	-do-	JIR	P	W					
17	Balancing	Static balancing	Major	Measurement	100%	-do-	JIR	P	W					
18	Identification	Hard punch	Major	Visual	-	-do-	TC	P	V					
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MANUFACTURER/ SUB-SUPPLIER		MAIN-SUPPLIER		SIGNATURE					REVIEWED BY		APPROVED BY		APPROVAL SEAL	


 19-07-21
 सखीत दुबे / NAVNEET DUBEY
 प्रबंधक / Manager
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