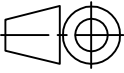


INVENTORY NO	SIGN. AND DATE	REF. DRG. NO.	A4 FORMAT	THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY	REVISION REASON:			REVISION REASON:			
					REV.	DATE	ALTERED	REV.	DATE	ALTERED	
							CHECKED			CHECKED	
GEN. DIM. LIMITS , FITS , & TOLERANCES AS PER P.S :- HY0230261											
CONSULTANT:											
			BECHTEL FREDERICK, MARYLAND, U.S.A								
PROJECT:			STG PACKAGE (4 X 93.1 MW STGs), CCPP HAZIRA MANUFACTURING DIVISION (HMD) STG PACKAGE (3 X 90.3 MW STGs), CCPP DAHEJ MANUFACTURING DIVISION (DMD)								
CUSTOMER:			RELiance INDUSTRIES LIMITED COAL BASED CAPTIVE POWER PLANT (CCPP)								
RIL DRG. NUMBER DAHEJ:			10091-G69-DAT000-BHB-0001								
RIL DRG. NUMBER HAZIRA:			10090-G69-HAT000-BHB-0001								
			BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SIGN.	DATE	NO.OF VAR.	
						DRN.	KD	---	04.03.14		
						CHD.	KG	---	04.03.14	-N.A-	
						APPD.	PSB		04.03.14		
DEPT. PE&SD	UNTOL. DIMS. GR.		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS				
CODE 450	ø/M/ℓ		-NTS-	-N.A-	-N.A-	-N.A-	-N.A-				
TITLE :					CARD CODE	BHEL DRAWING NO.			REV.		
Painting and Coating Schedule (STG BOP)					-N.A-	PEMC-04398			00		
					SHT. No 01		NO. OF SHT. 07				

PAINTING & COATING SCHEDULE FOR RIL- DMD

Sl.No.	Equipment/ Surface	Units involved	Area/ Location	Arrangement (Indoor / Outdoor)	Temp.	Surface Prepatation	Primer or 1 st Coat Name of paint /DFT	2 nd Coat Name of paint /DFT	3 rd Coat Name of paint /DFT	Total DFT	Colour	Remarks	
1	STEAM TURBINE												
a	Outer Casing	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	75	Aluminium RAL 9006		
b	Exhaust Hood	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Inorganic Zinc Silicate/50	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	100	Aluminium RAL 9006		
c	Steam Pipes & Brackets (Interconnecting Pipes & Piping on casing)	PESD	TG HALL	Indoor	113 deg.F	Pickling/ Mechanical Cleaning	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	75	Aluminium RAL 9006		
d	Steam Gland Body Cover	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Inorganic Zinc Silicate / 50	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	100	Aluminium RAL 9006		
e	Governing Actuators	PESD	TG HALL	Indoor	113 deg.F	Solvent Cleaning/Mech. Cleaning	Epoxy Zinc Rich	High Build MIO Epoxy / 100			As per supplier standard		
f	Governing: HPSU	PESD	TG HALL	Indoor	113 deg.F	Solvent Cleaning/Mech. Cleaning	Epoxy Zinc Rich / 50	High Build MIO Epoxy / 100			As per supplier standard		
g	Bearing Pedestals, Bed Plates,	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Epoxy Zinc Rich / 50	High Build MIO Epoxy / 100	Aliphatic Urethane / 50	200	Grey White RAL 9002		
2	ST GENERATOR												
a	Generator Enclosure	EM	TG HALL	INDOOR	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5		
b	Generator air duct	EM	TG HALL	INDOOR	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5		
c	Generator stator frame	EM	TG HALL	INDOOR	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5		
d	Generator bearings	EM	TG HALL	INDOOR	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5		
e	Exciter stator frame	EM	TG HALL	INDOOR	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5		
3	BOILER FEED PUMP	HPEP-HYD.	TG Hall	Indoor	Room Temp.	Surface of equipment shall be made free from rust ,mill scales,grease,oil,dirt,etc and made fit to receive one coatof primer.	Inorganic Zinc Silicate Primer	Heat Resistant Air Drying Silicon Aluminium	Heat Resistant Air Drying Silicon Aluminium	50	Aluminium of IS: 5	1. One coat of rust penetrative,hard film yellow to be applied on all exposed machined surfaces. 2.Grease IS-958 shall be applied liberally on all exposed threaded portions	
4	SURFACE CONDENSER	HPEP-HYD.		Indoor	≤ 199.4 deg. F	SP 10	Epoxy Zinc Rich/100-150	Finishing paint at site Polyurethane/80-120	-	180-270	Red/Grey		
5	HP HEATER	HPEP-HYD.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium		
6	LP HEATER	HPEP-HYD.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium		
7	DEAERATOR	HPEP-HYD.		Outdoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium		
8	SJAE	HPEP-HYD.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium		
9	GENERATOR AIR COOLER	HPEP-HYD.		Indoor	< 392 Deg. F	SP 10	Epoxy based zinc rich/100-150	Polyurethane/80-120	-	180-270	Grey		
10	GLAND STEAM CONDENSER	HPEP-HYD.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium		
11	LUBE OIL CONSOLE	PESD											
a	Lube Oil Tank (C.S.) (Outer)	PESD	TG HALL (6-7,12-13, 32)	A-A2/ 25-26,31-	Indoor	113 Deg. F	Blasting SA2½	Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
b	Lube Oil Tank (C.S.) (Inside)	PESD			Indoor	113 Deg. F		Temperature Rust Preventive coating, Category 'E'/ 40	Temperature Rust Preventive Rust Base 394 / 40	Temperature Rust Preventive Rust Base 394 / 40	120	--	
c	Duplex Filter (Outer)	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
d	Oil Sperator	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
e	Lube Oil Pump (LOP, AOP & EOP)	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
f	Vapour Exraction Fan	PESD			Indoor	113 Deg. F	Solvent Cleaning or Mechanical Cleaning	Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
g	Oil Purification Unit (Not a console part)	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
h	Jacking Oil Pump (Not a console part)	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
i	Gov Oil Accumulator (Not a console part)	PESD			Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
j	Acoustic Enclosure for Turbine (Not a console part)	PESD			Indoor	113 Deg. F	Blasting SA2½ / mechanical cleaning	Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
k	Overhead Oil Tank (Not a console part) # Painting is not required on inner side of Tank.	PESD	TG HALL	B-C Bay	Outdoor	122 Deg. F	Blasting SA2½	Epoxy Zinc Rich/75	High Build MIO Epoxy for SS / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
12	PIPING & VALVES												
a	Valves -BHEL Trichy												
a.1	Safety valves - BHEK Trichy	HPBP-TRICHY			400/600 Deg. F	SSPC-SP3	HR ALUMINUM GR.II UP TO 400deg.C/GR. I UP TO 600deg.C - DFT = 20microns	HR ALUMINUM GR.II UP TO 400deg.C/GR. I UP TO 600deg.C - DFT = 20microns	NIL	40 MICRONS			
a.2	Silencers - BHEL Trichy	HPBP-TRICHY			>400 Deg. F	SSPC-SP3	HR ALUMINUM GR. I UP TO DFT = 20microns	HR ALUMINUM GR. I UP TO DFT = 20microns	NIL	40 MICRONS			
b	Valves - BHEL Bhopal												
a.1	For External Unmachined Surface	BHEL- Bhopal	CW/ACW/CCW Water system	-	149 Deg. F	Shot Blast	Chemical Resistant Epoxy (Zinc Chromate/Zinc Phosphate) primer	Chemical Resistant Epoxy Finish paint (Colour- Grey)		(Total DFT - Primer +Finish Paint = 150 microns)			
b.2	For Direct Water passage & Water immersed surfaces	BHEL- Bhopal		-	149 Deg. F	Shot Blast	Chemical Resistant Epoxy (Zinc Chromate/Zinc Phosphate) primer	Coal Tar Pitch Epoxy Paint (Colour-Black)		(Total DFT - Primer +Finish Paint = 175 microns)			
b.3	For mated machined surface	BHEL- Bhopal		-	149 Deg. F	Shot Blast	-	Liberal Coat of Temporary Rust Preventive coat to get jet black finish					
c	Expansion bellows -BHEL Bhopal	BHEL- Bhopal	Flanges	-	149 Deg. F	Sand/Shot Blasted	Chemical Resistant Chlorinated Rubber based Primer paint	Chemical Resistant Chlorinated Rubber based Finishing paint					
d	IBR piping input - Piping centre				60 deg.C and Above	SSPC-SP3/Power Tool Cleaning	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-----	-----	Total DFT = 60 microns min. Shade : Redoxide			
					Below 60 deg.C	SSPC-SP3/Power Tool Cleaning	2 coats of 50 microns each of HB Chlorinated Rubber based Zinc Phosphate Primer	-----	2 coats of 30 microns each of Chlorinated Rubber based finish paint	Total DFT = 160 microns min. Shade : Smoke Grey Shade No 692 of IS 5			
d.1	Uninsulated Carbon Steel Piping with Operating Temp <= 93 Deg C (Outdoor)	PE&SD,PC	TG HALL	INDOOR	<= 93 Deg C	SP-6	3-5 mils (76-127 microns) of Inorganic Zinc	4-6 mils (102-152 microns) of Epoxy	3-5 mils (76-127 microns) of Polyurethane	60 microns	Redoxide	2nd & 3rd Coat in Shop or Field	
d.2	Uninsulated Carbon Steel Piping with Operating Temp > 93 & <= 400 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	INDOOR	> 93 & <= 400 Deg C	SP-10	3-5 mils (76-127 microns) of Inorganic Zinc	1.5-2.5 mils (38-64 microns) of Silicone Aluminium	1.5-2.5 mils (38-64 microns) of Silicone Aluminium			2nd & 3rd Coat in Shop or Field	
d.3	Insulated Carbon Steel / Stainless Steel Piping with Operating Temp <= 200 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	INDOOR	<= 200 Deg C	SP-7/15	6-8 mils (152-203 microns) of High Temp Epoxy Phenolic with Glass Flakes	-	-				
d.4	Uninsulated Stainless Steel Piping with Operating Temp <= 93 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	INDOOR	<= 93 Deg C	SP-7/15	4-6 mils (102-152 microns) of Epoxy Mastic	3-5 mils (76-127 microns) of Polyurethane	-				
d.5	Insulated Carbon Steel / Stainless Steel Piping with Operating Temp > 200 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	INDOOR	> 200 Deg C	SP-3	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-	-	60 microns	Shade : Redoxide		
d.6	Insulated Alloy Steel Piping (Outdoor/Indoor)	PE&SD,PC	TG HALL	INDOOR	> 400 Deg C	SP-3	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-	-	60 microns	Shade : Redoxide		
e	Valves - Others											refer d.1 to d.6	
f	Expansion bellows - others											refer d.1 to d.6	
g	Pre-Fabricated Piping (Non-IBR service)											covered in the above demarcation	
h	Steam Traps											refer d.1 to d.6	
i	Piping Insulation											no -pinting for insulation	
j	Pipe hangers											refer d.1 to d.6	
k	Pre-fabricated pipe support shoes											refer d.1 to d.6	
l	Structural steel for pipe supports											refer d.1 to d.6	
m	Pre-Fabricated Piping (Non-IBR service_Integral scope)												
i	Oil piping-Carbon Steel		TG HALL	Indoor	149 Deg. F	SA 2 1/2 Shop	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125	165-215	Light Grey IS 631		
ii	Oil piping- Stainless steel		TG HALL	Indoor	113 Deg. F	SSPC SP 16 Shop	High Temperature Epoxy Novolac / 50-80	NA	High Temperature Epoxy Novolac / 50-80	200-300	Light Grey IS 631		
iii	Control oil piping_Carbon Steel		TG HALL	Indoor	149 Deg. F	SA 2 1/2 Field	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125	165-215	Light Grey IS 631		
iv	Control oil piping_Stainless steel		TG HALL	Indoor	113 Deg. F	SSPC SP 16 Field	High Temperature Epoxy Novolac / 50-80	NA	High Temperature Epoxy Novolac / 50-80	200-300	Light Grey IS 631		
v	Integral steam piping_Carbon Steel		TG HALL	Indoor	500 Deg. F	SA 2 1/2 Shop	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125		Light Grey IS 631		

vi	Integral steam piping_Alloy steel		TG HALL	Indoor	984 Deg. F	SA 2 1/2	Field	High Temperature Silicone Aluminium/25-40	High Temperature Silicone Aluminium/25-40	High Temperature Silicone Aluminium/25-40	75-120	Light Grey IS 631	
13	HEAT EXCHANGERS												
a	Equipment and Supports (≥ 2.5 square meter surface)	PE& SD			≤ 93 Deg. F		SP 10	Zinc Rich epoxy DFT- 3-5 mils	Epoxy DFT - 4-6 mils	Polyurethane DFT -3-5 mils		Aluminium/Grey	
14	DOSING SYSTEMS												
	CHEMICAL DOSING SKIDS(HYDRAZINE/AMMONIA & NaOH)												
i.	Not Exposed to Coal, coal Dust, Ash (Fly & Bottom), lime Stone or Bed sand – Structural steal, Misc. steel, Stairways (not galvanized), pipe racks, platforms, walkways Steel,& Supplement Support steel, etc.	PE& SD			≤ 93 Deg. F		SP 10	Inorganic zinc / 3-5 mils	---	---		Light Grey Colour For Beams And Pipe Supports	
ii.a	Stair Support Steel, Stringers, ladders, including safety cages	PE& SD			≤ 93 Deg. F		SP 10	Inorganic zinc or Epoxy Zinc rich / 3-5 mils	Epoxy /4-6 mils	Polyurethane / 3-5 mils		Black Colour For Platform	
	or												
ii.b	Stair Support Steel, Stringers, ladders, including safety cages	PE& SD			≤ 93 Deg. F		--	Hot Dip galvanized / To a minimum of 600 g/m2 per ASTM A123	Brush Blast (SP-7) / 4-6 mils of Epoxy mastic	Polyurethane / 3-5 mils		Black Colour for Ladders	
iii.a	Handrails Assemblies Steel	PE& SD			≤ 93 Deg. F		SP 10	Inorganic zinc or Epoxy Zinc rich /3-5 mils	Epoxy /4-6 mils	Polyurethane / 3-5 mils		Golden Yellow for Handrails	Safety Yellow Colour
	or												
iii.b	Handrails Assemblies Steel	PE& SD			Ambient		--	Hot Dip galvanized / To a minimum of 600 g/m square per ASTM A123	Brush Blast (SP-7) / 4-6 mils of Epoxy mastic	Polyurethane / 3-5 mils		Golden Yellow for Handrails	2nd and 3rd costs in shop or field with safety yellow colour
iv.	Safety Showers, Eye Wash Stations	PE& SD			Ambient		--	Manufacturer's Standard suitable for seacoast to extent possible				Green	
v.a	Electricals cabinets and panels	PE& SD			Ambient		SP 10					Light Grey	
	or												
v.b	Electricals cabinets and panels	PE& SD			Ambient			Galvanized or galvalumed steel coated with 5 to 6 mils of TGIC powder coating or acceptable equal.				Light Grey	
vi.	Exposed Instrument Tubing	PE& SD			Ambient			Suitable grade of 2205 Duplex stainless steel or acceptable equal.				Light Grey	
vii.	Off-The-Shelf items or small pumps, Instrument, motors (<15HP) components/Equipment (<2.5 M)	PE& SD			Ambient			Supplier standard's coating suitable for sea coast exposure to the extent possible				Light Grey	
15	POWER CYCLE SYSTEMS												
a	Control Valves												
b	Desuperheaters												
								As per Manufacrurar's Standard					
c	Atmospheric Flash Tank	PE&SD	Outside STG building	Outdoor	-196°C to 230°C	SA 2 ½		High temperature Epoxy Novolac / DFT: 100-150 microns	NA	High temperature Epoxy Novolac / DFT: 100-150 microns	200-300 microns	White(BS: Code 00-E-55)	External surface
					150°C	SA 2 ½		Amine Adduct Cured Epoxy / DFT: 100-150 microns	NA	Amine Adduct Cured Epoxy / DFT: 100-150 microns	200-300 microns		Internal surface
16	PUMPS												
a.1	Condensate Extraction Pumps	Each Unit	STG Building	Outdoor	50 Deg. C	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
a.2	Motors for Condensate Extraction Pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
b.1	CCW Pumps (For PHE)	Common for All 3 Units	STG Building	Outdoor	50 Deg. C	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
b.2	Motors for CCW Pumps (For PHE)	Common for All 3 Units	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
c.1	Potable sump pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
c.2	Motors for Potable sump pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
d.1	Condensate forwarding pumps	Each Unit	STG Building	Outdoor	50 Deg. C	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
d.2	Motors for Condensate forwarding pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
e.1	ACW Pump	Each Unit	STG Building	Outdoor	50	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
e.2	Motors for ACW Pump	Each Unit	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
f.1	Air Compressor	Common for All 3 Units	STG Building	Outdoor	50 Deg. C	SP-10		1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
f.2	Motors for Air Compressor	Common for All 3 Units	STG Building	Outdoor	Ambient	SP-10		3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
17	TANKS												
17.1	Condensdate Storage tank (150m3)												
a	External Uninsulated upto 120 Deg. C	PE&SD		Outdoor		SA 2 1/2		-Inorganic Zinc Silicate Primer -Dry film thickness: 65-90 microns -Required surface profile: 50 microns -Maximum temperature resistances: 400°C -Minimum Volume Solids: 58 ASTM D2697 1. The product shall conform to SSPC Paint 20 Type 1-C with a zinc dust level of greater than 70% by weight in the dry film. The zinc dust shall have a "metallic" zinc content that meets the requirements of ASTM D-520 Type 1. Random sample for zinc dust content to be checked at site/lab.	High Build MIO Epoxy -Intermediate Dry film thickness: 100-150 microns -Required surface preparation: Clean, dry epoxy primer (type 04) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 55ASTM D2697 The quantity of MIO in the main pigment shall be 80% by weight.	Aliphatic Urethane Finish -Dry film thickness: 40-75 microns -Required surface preparation: Clean, dry epoxy intermediate(type 05) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 60 ASTM D2697	215-350	White(BS: Code 00-E-55)	Where prep. Is carried out in a shop or offsite it is mandatory that the painting to be carried out at the same location.

b	Internal(Condensate Tanks)	PE&SD		Outdoor		SA 2 1/2	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	300-375		
c	Tank Bottom plate (inside)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	200-300		Shop built tanks will be shop painted.
d	External of underside of all tank	PE&SD		Outdoor		SA 2 1/2	Coal Tar Epoxy -Dry film thickness: 150-200 microns -Required surface profile: 75 microns	NA	NA	150-200		A strip 75 mm wide at plate edge shall be left bare to avoid welding cantamination
17.2	Expansion Tank for DMCW Circuit											
a	External Uninsulated upto 120 Deg. C	PE&SD		Outdoor		SA 2 1/2	-Inorganic Zinc Silicate Primer -Dry film thickness: 65-90 microns -Required surface profile: 50 microns -Maximum temperature resistances: 400°C -Minimum Volume Solids: 58 ASTM D2697 1. The product shall conform to SSPC Paint 20 Type 1-C with a zinc dust level of greater than 70% by weight in the dry film. The zinc dust shall have a "metallic" zinc content that meets the requirements of ASTM D-520 Type 1. Random sample for zinc dust content to be checked at site/lab.	High Build MIO Epoxy -Intermediate Dry film thickness: 100-150 microns -Required surface preparation: Clean, dry epoxy primer (type 04) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 55ASTM D2697 The quantity of MIO in the main pigment shall be 80% by weight.	Aliphatic Urethane Finish -Dry film thickness: 40-75 microns -Required surface preparation: Clean, dry epoxy intermediate(type 05) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 60 ASTM D2697	215-350	White(BS: Code 00-E-55)	Where prep. Is carried out in a shop or offsite it is mandatory that the painting to be carried out at the same location.
b	Internal(Demineralised water)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	NA	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	300-200		Shop built tanks will be shop painted.
c	Tank Bottom plate (inside)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	200-300		Shop built tanks will be shop painted.
d	External of underside of all tank	PE&SD		Outdoor		SA 2 1/2	Coal Tar Epoxy -Dry film thickness: 150-200 microns -Required surface profile: 75 microns	NA	NA	150-200		A strip 75 mm wide at plate edge shall be left bare to avoid welding cantamination
18	ELECTRICAL SYSTEM ITEMS											
a	LV PMCC's	PE&SD	Switchgear room/ Indoor	Ambient	Ambient	As per manufacturers standard						Shade 631 of IS 5
b	LV MCC's	PE&SD		Ambient	Ambient	As per manufacturers standard						Shade 631 of IS 5
c	Cable tray material	PE&SD	Entire STG & Switchgear building/Indoor	Ambient	Ambient	Hot Dip Galvanization as per IS 2629 & minimum thickness of Galvanization shall be 610gm/m ²						Not Applicable
d	LV Power cables	PE&SD		Ambient	Ambient	Not Applicable						Outer sheath shall be black
e	Control cables	PE&SD		Ambient	Ambient	Not Applicable						Outer sheath shall be black
f	Cable Glands & Lugs	PE&SD		Ambient	Ambient	Not Applicable						Not Applicable
	Structural steel for cable tray supports	PE&SD	Entire STG & Switchgear building/Indoor	Ambient	Ambient	Red oxide Zinc Chromate primer						Not Applicable
19	C & I SYSTEM ITEMS											
a	Field instrument package	PE&SD	Each Unit	indoor & out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications				As reqd.	Vendor standard	
b	Instrument hook up material	PE&SD	Each Unit	indoor & out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications				As reqd.	Vendor standard	
c	Instrumentation cables	PE&SD	Each Unit	indoor & out door	Amb. Temp	NA	NA	NA	NA	NA	Black	
d	SWAS System	PE&SD	Each Unit	Indoor	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications				As reqd.	RAL 7035	
e	Flow elements-Orifice	PE&SD	Each Unit	Out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications				As reqd.	Vendor standard	
g	Flow elements-Nozzle	PE&SD	Each Unit	Out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications				As reqd.	Vendor standard	

PAINTING & COATING SCHEDULE FOR RIL- HMD												
Sl.No.	Equipment/ Surface	Units involved	Area/ Location	Arrangement (Indoor / Outdoor)	Temp.	Surface Prepatation	Primer or 1 st Coat Name of paint /DFT	2 nd Coat Name of paint /DFT	3 rd Coat Name of paint /DFT	Total DFT	Colour	Remarks
1	STEAM TURBINE											
a	Outer Casing	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	75	Aluminium RAL 9006	
b	Exhaust Hood	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Inorganic Zinc Silicate/50	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	100	Aluminium RAL 9006	
c	Steam Pipes & Brackets (Interconnecting Pipes & Piping on casing)	PESD	TG HALL	Indoor	113 deg.F	Pickling/ Mechanical Cleaning	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	75	Aluminium RAL 9006	
d	Steam Gland Body Cover	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Inorganic Zinc Silicate / 50	Heat Resistant Air drying Aluminium/ 25	Heat Resistant Air drying Aluminium/ 25	100	Aluminium RAL 9006	
e	Governing Actuators	PESD	TG HALL	Indoor	113 deg.F	Solvent Cleaning/Mech. Cleaning	Epoxy Zinc Rich	High Build MIO Epoxy / 100			As per supplier standard	
f	Governing: HPSU	PESD	TG HALL	Indoor	113 deg.F	Solvent Cleaning/Mech. Cleaning	Epoxy Zinc Rich / 50	High Build MIO Epoxy / 100			As per supplier standard	
g	Bearing Pedestals, Bed Plates,	PESD	TG HALL	Indoor	113 deg.F	Blasting SA2 ¹ / ₂	Epoxy Zinc Rich / 50	High Build MIO Epoxy / 100	Aliphatic Urethane / 50	200	Grey White RAL 9002	
2	ST GENERATOR											
a	Generator Enclosure	EM	TG HALL	Indoor	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5	
b	Generator air duct	EM	TG HALL	Indoor	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5	
c	Generator stator frame	EM	TG HALL	Indoor	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5	
d	Generator bearings	EM	TG HALL	Indoor	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5	
e	Exciter stator frame	EM	TG HALL	Indoor	Ambient	Shot Blasting SA 2 1/2	Epoxy Zinc Rich/75	2 Coats of Epoxy high build/100	2 coats of Epoxy Polyurethane/75	250	Light Grey shade no 631 of IS 5	
3	BOILER FEED PUMP	HPEP-Hyd.	TG HALL	Indoor	Room Temp.	Surface of equipment shall be made free from rust ,mill scales,grease,oil,dirt,etc and made fit to receive one coatof primer.	Inorganic Zinc Silicate Primer	Heat Resistant Air Drying Silicon Aluminium	Heat Resistant Air Drying Silicon Aluminium	50	Aluminium of IS: 5	1. One coat of rust penetrative,hard film yellow to be applied on all exposed machined surfaces. 2.Grease IS-958 shall be applied liberally on all exposed threded portions
4	SURFACE CONDENSER	HPEP Hyd.		Indoor	≤ 199.4 Deg. F	SP 10	Epoxy Zinc Rich/100-150	Finishing paint at site Polyurethane/80-120	-	180-270	Red/Grey	
5	HP HEATER	HPEP Hyd.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium	
6	LP HEATER	HPEP Hyd.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium	
7	DEAERATOR	HPEP Hyd.		Outdoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium	
8	SJAE	HPEP Hyd.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium	
9	GENERATOR AIR COOLER	HPEP Hyd.		Indoor	< 392 Deg. F	SP 10	Epoxy based zinc rich/100-150	Polyurethane/80-120		180-270	Grey	
10	GLAND STEAM CONDENSER	HPEP Hyd.		Indoor	≥ 428 Deg. F	SP 10	Inorganic Zinc/80-120	Silicone Aluminium/80	-	160-200	Aluminium	
11	LUBE OIL CONSOLE	HPEP Hyd.										
a	Lube Oil Tank (C.S.) (Outer)	HPEP Hyd.	TG HALL 13, A-A2/ 25-26,31-32	Indoor	113 Deg. F	Blasting SA2%	Epoxy Zinc Rich/75	High build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
b	Lube Oil Tank (C.S.) (Inside)	HPEP Hyd.		Indoor	113 Deg. F		Temperature Rust Preventive coating, Category 'E' / 40	Temperature Rust Preventive Rust Base 394 / 40	Temperature Rust Preventive Rust Base 394 / 40	120	--	
c	Duplex Filter (Outer)	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
d	Oil Separator	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
e	Lube Oil Pump (LOP, AOP & EOP)	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
f	Vapour Extraction Fan	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
g	Oil Purification Unit (Not a console part)	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
h	Jacking Oil Pump (Not a console part)	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
i	Gov Oil Accumulator (Not a console part)	HPEP Hyd.		Indoor	113 Deg. F		Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
j	Acoustic Enclosure for Turbine (Not a console part)	HPEP Hyd.		Indoor	113 Deg. F	Blasting SA2% / mechanical cleaning	Epoxy Zinc Rich/75	High Build MIO Epoxy / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
k	Overhead Oil Tank (Not a console part)	HPEP Hyd.	TG HALL	B-C Bay	122 Deg. F	Blasting SA2%	Epoxy Zinc Rich/75	High Build MIO Epoxy for SS / 100	Aliphatic Urethane /50	225	Light Grey RAL 7035	
12	PIPING & VALVES											
a	Valves -BHEL Trichy											
a.1	Safety valves - BHEK Trichy	HPBP-TRICHY			400/600 Deg. F	SSPC-SP3	HR ALUMINUM GR.II UP TO 400deg.C/GR. I UP TO 600deg.C - DFT = 20microns	HR ALUMINUM GR.II UP TO 400deg.C/GR. I UP TO 600deg.C - DFT = 20microns	NIL	40 MICRONS		
a.2	Silencers - BHEL Trichy	HPBP-TRICHY			>400 Deg. F	SSPC-SP3	HR ALUMINUM GR. I UP TO DFT = 20microns	HR ALUMINUM GR. I UP TO DFT = 20microns	NIL	40 MICRONS		
b	Valves - BHEL Bhopal											
a.1	For External Unmachined Surface	BHEL- Bhopal	CW/ACW/CCW Water system	-	149 Deg. F	Shot Blast	Chemical Resistant Epoxy (Zinc Chromate/Zinc Phosphate) primer	Chemical Resistant Epoxy Finish paint (Colour- Grey)		(Total DFT - Primer +Finish Paint = 150 microns)		
b.2	For Direct Water passage & Water immersed surfaces	BHEL- Bhopal		-	149 Deg. F	Shot Blast	Chemical Resistant Epoxy (Zinc Chromate/Zinc Phosphate) primer	Coal Tar Pitch Epoxy Paint (Colour-Black)		(Total DFT - Primer +Finish Paint = 175 microns)		
b.3	For mated machined surface	BHEL- Bhopal		-	149 Deg. F	Shot Blast	-	Liberal Coat of Temporary Rust Preventive coat to get jet black finish				
c	Expansion bellows -BHEL Bhopal	BHEL- Bhopal	Flanges	-	149 Deg. F	Sand/Shot Blasted	Chemical Resistant Chlorinated Rubber based Primer paint	Chemical Resistant Chlorinated Rubber based Finishing paint	9,700.00	~J36/100		
d	IBR piping input - Piping centre				60 deg.C and Above	SSPC-SP3/Power Tool Cleaning	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-----	-----	Total DFT = 60 microns min. Shade : Redoxide		
					Below 60 deg.C	SSPC-SP3/Power Tool Cleaning	2 coats of 50 microns each of HB Chlorinated Rubber based Zinc Phosphate Primer	-----	2 coats of 30 microns each of Chlorinated Rubber based finish paint	Total DFT = 160 microns min. Shade : Smoke Grey Shade No 692 of IS 5		
d.1	Uninsulated Carbon Steel Piping with Operating Temp <= 93 Deg C (Outdoor)	PE&SD,PC	TG HALL	Indoor	<= 93 Deg C	SP-6	3-5 mils (76-127 microns) of Inorganic Zinc of Epoxy	4-6 mils (102-152 microns) of Polyurethane	3-5 mils (76-127 microns) of Polyurethane	60 microns	Redoxide	2nd & 3rd Coat In Shop or Field
d.2	Uninsulated Carbon Steel Piping with Operating Temp > 93 & <= 400 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	Indoor	> 93 & <= 400 Deg C	SP-10	3-5 mils (76-127 microns) of Inorganic Zinc	1.5-2.5 mils (38-64 microns) of Silicone Aluminium	1.5-2.5 mils (38-64 microns) of Silicone Aluminium			2nd & 3rd Coat in Shop or Field
d.3	Insulated Carbon Steel / Stainless Steel Piping with Operating Temp <= 200 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	Indoor	<= 200 Deg C	SP-7/15	6-8 mils (152-203 microns) of High Temp Epoxy Phenolic with Glass Flakes	-	-			
d.4	Uninsulated Stainless Steel Piping with Operating Temp <= 93 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	Indoor	<= 93 Deg C	SP-7/15	4-6 mils (102-152 microns) of Epoxy Mastic	3-5 mils (76-127 microns) of Polyurethane	-			
d.5	Insulated Carbon Steel / Stainless Steel Piping with Operating Temp > 200 Deg C (Outdoor/Indoor)	PE&SD,PC	TG HALL	Indoor	> 200 Deg C	SP-3	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-	-	60 microns	Shade : Redoxide	
d.6	Insulated Alloy Steel Piping (Outdoor/Indoor)	PE&SD,PC	TG HALL	Indoor	> 400 Deg C	SP-3	2 coats of Red oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744	-	-	60 microns	Shade : Redoxide	
e	Valves - Others											refer d.1 to d.6
f	Expansion bellows - others											refer d.1 to d.6
g	Pre-Fabricated Piping (Non-IBR service)											covered in the above demarcation
h	Steam Traps											refer d.1 to d.6
i	Piping Insulation											no -pinting for insulation
j	Pipe hangers											refer d.1 to d.6
k	Pre-fabricated pipe support shoes											refer d.1 to d.6
l	Structural steel for pipe supports											refer d.1 to d.6
m	Pre-Fabricated Piping (Non-IBR service_ Integral scope)											
i	Oil piping-Carbon Steel		TG HALL	Indoor	149 Deg. F	SA 2 1/2 Shop	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125	165-215	Light Grey IS 631	
ii	Oil piping- Stainless steel		TG HALL	Indoor	113 Deg. F	SSPC SP 16 Shop	High Temperature Epoxy Novolac / 50-80	NA	High Temperature Epoxy Novolac / 50-80	200-300	Light Grey IS 631	
iii	Control oil piping_Carbon Steel		TG HALL	Indoor	149 Deg. F	SA 2 1/2 Field	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125	165-215	Light Grey IS 631	
iv	Control oil piping_Stainless steel		TG HALL	Indoor	113 Deg. F	SSPC SP 16 Field	High Temperature Epoxy Novolac / 50-80	NA	High Temperature Epoxy Novolac / 50-80	200-300	Light Grey IS 631	
v	Integral steam piping_Carbon Steel		TG HALL	Indoor	500 Deg. F	SA 2 1/2 Shop	Inorganic Zinc Silicate/50	NA	Zinc Free" High Temperature Air Curing Finish Coat /100-125		Light Grey IS 631	
vi	Integral steam piping_Alloy steel		TG HALL	Indoor	984 Deg. F	SA 2 1/2 Field	High Temperature Silicone Aluminium/25-40	High Temperature Silicone Aluminium/25-40	High Temperature Silicone Aluminium/25-40	75-120	Light Grey IS 631	
13	HEAT EXCHANGERS											

a	Equipment and Supports (≥ 2.5 square meter surface)	PE& SD			≤ 93 Deg. F	SP 10	Zinc Rich epoxy DFT- 3-5 mils	Epoxy DFT - 4-6 mils	Polyurethane DFT -3-5 mils		Aluminium/Grey	
14	DOSING SYSTEMS											
	CHEMICAL DOSING SKIDS(HYDRAZINE/AMMONIA & NaOH)											
i.	Not Exposed to Coal, coal Dust, Ash (Fly & Bottom), lime Stone or Bed sand – Structural steal, Misc. steel, Stairways (not galvanized), pipe racks, platforms, walkways Steel,& Supplement Support steel, etc.	PE& SD			≤ 93 Deg. F	SP 10	Inorganic zinc / 3-5 mils	---	---		Light Grey Colour For Beams And Pipe Supports	
ii.a	Stair Support Steel, Stringers, ladders, including safety cages	PE& SD			≤ 93 Deg. F	SP 10	Inorganic zinc or Epoxy Zinc rich / 3-5 mils	Epoxy /4-6 mils	Polyurethane / 3-5 mils		Black Colour For Platform	
	or											
ii.b	Stair Support Steel, Stringers, ladders, including safety cages	PE& SD			≤ 93 Deg. F	--	Hot Dip galvanized / To a minimum of 600 g/m2 per ASTM A123	Brush Blast (SP-7) / 4-6 mils of Epoxy mastic	Polyurethane / 3-5 mils		Black Colour for Ladders	
iii.a	Handrails Assemblies Steel	PE& SD			≤ 93 Deg. F	SP 10	Inorganic zinc or Epoxy Zinc rich /3-5 mils	Epoxy /4-6 mils	Polyurethane / 3-5 mils		Golden Yellow for Handrails	Safety Yellow Colour
	or											
iii.b	Handrails Assemblies Steel	PE& SD			Ambient	--	Hot Dip galvanized / To a minimum of 600 g/m square per ASTM A123	Brush Blast (SP-7) / 4-6 mils of Epoxy mastic	Polyurethane / 3-5 mils		Golden Yellow for Handrails	2nd and 3rd costs in shop or field with safety yellow colour
iv.	Safety Showers, Eye Wash Stations	PE& SD			Ambient	--	Manufacturer's Standard suitable for seacoast to extent possible				Green	
v.a	Electricals cabinets and panels	PE& SD			Ambient	SP 10					Light Grey	
	or											
v.b	Electricals cabinets and panels	PE& SD			Ambient	Galvanized or galvalumed steel coated with 5 to 6 mils of TGIC powder coating or acceptable equal.					Light Grey	
vi.	Exposed Instrument Tubing	PE& SD			Ambient	Suitable grade of 2205 Duplex stainless steel or acceptable equal.					Light Grey	
vii.	Off-The-Shelf items or small pumps, Instrument, motors (<15HP) components/Equipment (<2.5 M)	PE& SD			Ambient	Supplier standard's coating suitable for sea coast exposure to the extent possible					Light Grey	
15	POWER CYCLE SYSTEMS											
a	Control Valves	As per Manufacrur's Standard										
b	Desuperheaters											
c	Atmospheric Flash Tank	PE&SD	Outside STG building	Outdoor	-196°C to 230°C	SA 2 ½	High temperature Epoxy Novolac / DFT: 100-150 microns	NA	High temperature Epoxy Novolac / DFT: 100-150 microns	200-300 microns	White(BS: Code 00-E-55)	External surface
					150°C	SA 2 ½	Amine Adduct Cured Epoxy / DFT: 100-150 microns	NA	Amine Adduct Cured Epoxy / DFT: 100-150 microns	200-300 microns		Internal surface
16	PUMPS											
a.1	Condensate Extraction Pumps	Each Unit	STG Building	Outdoor	50 Deg. C	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
a.2	Motors for Condensate Extraction Pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
b.1	CCW Pumps (For PHE)	Common for All 4 Units	STG Building	Outdoor	50 Deg. C	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
b.2	Motors for CCW Pumps (For PHE)	Common for All 4 Units	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
c.1	Potable sump pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
c.2	Motors for Potable sump pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
d.1	Condensate forwarding pumps	Each Unit	STG Building	Outdoor	50 Deg. C	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
d.2	Motors for Condensate forwarding pumps	Each Unit	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
e.1	ACW Pump	Each Unit	STG Building	Outdoor	50 Deg. C	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
e.2	Motors for ACW Pump	Each Unit	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
f.1	Air Compressor	Common for All 4 Units	STG Building	Outdoor	50 Deg. C	SP-10	1 Coat of two component of Inorganic Zinc Silicate Coating@ 65-75µ DFT /Coating Total: 65-75µ	1 Coat of Two component Epoxy Zinc phosphate primer cured with polyamine hardener@40µ DFT/Coat Total: 40µ	2 Coat of High Build Epoxy finish coating cured with polyamine harder@ 100 µ DFT/Coat & 1 Coat of Two component Acrylic-Polyurethane finish paint@ 400 µ DFT/Coat: Total=2x100+40=240 µ	345-355 µ	Navy Blue (RAL 5014)	
f.2	Motors for Air Compressor	Each Unit	STG Building	Outdoor	Ambient	SP-10	3 mils of Epoxy Primer	3 mils of Epoxy	3 mils of Epoxy Polyurethane	225 µ	Blue Grey (RAL 7031)	
17	TANKS											
17.1	Condensdate Storage tank (150m3)											
a	External Uninsulated upto 120 Deg. C	PE&SD		Outdoor		SA 21/2	-Inorganic Zinc Silicate Primer -Dry film thickness: 65-90 microns -Required surface profile: 50 microns -Maximum temperature resistances: 400°C -Minimum Volume Solids: 58 ASTM D2697 1. The product shall conform to SSPC Paint 20 Type 1-C with a zinc dust level of greater than 70% by weight in the dry film. The zinc dust shall have a "metallic" zinc content that meets the requirements of ASTM D-520 Type 1. Random sample for zinc dust content to be checked at site/lab.	High Build MIO Epoxy -Intermediate Dry film thickness: 100-150 microns -Required surface preparation: Clean, dry epoxy primer (type 04) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 55ASTM D2697 The quantity of MIO in the main pigment shall be 80% by weight.	Aliphatic Urethane Finish -Dry film thickness: 40-75 microns -Required surface preparation: Clean, dry epoxy intermediate(type 05) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 60 ASTM D2697	215-350	White(BS: Code 00-E-55)	Where prep. Is carried out in a shop or offsite it is mandatory that the painting to be carried out at the same location.

b	Internal(Condensate Tanks)	PE&SD		Outdoor		SA 2 1/2	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	HB Epoxy Phenolic -Required surface profile: 50-80 microns -Minimum Volume solids : 65% ASTM D2697 -Dry film thickness : 100-150 microns/coat -Maximum temperature resistance :150°C	300-375		
c	Tank Bottom plate (inside)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	200-300		Shop built tanks will be shop painted.
d	External of underside of all tank	PE&SD		Outdoor		SA 2 1/2	Coal Tar Epoxy -Dry film thickness: 150-200 microns -Required surface profile: 75 microns	NA	NA	150-200		A strip 75 mm wide at plate edge shall be left bare to avoid welding cantamination
17.2	Expansion Tank for DMCW Circuit											
a	External Uninsulated upto 120 Deg. C	PE&SD		Outdoor		SA 2 1/2	-Inorganic Zinc Silicate Primer -Dry film thickness: 65-90 microns -Required surface profile: 50 microns -Maximum temperature resistances: 400°C -Minimum Volume Solids: 58 ASTM D2697 1. The product shall conform to SSPC Paint 20 Type 1-C with a zinc dust level of greater than 70% by weight in the dry film. The zinc dust shall have a “metallic” zinc content that meets the requirements of ASTM D-520 Type 1. Random sample for zinc dust content to be checked at site/lab.	High Build MIO Epoxy -Intermediate Dry film thickness: 100-150 microns -Required surface preparation: Clean, dry epoxy primer (type 04) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 55ASTM D2697 The quantity of MIO in the main pigment shall be 80% by weight.	Aliphatic Urethane Finish -Dry film thickness: 40-75 microns -Required surface preparation: Clean, dry epoxy intermediate(type 05) -Maximum temperature resistance: 120oC -Minimum Volume Solids: 60 ASTM D2697	215-350	White(BS: Code 00-E-55)	Where prep. is carried out in a shop or offsite it is mandatory that the painting to be carried out at the same location.
b	Internal(Demineralised water)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	NA	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	300-200		Shop built tanks will be shop painted.
c	Tank Bottom plate (inside)	PE&SD		Outdoor		SA 2 1/2	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	Amine Adduct Cured Epoxy -Dry film thickness: 100-150 microns -Required surface profile: 50 microns	200-300		Shop built tanks will be shop painted.
d	External of underside of all tank	PE&SD		Outdoor		SA 2 1/2	Coal Tar Epowy -Dry film thickness: 150-200 microns -Required surface profile: 75 microns	NA	NA	150-200		A strip 75 mm wide at plate edge shall be left bare to avoid welding cantamination
18	ELECTRICAL SYSTEM ITEMS											
a	LV PMCC's	PE&SD	Switchgear room	Indoor	Ambient	As per manufacturers standard					Shade 631 of IS 5	
b	LV MCC's	PE&SD			Ambient	As per manufacturers standard					Shade 631 of IS 5	
c	Cable tray material	PE&SD	Entire STG & Switchgear building	Indoor	Ambient	Hot Dip Galvanization as per IS 2629 & minimum thickness of Galvanization shall be 610gm/m ²					Not Applicable	
d	LV Power cables	PE&SD			Ambient	Not Applicable					Outer sheath shall be black	
e	Control cables	PE&SD			Ambient	Not Applicable					Outer sheath shall be black	
f	Cable Glands & Lugs	PE&SD			Ambient	Not Applicable					Not Applicable	
g	Structural steel for cable tray supports	PE&SD	Entire STG & Switchgear building	Indoor	Ambient	Red oxide Zinc Chromate primer					Not Applicable	
19	C & I SYSTEM ITEMS											
a	Field instrument package	PE&SD	Each Unit	Indoor & out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications					As reqd.	Vendor standard
b	Instrument hook up material	PE&SD	As reqd.	Indoor & out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications						Vendor standard
c	Instrumentation cables	PE&SD	As reqd.	Indoor & out door	Amb. Temp	NA	NA	NA	NA	NA		Black
d	SWAS System	PE&SD	Each Unit	Indoor	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications					As reqd.	RAL 7035
e	Flow elements-Orifice	PE&SD	Each Unit	Out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications					As reqd.	Vendor standard
g	Flow elements-Nozzle	PE&SD	Each Unit	Out door	Amb. Temp	Supplier standard coating suitable for power plant/Industrial applications					As reqd.	Vendor standard