

		PROJECT: ARUN 3 HEP (4x225 MW)		MANUFACTURING QUALITY ASSURANCE PLAN						MANUFACTURER: Bharat Heavy Electricals Limited, Bhopal			
ITEM DESCRIPTION		SUB-ITEM		QAP & REV QA/HT/1071 Rev -03		ISSUE DATE 18.06.2019							
VERTICAL FRANCIS TURBINE		Shaft Seal Assembly		REFERENCE DOCUMENT		ACCEPTANCE SCHEM							
CHARACTERISTICS		CLASS		TYPE OF CHECK		MA		S					
COMPLETION		3		4		5		6		7		8	
1		2		3		4		5		6		7	
REMARKS												11	

M. Shaft Seal Assembly																
1.0	In-Coming Material															
1.1	Material check for raw materials	Chemical Composition	MA	Test	Sample	Sample	Relevant material standard as per approved Drg						TC	P	V	V
		Mechanical Properties	MA	Test	Sample	Sample	-do-						TC	P	V	V
		UT (for plates thk > 12 mm)	MA	NDT	100%	100%	ASTM-A578 LEVEL B						TC	P	V	V
		Plate Thickness/ size visual check	MN	ME/Vis	100%	100%	DRG/ Relevant Standard						TC	P	V	V
		Heat treatment	MN	Review	100%	100%	-do-						Chart	P	V	V
2.0	In- Process and Final inspection															
2.1	WPS, PQR & WQR	Review	MN	-	-	DRG /ASME		DRG /ASME		TC	P	V	V			
2.2	Stress Relieving	Review of T-T Charts	MN	Review	100%	100%	Drawing				Chart	P	V	V		
2.3	NDT	DPT/ MPI &UT	MA	NDT	100%	100%	ASME Sec-VIII /DRG				IR	P	V	V		
2.4	Dimensional & Visual Check of assembly	Final Main dimensions, fit-up & clearances	MA	ME	100%	100%	DRG		DRG		IR	P	W	W		
2.5	Assembly of shaft seal with Head cover	Alignment, fit-up & match marking	MA	ME	100%	100%	DRG		DRG		IR	As per approval of M/s SJVNL during detailed design.				
2.6	Painting & protection	Surface preparation, paint thickness & adhesion	MN	ME	100%	100%	DRG		DRG		TC	P	V	V		

Prepared By: 	Reviewed By: 	Approved By: 
		