

Supplier's LOGO	Supplier's Name and Address		Quality Plan for SS Central Bar, Top/Bottom Plate					QP:RM:GHAVP:02 Rev 00 Project: GHAVP 1& 2 W.O : D157 to D160-001-1-93-171 P.O No: To be filled				
			Item : SS Central Bar and Top& Bottom Plate (DIN EN 10028-7, 1.4550/1.4571) Sub-system: Steam Generator		QP No.: To be filled by Supplier Rev.No.: To be filled by Supplier Date: To be filled by Supplier Page No:1 of 4							
Sl. No	Component & Operations	Characteristics	Type of Check	Quantum Of check	Reference Document	Acceptance Norms	Format of Record		Agency			Remarks
									M	B	N	
1.	2.	3.	4.	5.	6.	7.	8.	D*	9. **			10.
1.0 Raw Material :												
1.1	Steel Melting : :Melting in electric furnace :Vacuum Degassing	Steel melting	Record Verification	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R		Steel shall be fully killed.
1.2	Ladle Analysis	Chemistry	Chemical analysis	1/Melt	PC-M-961/01 MPP: To be submitted	TC	√	P	R	R		---
1.3	Semi Product (Slab) casting	Free from defects	Visual/Record verification	100%	MPP: To be submitted	RD	--	P	--	R		---
2.0 In process Controls :												
2.1	Forming Process	Forming process , MWD	Record verification	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R			Method of Forming to be filled
2.2	Marking after forming	Identifications	Verification and Visual	100%	PC-M-961 Rev 01	RD	--	P	R			---
2.3	Heat Treatment (Solution Annealing)	R.O.H , Soaking Temp & Time, R.O.C	Review of HT Chart	100%	PC-M-961 Rev 01 HT Plan: To be submitted	TC	√	P	W	R		Chart shall be signed at the start and End of Heat treatment and submitted along with TC

				LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: SUPPLIER B: BHEL, N: NPCIL/TPI P: PERFORM R: REVIEW W: WITNESS AND H: HOLD TC: TEST CERTIFICATE RD: RECORD
Prepared	Reviewed & Approved	Reviewed & Approved	Reviewed & Approved	
SUPPLIER'S NAME: To be filled		BHEL	NPCIL	


 08/11/18
 (MATHIN.ORK)

S. Lakshmi
 08/11/18

S. LAKSHMI
 Deputy General Manager
 Quality Assurance
 BHEL, Trichy - 620 014.

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2.4	Identification of Test coupon and Cutting	Location and orientation	Visual & Measurement	100%	PC-M-961/01 MPP & MSTP: To be submitted	RD	√	P	W	W	---	
2.5	Mechanical descaling	Surface Inspection , Free from Visual Defects	Visual	100%	PC-M-961/01 Free from Visual Defects	RD	√	P	---		Surface Should be smooth and free of scales	
2.6	Pickling and Passivation of Plate	Completeness	Visual & passivity check	100%	PC-M-961/01 MPP: To be submitted	TC	√	P	R		---	
2.7	Final Dimensional check	Dimensions	Measurement	100%	Drg No/P.O No: To be filled	TC	√	P	R		---	
2.8	Ultrasonic Inspection (USI)	Internal soundness	Ultrasonic Test	100%	PC-M-961 Rev 01 EN10307 UT Procedure: To be submitted	TC	√	P	W	W	Surface shall be cleaned after USI	
2.9	Specimens preparation	Dimensions	Measurement	100%	MSTP: To be submitted PC:M:961 Rev 01	RD	--	P	W	W	---	
2.10	Mechanical and Metallurgical Tests :											
2.11	Product analysis	Chemistry	Chemical analysis	1 / Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	R	Note-2	
2.12	Tensile at RT	Tensile Strength, Yield Strength (0.2% offset), % Elongation	Destructive Test	1/Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	W	--	
2.13	Tensile at 350° C	Tensile Strength, Yield Strength (0.2% offset)	Destructive Test	1/Batch	PC-M-961 Rev 01 MSTP: To be submitted EN10028-7	TC	√	P	W	W	--	

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SUPPLIER'S NAME: To be filled		BHEL	NPCIL	


 08/11/18
 (NITHIN)

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2.14	Corrosion Test (in solution annealed condition)	Inter Granular Corrosion	IGC Test	1/Batch	PC-M-961 Rev 01 ASTM A 262 Practice-E MSTP: To be submitted	TC	√	P	W	W	Without sensitization	
2.15	Corrosion Test (after sensitization)	Inter Granular Corrosion	IGC Test	1/Batch	PC-M-961 Rev 01 ASTM A 262 Practice-E MSTP: To be submitted	TC	√	P	W	W	Sensitization-650° x 30 Minutes	
2.16	Micrograph & grain size	Micro structure, Grain Size	Micro test , Grain size check	1/Batch	PC-M-961 Rev 01 ASTM E112 MSTP: To be submitted Grain Size to be reported EN10028-7	TC	√	P	W	R	---	
2.17	Hardness	Hardness	Brinell / Rockwell Hardness	1/Batch	PC-M-961 Rev 01 Value to be reported.	TC	√	P	W	W	---	
3.0	Final Inspection											
3.1	Visual Inspection	Free from visual defects	Verification and Visual	100%	PC-M-961 Rev 01	TC	√	P	W	R	---	
3.2	Marking	SI No, Heat Number, Material designation, Supply condition, Inspectors Seal, Manufactures name , P.O Number.	Verification and Visual	100%	PC-M-961 Rev 01	TC	√	P	W	W	---	
3.3	Mix up Test	Positive Material Identification	PMI Test	100%	PC-M-961 Rev 01	TC	√	P	W	R	---	
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Prepared		Reviewed & Approved		Reviewed & Approved		Reviewed & Approved						
SUPPLIER'S NAME: To be filled		BHEL		NPCIL								


 (MITHAN OR)

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3.4	Certification and Documentation Control	Order compliance	Certificate compilation	100%	PC-M-961 Rev 01	TC	√	P	R	R	---	
3.5	Documents (Test Certificates) shall be sent to BHEL/Trichy prior to dispatch. Dispatch clearance will be given after Acceptance of Test Certificates by BHEL&NPCIL)					RD	--	P	H	H	---	
3.6	Packing & Shipment	Packing	Visual	100%	PC-M-961 Rev 01	---	--	P	R	R	---	

Note:

1. MSTP (Material Sampling Plan) , MPP(Manufacturing Process plan), Heat Treatment Plan, Ultrasonic test procedure shall be submitted by Supplier and the same will be subjected to both BHEL&NPCIL approval.
2. This Quality plan is applicable for SS Central bar(6t x50wx2104L) and Top &Bottom Plate(6tx90wx2042L)

N.P.C.I.L.
08/11/18

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