

# APPENDIX 3A - ENGINE MILESTONE PAYMENT SCHEDULE

**Engine Plant Value - as defined in Section 7.1. Contract Price of Agreement**


## ENGINE MILESTONES

	Milestone	Payment (% of Engine Plant Portion)	Trigger Event	Required Documents for Milestone Invoicing
<b>ENGINES - OFF ISLAND MILESTONES</b>	A1	10%	Mobilization: Manufacturing Slot Reservation for engines	Contract Signing (Executed Contract)
	A2	6%	Mobilization: Orders of Long lead Equipment - Items 1	Copy of Unpriced Purchase Orders
	A3	4%	Other auxiliary modules orders - Items 2	Copy of Unpriced Purchase Orders
	A4	1%	Facility Design Plan, QRA & HAZOP Workshop Report submitted	HAZOP and QRA Report transmittal sheet
	A5	3%	Detailed Engineering Package - 30% completion	according to drawing submittal document (Appendix 3A - Annex A)
	A6	3%	Detailed Engineering Package - 60% completion	according to drawing submittal document (Appendix 3A - Annex A)
	A7	3%	Detailed Engineering Package - 90% completion	according to drawing submittal document (Appendix 3A - Annex A) and completion of Management of Change (MOC) paperwork
	A8	12%	Successful Product Conformity Test (FAT) for 4 Engines	Copy of Production Conformity Test Report
	A9	4%	Successful Factory Acceptance Test (FAT) for Generators (4)	Copy of Factory Acceptance Test Report
	A10	3%	Successful Factory Acceptance Test (FAT) for Control system	Copy of Factory Acceptance Test Report
	A11	2%	Successful Factory Acceptance Test (FAT) for MV Switchgear	Copy of Factory Acceptance Test Report
	A12	2%	Successful Factory Acceptance Test (FAT) for LV Switchgear	Copy of Factory Acceptance Test Report
	A13	3%	Successful Factory Acceptance Test (FAT) for Step-up transformer	Copy of Factory Acceptance Test Report
	A14	1%	Successful Factory Acceptance Test (FAT) for Station Transformer	Copy of Factory Acceptance Test Report
	A15	1%	Successful Factory Acceptance Test (FAT) for DC System	Copy of Factory Acceptance Test Report
	A16	4%	Generating Sets (4) Ready to ship	Forwarders Certificate of Receipt (FCR)
	A17	8%	Generating Sets (4) Delivery (Ocean Shipment)	Photographic evidence - unloaded gensets in St. Thomas
	A18	2%	Auxiliary Equipment Delivery (SCR, Voxidizer, EFB Modules - Ocean Shipment)	Photographic evidence - unloaded equipment in St. Thomas
<b>ENGINES - ON ISLAND MILESTONES</b>	A1ST	1%	Piling completed - auxiliary outdoor area	Progress Report or Certificate
	A2ST	1%	Foundation completed - auxiliary outdoor area	Progress Report or Certificate
	A3ST	1%	Piling completed - tank area	Progress Report or Certificate
	A4ST	1%	Foundation completed - tank area	Progress Report or Certificate
	A5ST	1%	Piling completed - vent collection tank area	Progress Report or Certificate
	A6ST	1%	Foundation completed - vent collection tank area	Progress Report or Certificate
	A7ST	1%	Piling completed - step-up transformer	Progress Report or Certificate
	A8ST	1%	Foundation completed - step-up transformer	Progress Report or Certificate
	A9ST	1%	Work Site leveled, benched, piles completed and compacted completed	Compaction Measurement Report
	A10ST	1%	Completion of Construction of Steel Structures (outdoor auxiliary area)	Progress Report or Certificate / photographic evidence
	A11ST	2%	Genset delivery from port to foundation	Photographic evidence
	A12ST	2%	Urea tank completion	Progress Report or Certificate / photographic evidence
	A13ST	1%	Electrical equipment placed on foundation located in Electrical Room	Photographic evidence
	A14ST	1%	Fire protection, gas detection installation completion	Installation check list completion certificate and equipment calibration certificates
	A15ST	6%	Mechanical Completion achieved (Generating Set Ready for Commissioning)	Copy Mechanical Completion certificate and completion of Pre-Start Up Safety Review (PSSR)
	A16ST	2%	Completion of Reliability Tests	Copy of Reliability test results
	A17ST	2%	Substantial Completion or start of Commercial Operation	Copy of Substantial Completion Certificate or WAPA has triggered an event of deemed acceptance under the Agreement.
	A18ST	2%	Final Acceptance	Copy of Final Acceptance Certificate

100%

Items 1: Generators & Step-up Transformer


Items 2: SCRs, Voxidizer, Engine Fuel Boosters, EAMs

 <b>WÄRTSILÄ</b> - General Power Plants		<b>Doc. Classification:</b> Internal			
		<b>Title:</b>	List of Documents Civil	<b>DocID:</b>	DBAF366900
		<b>Author:</b>	Jussi Koskinen	<b>Revision:</b>	-
		<b>Checked by:</b>	/	<b>Sheets:</b>	2
		<b>Finalised</b>	Jonas Carlsson / 08.03.2019	<b>Status:</b>	Finalised
		<b>Type:</b>	List of documents	<b>Description:</b>	
				<b>Project:</b>	P/17402 WAPA Randolph Harley Ext
Changed		<b>Document Type</b>	<b>Name and Description</b>	<b>Document Id</b>	
rev. new				<b>Vendor Doc ID</b>	<b>Wärtsilä Doc ID Rev. Size/ Pages</b>

Design Package

WD-P6.3 Design Master, Civil					
01 General					
02 Architectural Drawings					
200 CIVIL WORKS & STRUCTURES	Specification	POWER PLANT - COLOUR PROGRAM INTERIOR		A4P/2	30%
	Specification	POWER PLANT - COLOUR PROGRAM EXTERIOR		A4P/2	30%
210 POWER PLANT BUILDINGS	Drawing	CONTROL HOUSE - ELEVATIONS		A2 + 1/	30%
	Drawing	CONTROL HOUSE - PLAN AND SECTION		A2 + 1/	30%
	Drawing	ENGINE HALL - PLAN		A1 + 1/	30%
	Drawing	ENGINE HALL - SECTIONS		A2/	30%
	Drawing	ENGINE HALL - ELEVATIONS		A1 + 1/	30%
230 OIL STORAGE AND CONTAINMENT AREAS	Drawing	OILY WATER COLLECTING PIT SHELTER - PLAN, SECTION AND ELEVATIONS		A3 + 1/1	30%
240 AUXILIARY STRUCTURES	Drawing	RADIATOR PANEL SHELTER - PLAN, SECTION AND ELEVATIONS		A2 + 1/1	30%
	Drawing	UNLOADING SHELTER - PLAN, SECTION AND ELEVATIONS		A2 + 1/1	30%
	Drawing	PUMP SHELTER - PLAN, SECTION AND ELEVATIONS		A2 + 1/1	30%
03 Earthworks and Siteworks					
260 SITE WORKS	Dimensional drawing	Levelling		A0/	60%
	Dimensional drawing	Drainage		A0/	60%
	Specification	Earthworks Technical Specifications		A0/	60%
	Dimensional drawing	3D_model_levelling		A0/	60%
	Dimensional drawing	Surface_Materials		A0/	60%
04 Foundations					
200 CIVIL WORKS & STRUCTURES	Layout drawing	FOUNDATION LOCATION PLAN - LAYOUT PLAN		A0/	90%
	Layout drawing	PIPE SUPPORT FOUNDATION LOCATION PLAN - LAYOUT PLAN		A0/	90%
210 POWER PLANT BUILDINGS	Layout drawing	PILE MAP FOR ENGINE FOUNDATION - 2 - LAYOUT PLAN		A1/	60%
	Dimensional drawing	ENGINE FOUNDATION-2 - PLAN AND SECTIONS		A1 + 1/	60%
	Reinforcement drawing	ENGINE FOUNDATION-2 - PLAN AND SECTIONS		A0/	60%
	Layout drawing	PILE MAP FOR ENGINE HALL - PLAN AND SECTION		A1 + 1/	60%
	Dimensional drawing	ENGINE HALL - PLAN AND SECTIONS		A0 + 1/	60%
	Dimensional drawing	ENGINE HALL - SECTIONS		A1 + 2/	60%
	Reinforcement drawing	ENGINE HALL - PLAN AND SECTIONS		A0 + 1/	60%
	Reinforcement drawing	ENGINE HALL - SECTIONS		A0/	60%
	Dimensional and reinforcement drawing	STAIR SLAB, 1400x1200 - PLAN AND SECTIONS		A2/	60%
	Dimensional drawing	ENGINE FOUNDATION - Installation in EQ-areas		A0/	60%
	Dimensional and reinforcement drawing	DOOR SLAB, 1200x1200 - PLAN AND SECTIONS		A2/	60%
	Dimensional and reinforcement drawing	SIDEWALK AT "G" - PLAN AND SECTIONS		A1 + 2/	60%
	Layout drawing	ENGINE HAULING PLAN - PLAN		A1/	60%
230 OIL STORAGE AND CONTAINMENT AREA	Dimensional drawing	LO TANK AREA - PLAN AND SECTIONS		A1/	90%
	Reinforcement drawing	LO TANK AREA - PLAN AND SECTIONS		A1 + 1/	90%
	Dimensional drawing	UREA Storage TANK AREA - PLAN AND SECTIONS		A1/	90%
	Reinforcement drawing	UREA Storage TANK AREA - PLAN AND SECTIONS		A1 + 1/	90%
	Dimensional and reinforcement drawing	Bullet TANK AREA - PLAN AND SECTIONS		A1/	90%
	Dimensional drawing	UREA DAY TANK AREA - PLAN AND SECTIONS		A1/	90%
	Reinforcement drawing	UREA DAY TANK AREA -PLAN AND SECTIONS		A1/	90%
240 AUXILIARY STRUCTURES	Dimensional and reinforcement drawing	PUMP SHELTER FOUNDATION - PLAN AND SECTIONS		A2 + 1/	60%
	Dimensional and reinforcement drawing	CEMS CONTAINER FOUNDATION - PLAN AND SECTIONS		A2 + 1/	60%
	Layout drawing	PILE MAP FOR STACK FOUNDATION - PLAN AND SECTIONS		A1/	60%
	Dimensional drawing	STACK FOUNDATION - PLAN AND SECTIONS		A0/	60%
	Reinforcement drawing	STACK FOUNDATION - PLAN AND SECTIONS		A1 + 1/	60%
	Dimensional and reinforcement drawing	LO-UNLOADING PUMP SHELTER - PLAN AND SECTIONS		A1/	60%
	Layout drawing	RADIATOR FOUNDATION, PILE MAP - PLAN AND SECTIONS		A1/	60%
	Dimensional drawing	RADIATOR FOUNDATION - PLAN AND SECTIONS		A1/	60%
	Reinforcement drawing	RADIATOR FOUNDATION - PLAN AND SECTIONS		A1 + 1/	60%
	Layout drawing	PILE MAP FOR SCR AND VOCSIDIZER FOUNDATION - PLAN AND SECTIONS		A0/	60%
	Dimensional drawing	SCR AND VOCSIDIZER FOUNDATION - PLAN AND SECTIONS		A1/	90%
	Reinforcement drawing	SCR AND VOCSIDIZER FOUNDATION - PLAN AND SECTIONS		A1 + 1/	90%
	Layout drawing	PILE MAP FOR RADIATOR FOUNDATION_PHASE II - PLAN AND SECTIONS		A1/	60%
	Layout drawing	PILE MAP FOR STACK FOUNDATION_PHASE II - PLAN AND SECTIONS		A1/	60%
	Layout drawing	PILE MAP FOR SCR AND VOCSIDIZER FOUNDATION_PHASE II - PLAN AND SECTIONS		A0/	60%
	Dimensional and reinforcement drawing	PIPE SUPPORT-5 FOUNDATION - PLAN AND SECTIONS		A1/	60%
	Layout drawing	PILE MAP FOR GAS COLLECTION TANK-2 - PLAN AND SECTIONS		A2/	60%
	Dimensional and reinforcement drawing	UNLOADING SHELTER FOUNDATION		A1/	90%
	Dimensional and reinforcement drawing	BOOSTER UNIT FOUNDATION		A1/	90%
	Dimensional and reinforcement drawing	OILY WATER COLLECTING PIT		A2/	90%
	Dimensional and reinforcement drawing	PIPE SUPPORT FOUNDATIONS		A0/	90%
250 POWER TRANSMISSION	Dimensional drawing	STEP-UP TRANSFORMER FOUNDATION - PLAN AND SECTIONS		A1/1	90%
	Reinforcement drawing	STEP-UP TRANSFORMER FOUNDATION- PLAN AND SECTIONS		A171	90%
05 Frame					
210 POWER PLANT BUILDINGS					
220 ANCILLARY BUILDINGS					
240 AUXILIARY STRUCTURES	Assembly drawing	STACK STRUCTURE - FOUNDATION BOLT PLAN		A3/1	90%
	Assembly drawing	RADIATOR SUPPORT STRUCTURE - FOUNDATION BOLT PLAN		A2/1	90%
	Assembly drawing	RADIATOR SUPPORT STRUCTURE - 3D VIEW		A2/1	90%
	Assembly drawing	RADIATOR SUPPORT STRUCTURE - LINE VIEW R1, R2, R3, R4, R5, R6 & R7		A1 + 1/1	90%
	Assembly drawing	RADIATOR SUPPORT STRUCTURE - LINE VIEW RA, RB, RC, RD,		A1/1	90%
	Assembly drawing	EXHAUST DUCT SUPPORT TOWER_1 - FOUNDATION BOLT PLAN		A3/1	90%
	Assembly drawing	EXHAUST DUCT SUPPORT TOWER_2 - FOUNDATION BOLT PLAN		A3/1	90%

Assembly drawing	RADIATOR SUPPORT STRUCTURE - PLAN AND STAIR VIEW	A1 + 1/1	90%
Assembly drawing	STACK STRUCTURE - 3D VIEW	A1/1	90%
Assembly drawing	STACK STRUCTURE - LINE 1, 2, A & B	A0 + 3/	90%
Assembly drawing	STACK STRUCTURE - PLAN VIEWS	A0 + 1/1	90%
Assembly drawing	STACK STRUCTURE - LADDER & LANDING VIEWS	A0/1	90%
Assembly drawing	EXHAUST DUCT SUPPORT TOWER_1 - 3D VIEW, LINE & PLAN VIEW	A1/1	90%
Assembly drawing	EXHAUST DUCT SUPPORT TOWER_2 - 3D VIEW, LINE & PLAN VIEW	A1/1	90%
Assembly drawing	SCR AND VOCSIDISER PHASE II - 3D VIEWS	A2/1	90%
Assembly drawing	SCR AND VOCSIDISER PHASE II - LINE VIEW A, B, C, D & DETAILS	A0/1	90%
Assembly drawing	SCR AND VOCSIDISER PHASE II - PLAN VIEW, SECTIONS & DETAILS	A0/1	90%
Assembly drawing	SCR AND VOCSIDISER PHASE II - LINE 2, 3 & DETAILS	A0/1	90%
Assembly drawing	FIRE PUMP HOUSE - FOUNDATION BOLT PLAN	A2/1	90%
Assembly drawing	FIRE PUMP HOUSE - 3D VIEWS	A2/1	90%
Assembly drawing	FIRE PUMP HOUSE - PLAN & LINE VIEWS & DETAILS	A1/1	90%
Assembly drawing	PUMP SHELTER - FOUNDATION BOLT PLAN	A1/1	90%
Assembly drawing	PUMP SHELTER - 3D VIEWS	A1/1	90%
Assembly drawing	PUMP SHELTER - LINE 1,2,3,A, B & DETAILS	A1/1	90%
Assembly drawing	PUMP SHELTER - PLAN VIEWS	A1/1	90%
Assembly drawing	UNLOADING SHELTER - FOUNDATION BOLT PLAN	A1/1	90%
Assembly drawing	UNLOADING SHELTER - 3D VIEWS	A1/1	90%
Assembly drawing	UNLOADING SHELTER - LINE 1,2,3 & DETAILS	A1/1	90%
Assembly drawing	UNLOADING SHELTER - LINE VIEW A,B & C	A2/1	90%
Assembly drawing	RADIATOR PANEL SHELTER - 3D VIEWS, PLAN AND LINE VIEWS	A2/1	90%
06 Walls			
200 CIVIL WORKS & STRUCTURES			
Details	POWER HOUSE - WALL DETAILS	A4/	90%
Dimensional drawing	POWER PLANT - BUSHING PLATES	A1 + 1/	60%
Details	CONTROL HOUSE - WALL DETAILS	A4/	60%
210 POWER PLANT BUILDINGS			
List	ENGINE HALL - LIST OF SPA PANELS	A4/	60%
Assembly drawing	ENGINE HALL - EXTERNAL AND INTERNAL WALL PANEL	A0/1	60%
240 AUXILIARY STRUCTURES			
Material List	ROUND BUSHINGS	A3/1	60%
Drawing	BUSHING PLATES	A2	60%
07 Roof			
200 CIVIL WORKS & STRUCTURES			
Drawing	POWER PLANT - ROOF DETAILS	A4P/	60%
Assembly drawing	POWER PLANT - GUTTERS AND DOWNSPOUTS		
210 POWER PLANT BUILDINGS			
Assembly drawing	ENGINE HALL - INSTALLATION OF THE ROOF MONITOR	A1/1	60%
230 OIL STORAGE AND CONTAINMENT AREAS			
240 AUXILIARY STRUCTURES			
08 Doors and Windows			
200 CIVIL WORKS & STRUCTURES			
Dimensional drawings	DOORS	A3/	90%
210 POWER PLANT BUILDINGS			
09 Finishing and Furnishing			
200 CIVIL WORKS & STRUCTURES			
210 POWER PLANT BUILDINGS			
Material list	POWER HOUSE - ROOM SPECIFICATION	A3/	90%
Details	POWER HOUSE - ACCESS FLOOR	A1/1	60%
Details	CONTROL HOUSE - ACCESS FLOOR	A2/1	60%
Assembly drawing	CONTROL HOUSE - ACCESS FLOOR +1.850	A2/	60%
240 AUXILIARY STRUCTURES			
10 Heating, Ventilation & Air Conditioning			
210 POWER PLANT BUILDINGS			
Flow diagram	Utility block - Ventilation and air conditioning	A2/	90%
System description	HVAC System Description & Calculations - Ventilation and air conditioning	A4/	90%
Layout drawing	Utility block - Ventilation and air conditioning	A1 + 1/	90%
Dimensional drawing	Generator outlet duct	A2/	90%
Layout drawing	Control house - Ventilation and air conditioning	A1/	90%
Flow diagram	Control house - Ventilation and air conditioning	A1 + 1/	90%
11 Plumbing & Sanitary Installations			
210 POWER PLANT BUILDINGS			
Layout drawing	ENGINE HALL, BELOW +0.000 - OILY WATER DRAINAGE	A1 + 1/	60%
230 OIL STORAGE AND CONTAINMENT AREAS			
Layout drawing	LO TANK AREA - Oily water and rainwater drainage	A2/	90%
Layout drawing	UREA DAY TANK AREA - Oily water and rainwater drainage	A2/	90%
Layout drawing	UNLOADING SHELTER - Oily water and rainwater drainage	A2/	90%
260 SITE WORKS			
Layout drawing	SITE WORKS - UNDER GROUND PIPE SYSTEM	A0/	90%
12 Drawings for Information			

<div></div> <div>WÄRTSILÄ</div> <div><div>- General</div><div>Power Plants</div></div>			Doc. Classification: Confidential													
			Title:	List of Documents - Mechanical	DocID:	DBAF366803										
					Revision:	-										
			Author:	Jyrki Järvinen	Sheets:	1										
			Checked by:	Jyrki Järvinen / 2019-03-08	Status:	Finalised										
Finalised	Jyrki Järvinen / 08.03.2019	Description:	Tentative													
Type:	List of documents	Project:	WAPA II													
Changed		Document Type	Name and Description			Document Id						Engineering review stages				
						Vendor Doc ID	Wärtsilä Doc ID	Rev.	Size/ Pages							
rev.	new												30%	60%	90%	
WD-P6.1 Design Master, Mechanical																
List of documents			List of Documents													
1. General																
List			Process design parameters - Pressures and temperatures													X
Instruction			Colour Program													X
Description			Main Flow diagram symbols													X
2. Generating set																
Drawing			Installation Instructions of Seismic Dampers on Foundation - Seismic Dampers													X
Drawing			Generating Set W20V32LG													X
Drawing			Engine Service Spaces W20V32LG													X
Drawing			Assembly Drawing for Seismic Dampers W20V32LG													X
Drawing			Dimensional Drawing for Seismic Dampers W20V32LG													X
Flexible connections																
List			Flexible hoses list													X
Spring element and distance plate																X
Dimensional drawing			Distance plate 5MM													X
Dimensional drawing			Distance plate 2MM													X
Dimensional drawing			Spring element													X
3. Auxiliary system																
W32LG Auxiliary Module																
Main flow diagram			W32LG Auxiliary Module - MOD 0_1													X
Device list			W32LG Auxiliary Module - MOD 0_1													X
Dimensional drawing			W32LG Auxiliary Module - MOD 0_1													X
Preheating unit																
Dimensional drawing			Elect. Preheating Unit W32/34 NA - VDA 011													X
Flow diagram			Elect. Preheating Unit W32/34 NA - VDA 011													X
Device list			Elect. Preheating Unit W32/34 NA - 60 Hz													X
3.1 Liquid Fuel system																
Description			(Z) Liquid fuel system - Process description													X
Main flow diagram			(Z)Liquid fuel system 1(2)													X
Main flow diagram			(Z)Liquid fuel system 2(2)													X
Device list			(Z) Liquid fuel system - Device list													X
EFB booster unit																
Dimensional drawing			EFB booster unit													X
Flow diagram			EFB booster unit													X
Device list			EFB booster unit													X
Low pressure compressor																
Dimensional drawing			Low pressure compressor													X
Flow diagram			Low pressure compressor													X
2nd stage compressor for liquifying																
Dimensional drawing			2nd stage compressor for liquifying													X
Flow diagram			2nd stage compressor for liquifying													X
LFO pilot feeder unit, with 3 pumps																
Dimensional drawing			LFO pilot feeder unit, with 3 pumps													X
LFO pilot feeder unit - common																
Dimensional drawing			LFO pilot feeder unit - common													X
LFO transfer unit - common																
Dimensional drawing			LFO transfer unit - common													X
LFO Automatic filter unit - common																
Dimensional drawing			LFO Automatic filter unit - common													X
LFO duplex filter unit - common																
Dimensional drawing			LFO duplex filter unit - common													X
LFO pilot fuel flow meter - common																
Dimensional drawing			LFO pilot fuel flow meter - common													X
LFO main fuel flow meter - common																
Dimensional drawing			LFO main fuel flow meter - common													X
LPG Bullet tank																
Dimensional drawing			LPG Bullet tank													X
3.2 Lube oil system																
Description			(Q) Lube oil system - Process description													X
Main flow diagram			(Q) Lube oil system													X
Device list			(Q) Lube oil system - Device list													X
Lube Oil Transfer Pump Unit, Double																
Dimensional drawing			QAE 901 Lube oil transfer pump unit - Dimensional drawing Double													X
Device list			Lube oil transfer pump unit (Double) - Device list, double													X
Flow diagram			Lube oil transfer pump unit (Double) - UL listed with NEMA motor													X
Lube Oil Transfer Pump Unit, Mobile 9.9 m³/h (60Hz)																
Dimensional drawing			QLC 901 Mobile LO transfer pump unit - QLC 901 LUBE OIL UNIT (MOBILE)													X
Flow diagram			Lube oil transfer pump unit (mobile) - NEMA motor													X
Lube Oil Unloading Pump Unit, Stationary																
Dimensional drawing			Lube Oil Transfer Pump Unit, Stationary 9.9 m3/h NA - QAE 90_													X
Main flow diagram			Lube oil transfer pump unit NA - QAE 90_ Stationary													X
Device list			Lube oil Unloading Pump Unit, Stationary													X
Oil mist Separator 2.0 Single																
Device list			Oil mist Separator 2.0 Single													X
Flow diagram			Oil mist Separator 2.0 Single													X
Dimensional drawing			Oil mist separator 2.0 Single													X
New Lubricating oil tank																
Dimensional drawing			New Lubricating oil tank													X
Lubricating oil used/service tank																
Dimensional drawing			Lubricating oil used/service tank													X
3.3 Compressed air system																
Main flow diagram			(T) Compressed air system													X
Device list			(T) Compressed air system - Device list													X
Description			(T) Compressed air system													X
Compressed air receiver																
Dimensional drawing			Instrument air bottle													X

Instrument air compressor Dimensional drawing P&I diagram	Instrument air compressor Instrument air compressor	X X
<b>3.4 Cooling system</b>		
Device list	(V) Cooling water system - Device list	X
Description	(V) Cooling water system	X
Main flow diagram	(V) Cooling water system	X
Expansion vessel 600L		
Dimensional drawing	VEA 011 Expansion Vessel 600L - 600L open	X
Device list	VEA 011 Expansion Vessel 600 L - Device list	X
Flow diagram	Expansion Vessel - VEA 011	X
Radiator		
Dimensional drawing	Handrails and one ladder	X
Dimensional drawing	Radiator	X
<b>3.5 Intake air system</b>		
Description	(N) Charge air & exhaust gas system - Process description	X
Device list	(N) Charge air & exhaust gas system - Device list	X
Main flow diagram	(N) Charge air & exhaust gas system	X
Charge air filter		
Dimensional drawing	NGA 011 Charge air filter	X
Charge air silencer		
Dimensional drawing	Charge air silencer	X
Turbo washing unit		
Device list	NHC 011 Turbo Washing Unit (Gas) - Device list	X
Main flow diagram	Turbo Washing Unit (Gas) - NHC 011	X
Dimensional drawing	NHC/011 TURBO WASHING UNIT	X
<b>3.6 Exhaust gas system</b>		
Exhaust gas system		
Dimensional drawing	NHA 011 Exhaust gas silencer	X
<b>3.7 Sludge system</b>		
Device list	(D) Oily water system - Device list	X
Main flow diagram	(D) Oily water system	X
Description	(D) Oily water system	X
<b>3.8 Water supply system</b>		
Description	(V2) Water supply system	X
Device list	(V2) Water supply system - Device list	X
Main flow diagram	(V2) Water supply system	X
<b>4. Heat recovery system (N/A)</b>		
<b>5. Emission control system</b>		
CEMS		
Dimensional drawing	General arrangement analyser shelter	X
Flow diagram	System diagram gas flow	X
Dimensional drawing	General arrangement analyser shelter	X
Dimensional drawing	General arrangement counter flange mounting	X
Dimensional drawing	General arrangement sample probe	X
Vocsidizer		
Layout drawing	Vocsidizer layout	X
Assembly drawing	Fixing details	X
P&I diagram	Pneumatic diagram	X
SCR Unit		
Dimensional drawing	SCR Unit	X
Reducing agent Day tank, 50m3		
Dimensional drawing	Reducing agent Day tank, 50m3	X
Reducing agent Storage tank, 250m3		
Dimensional drawing	Reducing agent storage tank, 250m3	X
Reducing agent Filtering unit		
Dimensional drawing	Reducing agent Filtering unit	X
Reducing agent Unloading unit		
Dimensional drawing	Reducing agent Unloading unit	X
<b>6. Fire fighting system</b>		
Main flow diagram	(V3) Fire protection system 1(2) - Site	X
Main flow diagram	(V3) Fire protection system 2(2) - Engine hall with sprinklers	X
Device list	(V3) Fire protection system - Device list	X
Description	(V3) Fire protection system	X
6.1 Fire protection layouts		
Layout drawing	Fire protection layout, engine hall	X
Layout drawing	Fire protection layout, site	X
<b>7. Layouts and floor plans</b>		
7 List of drawings		
7.1 Master Layout, Site layout		
Master layout	Power plant site	X
Master layout	Power plant area, interconnection points	X
Master layout	Engine hall plan	X
Master layout	Engine hall section	X
<b>7.2 Floor plans, location plans, penetration drawings</b>		
7.2 Floor plans, location plans, penetration drawings		
Layout drawing	Unit location - Engine hall	X
Layout drawing	Unit location - Lo tank yard & Pump shelter	X
Layout drawing	Unit location - Outside area	X
Layout drawing	Unit location - Radiator area	X
Layout drawing	Unit location - Vocsidizer, stage II , outside area	X
Layout drawing	Wall penetrations - Engine Hall	X
Layout drawing	Wall penetrations - GPRS building	X
Layout drawing	Penetration plate - Day tank area	X
Layout drawing	Secondary pipe support location - Key plan, all areas	X
Layout drawing	Secondary pipe support location - Engine Hall & compressor room	X
Layout drawing	Secondary pipe support location - Outside area	X
Layout drawing	Secondary pipe support location - Day tank area	X
Layout drawing	Secondary pipe support location - Urea tank area	X
Layout drawing	Loose steel - Engine Hall	X
Layout drawing	Loose steel - Outside area	X
Layout drawing	Loose steel - Outside area	X
Layout drawing	Loose steel - GPRS building	X
Layout drawing	Loose steel - Tank yards	X
Layout drawing	Interconnection point Layout	X
<b>7.3 Pipe layouts and pipe assemblies</b>		
7.3.1 Preassembled racks		
7.3.2 Engine hall and workshop		
Layout drawing	000 pipes- Compressed Air and Intake air system - Engine wise, plan and section	X
Layout drawing	000 pipes- Cooling and water supply systems- Engine wise, plan and section	X
Layout drawing	000 pipes- Fuel gas Fuel oil and lube oil systems- Engine wise, plan and section	X
Layout drawing	000 pipes- Compressed Air and Intake air system - Engine wise, 3d view	X
Layout drawing	000 pipes- Cooling and water supply systems- Engine wise, 3d view	X
Layout drawing	000 pipes- Fuel gas and lube oil systems- Engine wise, 3d view	X
Layout drawing	900 pipes- All systems, plan and section	X
Layout drawing	900 pipes- All systems, plan and section	X
Layout drawing	900 pipes- All systems, plan and section	X

Layout drawing	900 pipes- All systems, 3d view	X
Layout drawing	900 pipes- All systems, 3d view	X
Layout drawing	900 pipes- All systems, 3d view	X
7.3.3 Cooler area		
Layout drawing	000- Pipes, Cooling system - Radiator area	X
Layout drawing	000- Pipes, Cooling system - Radiator area	X
7.3.4 Mechanical utility area		
Layout drawing	900 pipes - All systems, GPRS building	X
Layout drawing	900 pipes - All systems, GPRS building	X
Layout drawing	900 pipes - All systems, GPRS building	X
Layout drawing	Key plan - All areas	X
Layout drawing	900 pipes - All systems, Outside area	X
Layout drawing	900 pipes - All systems, Outside area	X
Layout drawing	900 pipes - All systems, Outside area	X
Layout drawing	900 pipes - All systems, Outside area	X
Layout drawing	000 pipes - All systems, Outside area	X
Layout drawing	000 pipes - All systems, Outside area	X
Layout drawing	000 pipes - All systems, Outside area	X
Layout drawing	000 pipes - All systems, Outside area	X
Layout drawing	Sampling line for CEMS - Stack area	X
Layout drawing	000 pipes - Intake are system, Outside	X
7.3.6 Day tank area		
Layout drawing	All systems - Day tank area and pump shelter	X
Layout drawing	All systems - Day tank area and pump shelter	X
Layout drawing	All systems - Day tank area and pump shelter	X
Layout drawing	All systems - Day tank area and pump shelter	X
7.3.8 Exhaust gas piping		
Assembly drawing	Exhaust gas system -3D view	X
Layout drawing	Exhaust gas system -View A	X
Layout drawing	Exhaust gas system	X
Dimensional drawing	Exhaust gas system	X
Dimensional drawing	Exhaust gas system	X
Dimensional drawing	Exhaust gas system	X
7.3.9 Intake air piping		
Assembly drawing	Intake Air system -3D view	X
Layout drawing	Intake Air system -View A	X
Layout drawing	Intake Air system	X

## 8. Manufacturing drawings

### 8.1 Platforms

8.1. Assembly drawing	Engine platform - General arrangement	X
Assembly drawing	Engine platform - Frame arrangement	X
Assembly drawing	Engine platform - Handrail arrangement	X
Assembly drawing	Engine platform - Grating arrangement	X
8.1.2 Auxiliary area platforms		
Auxiliary area platform		
8.1. Assembly drawing	Auxiliary area platform - General arrangement	X
Assembly drawing	Auxiliary area platform - Frame arrangement	X
Assembly drawing	Auxiliary area platform - Handrail arrangement	X
Assembly drawing	Auxiliary area platform - Grating arrangement	X
EGM access platform		
Assembly drawing	EGM access platform	X
8.1.3 Other platforms		
Crossover platform		
Assembly drawing	Crossover platform -	X
Generator duct and support structure_021		
Assembly drawing	Generator duct support structure -	X

<div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>WÄRTSILÄ</div><div>Wärtsilä Projects Oy</div><div>Power Plants</div></div></div> <div><div>Doc. Classification:</div><div>Confidential</div></div>				<div><div>Title:</div><div>List of Documents Electrical engineering</div></div> <div><div>DocID:</div><div>DBAF366806</div></div> <div><div>Revision:</div><div>-</div></div> <div><div>Author:</div><div>Petteri Mäkinen</div></div> <div><div>Checked by:</div><div>/</div></div> <div><div>Finalised</div><div>Jonas Carlsson / 08.03.2019</div></div> <div><div>Type:</div><div>List of documents</div></div>		<div><div>Sheets:</div><div>1</div></div> <div><div>Status:</div><div>Finalised</div></div> <div><div>Description:</div><div></div></div> <div><div>Project:</div><div>WAPA New Power Generation Project Extension</div></div>				
<div>Changed</div>		<div>Document Type</div>	<div>Name and Description</div>	<div>Document Id</div>				<div>Engineering Review Stages</div>		
<div>rev. new</div>				<div>Vendor Doc ID</div>	<div>Wärtsilä Doc ID</div>	<div>Rev.</div>	<div>Size/ Pages</div>	<div>30%</div>	<div>60%</div>	<div>90%</div>
<div>WD-P6.2 Design Master, Electrical</div>										
<div>00 - Common information</div>										
		<div>List</div>	<div>Power Plants grouping &amp; coding of processes &amp; signals</div>	<div>DBAE937375</div>	<div>-</div>	<div>A0/</div>		<div>X</div>		
		<div>Guideline</div>	<div>General guidelines for electrical installation work</div>	<div>DBAE937366</div>	<div>-</div>	<div>A0/</div>		<div>X</div>		
<div>01 - Engine</div>										
		<div>Wiring diagram</div>	<div>Engine wiring diagram W20V32LG</div>		<div>-</div>	<div>A3/32</div>		<div>X</div>		
		<div>Specification</div>	<div>Engine protections W20V32LG</div>		<div>-</div>	<div>A4/2</div>		<div>X</div>		
		<div>Description</div>	<div>Safety and Protection Features in Engine Control System -</div>		<div>-</div>	<div>A4/3</div>			<div>X</div>	
<div>02 - Generator</div>										
		<div>01 - Mechanical drawings</div>								
		<div>Drawing</div>	<div>Removing of rotor drawing</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Sleeve bearing N-end dimensional drawing</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Sleeve bearing D-end dimensional drawing</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>ET-Dimensions</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Cross sectional drawing</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Transport and hoist trapaulin</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Rotor drawing</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Main dimensional drawing</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>Drawing</div>	<div>Removing of transport locking</div>		<div>-</div>	<div>A3/1</div>			<div>X</div>	
		<div>02 - Electrical drawings</div>								
		<div>Drawing</div>	<div>AVR1020 Dimensional drawing</div>		<div>-</div>	<div>A3/1</div>		<div>X</div>		
		<div>Circuit diagram</div>	<div>AVR1020 Circuit diagram</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>Drawing</div>	<div>Terminal box for capacitor and lightning arrester</div>		<div>-</div>	<div>A2/1</div>			<div>X</div>	
		<div>Drawing</div>	<div>Anticondensation heater connection cable mounting</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>Drawing</div>	<div>Exiter rotor with diode bridge</div>		<div>-</div>	<div>A3/1</div>		<div>X</div>		
		<div>Drawing</div>	<div>Layout of connection</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>Drawing</div>	<div>Terminal box for accessories</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>Wiring diagram</div>	<div>BAGO_1 Main connection diagram</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
		<div>03 - Manual</div>								
		<div>04 - Technical specification</div>	<div>Technical specification of generator</div>		<div>-</div>	<div>A2/1</div>		<div>X</div>		
<div>03 - Control system</div>										
		<div>Description</div>	<div>Control system description - Gas Plants (update)</div>	<div>DBAE207815</div>	<div>-</div>	<div>A4/</div>				<div>X</div>
		<div>01 - Drawings &amp; Lists</div>								
		<div>Dimensional drawing</div>	<div>Server rack panel</div>		<div>-</div>	<div>A4/</div>				<div>X</div>
		<div>Layout drawing</div>	<div>Genset control panel CFC041</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Genset control panel CFC051</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Genset control panel CFC061</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Genset control panel CFC071</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Wiring diagrams</div>	<div>Genset control panel CFC041</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Genset control panel CFC051</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Genset control panel CFC061</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Genset control panel CFC071</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Genset Control Panel CFC041</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Genset Control Panel CFC051</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Genset Control Panel CFC061</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Genset Control Panel CFC071</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Layout drawing</div>	<div>Local Genset Control Panel CFE041</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Local Genset Control Panel CFE051</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Local Genset Control Panel CFE061</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>Local Genset Control Panel CFE071</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Wiring diagrams</div>	<div>Local Genset Control Panel CFE041</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Local Genset Control Panel CFE051</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Local Genset Control Panel CFE061</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Wiring diagrams</div>	<div>Local Genset Control Panel CFE071</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Local Genset Control Panel CFE041</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Local Genset Control Panel CFE051</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Local Genset Control Panel CFE061</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Local Genset Control Panel CFE071</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Layout drawing</div>	<div>Common control panel CFA902</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Wiring diagrams</div>	<div>Common control panel CFA902</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Cable list</div>	<div>Common control panel CFA902</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Layout drawing</div>	<div>Automation lay-out</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>List</div>	<div>List of communication cables</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Description</div>	<div>LG Power Plant Sequence</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Description</div>	<div>Control System Cause and Effect</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Description</div>	<div>Synchronizing</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Description</div>	<div>LV System functional description</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Drawing</div>	<div>sWOIS server rack CWC901 update</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>02 - Manuals</div>								
		<div>03 - Specification &amp; reports</div>								
<div>04 - Medium voltage switchgear</div>										
		<div>01 - Drawings &amp; Lists</div>								
		<div>Calculation</div>	<div>Relay Seting Calculation - MV System (update)</div>	<div>DBAE606108</div>	<div>b</div>	<div>A4/</div>			<div>X</div>	
		<div>List</div>	<div>SEL487B Relay Settings for busbar differential protection</div>						<div>X</div>	
		<div>List</div>	<div>SEL351-5 Relay Settings for busbar and bus tie feeder protection</div>						<div>X</div>	
		<div>List</div>	<div>SEL351-5 Relay Settings for auxiliary transformer feeder protection</div>						<div>X</div>	
		<div>List</div>	<div>SEL351 Relay Settings for step up transformer feeder protection</div>						<div>X</div>	
		<div>List</div>	<div>GE G60 Relay Settings for Generator feeder Back up Protection</div>						<div>X</div>	
		<div>List</div>	<div>SEL700G Relay Settings for Generator feeder main Protection</div>						<div>X</div>	
		<div>Drawing</div>	<div>Single line Diagram (update)</div>	<div>DBAE201956</div>	<div>f</div>	<div>A4/</div>		<div>X</div>		
		<div>Drawing</div>	<div>Typical symbols used in SLD's</div>	<div>DBAE449967</div>	<div>a</div>	<div>A4/</div>		<div>X</div>		
		<div>Drawing</div>	<div>Detailed MV Single Line diagram</div>						<div>X</div>	
		<div>Layout drawings</div>	<div>MV SWG</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Wiring diagrams</div>	<div>MV SWG</div>		<div>-</div>	<div>A4/</div>			<div>X</div>	
		<div>Calculation</div>	<div>Short Circuit Calculation - Report - MV and LV System (update)</div>	<div>DBAE387953</div>	<div>b</div>	<div>A4/</div>			<div>X</div>	
		<div>Calculation</div>	<div>Short Circuit Calculation - Appendix - MV and LV System (update)</div>	<div>DBAE387948</div>	<div>b</div>	<div>A4/</div>			<div>X</div>	
		<div>Calculation</div>	<div>CT Sizing Calculation - MV System</div>	<div>DBAE381488</div>	<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Specification</div>	<div>Principal Protection Scheme (update)</div>	<div>DBAE202022</div>	<div>g</div>	<div>A4/</div>		<div>X</div>		
		<div>Report</div>	<div>Arc flash analysis -MV -LV system</div>							<div>X</div>
		<div>Calculation</div>	<div>Arc Flash analysis -Appendix (Including labels)-MV and LV system</div>							<div>X</div>
		<div>02 - Manuals</div>								
<div>05 - System grounding</div>										
		<div>Dimensional drawing</div>	<div>Neutral grounding resistor, Dimensional drawings</div>		<div>-</div>	<div>A3/1</div>		<div>X</div>		
<div>06 - Low voltage switchgear</div>										
		<div>01 - Drawings &amp; Lists</div>								
		<div>Layout drawing</div>	<div>BFA041 Engine Wise LV-Switchboard</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		
		<div>Layout drawing</div>	<div>BFA051 Engine Wise LV-Switchboard</div>		<div>-</div>	<div>A4/</div>		<div>X</div>		

Layout drawing	BFA061 Engine Wise LV-Switchboard	-	A4/	X		
Layout drawing	BFA071 Engine Wise LV-Switchboard	-	A4/	X		
Layout drawing	BFA902 extension Backup LV Switchboard	-	A4/	X		
Layout drawing	BFA903 Common LV-Switchboard (update)	-	A4/	X		
Layout drawing	BFA901 extension Main LV Switchboard	-	A4/	X		
Wiring diagrams	BFA041 Engine Wise LV-Switchboard	-	A4/		X	
Wiring diagrams	BFA051 Engine Wise LV-Switchboard	-	A4/		X	
Wiring diagrams	BFA061 Engine Wise LV-Switchboard	-	A4/		X	
Wiring diagrams	BFA071 Engine Wise LV-Switchboard	-	A4/		X	
Wiring diagrams	BFA902 extension Backup LV Switchboard	-	A4/		X	
Wiring diagrams	BFA903 Common LV-Switchboard (update)	-	A4/		X	
Wiring diagrams	BFA901 extension Main LV Switchboard	-	A4/		X	
Single line diagram	Preliminary LV-Single Line Diagram	-	A4/			X
List	Arc Detection Settings for LV Switchgear (VAMP 321 Relay)	-	A4/			X
02 - Consumer list		-	A4/		X	
Calculation	LV Consumer list					
05 - Manuals						
07 - Auxiliary systems						
3. - Engine auxiliary module						
Layout drawing	Auxiliary control panel BJA041	-	A4/	X		
Layout drawing	Auxiliary control panel BJA051	-	A4/	X		
Layout drawing	Auxiliary control panel BJA061	-	A4/	X		
Layout drawing	Auxiliary control panel BJA071	-	A4/	X		
Wiring diagrams	Auxiliary control panel BJA041	-	A4/			X
Wiring diagrams	Auxiliary control panel BJA051	-	A4/			X
Wiring diagrams	Auxiliary control panel BJA061	-	A4/			X
Wiring diagrams	Auxiliary control panel BJA041	-	A4/			X
Cable list	Auxiliary control Panel BJA041	-	A4/			X
Cable list	Auxiliary control Panel BJA051	-	A4/			X
Cable list	Auxiliary control Panel BJA061	-	A4/			X
Cable list	Auxiliary Control Panel BJA071	-	A4/		X	
Drawing	BJA0_1-E001 Junction Box					
3.1 - Fuel system						
Layout drawing	BLH902 Control Panel	-	A4/	X		
Wiring diagram	BLH902 Control Panel	-	A4/			X
Wiring diagram	BLR0_1 Compact gas ramp	-	A4/			X
3.2 - Lube oil system						
Drawing	LO Unloading pump unit control panel - BJP90x	-	A4/		X	
Drawing	LO Transfer pump unit (double) control panel-BJP90X	-	A4/		X	
3.3 - Compressed air system						
Wiring diagram	Instrument air unit	-	A4/			X
3.4 - Cooling system						
Drawing	Radiator VFD panel	-	A4/	X		
Drawing	Radiator panel BLP01x	-	A4/	X		
3.5 - Intake air system						
Wiring diagram	Charge air filter local control panel	-	A4/			X
3.6 - Exhaust gas system						
3.7 - Sludge system						
Wiring diagram	Oily Water transfer pump unit BJU90X	-	A4/			X
Wiring diagram	Oily Water transfer pump unit BJU90X	-	A4/			X
3.8 - Water supply system						
4. - Heat recovery system						
5. - Emission control system						
CEMS						
Vocsidizer						
Wiring diagram	Vocsidizers	-	A4/			X
Layout drawing	Vocsidizers panel drawings	-	A4/			X
List	Vocsidizer cable list	-	A4/			X
6. - Fire fighting system						
08 - Auxiliary transformers						
Wiring diagram	Station transformer wiring diagram	-	A4/		X	
Layout drawing	Station transformer nameplate	-	A4/	X		
Dimensional drawing	Station transformer dimensions	-	A4/	X		
09 - DC system						
01 - Drawings & Lists						
Layout drawing	125VDC battery rack	-	A4/	X		
Single line diagram	Single line diagram BEY90_x	-	A4/			X
Assembly drawing	General assembly drawing BEY90_x	-	A4/		X	
Circuit diagram	Circuit Diagram BEY90_x	-	A4/		X	
Specification	DC Consumer list	-	A4/	X		
02 - Manuals						
10 - Plant electrification						
01 - Earthing						
01 - Below 0-level						
Layout drawing	GROUNDING DETAILS SHEET 1	-		X		
Layout drawing	GROUNDING DETAILS SHEET 2	-		X		
Layout drawing	GROUNDING PLAN	-		X		
Material list	GROUNDING BILL OF MATERIAL - ELECTRICAL	-		X		
Specification	UNDERGROUND ELECTRICAL INSTALLATION SPECIFICATION - Underground Installation	-		X		
Calculation	Grounding Calculation	-		X		
02 - Above 0-level						
Material list	Earthing Design - Above 0 level	-			X	
Layout drawing	Earthing Layout - Above 0 level	-			X	
02 - Lightning protection						
Layout drawing	LIGHTNING PROTECTION DETAILS - LIGHTNING PROTECTION				X	
Layout drawing	LIGHTNING PROTECTION PLAN				X	
Material list	Lightning Protection - Material List				X	
Specification	Lightning Protection - Lightning Protection Specification			X		
03 - Cables & Raceways						
Material list	MV cable termination kits					
Material list	Control cable material list					
01 - Conduits						
Material list	Cable Conduits - Cable Conduits				X	
Layout drawing	Power Details - Conduits				X	
Layout drawing	Power Details - Electrical				X	
Design NWD file	Cable Conduit				X	
	Cable Conduits			X		
02 - Ladders						
Material list	Cable Ladders - Cable Ladders					X
Layout drawing	Cable Installation - Installation details					X
Layout drawing	Above 0-Level Tubing					X
Material list	Installation Material - Sampling Pipe Clamping					X
Material list	Cable Ladders Installation - Cable Ladders					X
List	Cable Ladder - Cable Filling Percentage Report					X
3D view	Cable Ladders					X
Layout drawing	Cable Ladders					X
Design NWD file	Cable Conduits					X
03 - Cables						
Specification	LV,Control & Instrumentation Cable Specification			X		
Specification	Control cable types to be used -			X		



Material list	MV Cable Clamps - MV Cable Clamps				X
Material list	Installation Material - LV Cables				X
Material list	Cable Material - MV Cables				X
Specification	Electrical Specification - 15 KV Power Cable		X		
Report	Big LV Cable calculation report - 480 V Power Applications		X		
Layout drawing	Power Details - Electrical				X
Material list	Installation Material - MV Cables				X
Report	MV Cable Calculation Report - 15 KV Cables		X		
List	Cable Schedule - Cables				X
Material list	Cable Material - Control Cables				X
Material list	Cable Material - LV Cables				X
04 - Lighting					
01 - Layouts, lists & Panels					
Layout drawing	Lighting Layout - Lighting System			X	
Dimensional drawing	Small LV trafo dimensions				X
Dimensional drawing	Panel boards				X
Instruction	Installation Operation and Maintenance Guide for small trafos				X
Layout drawing	Contactor Schematics - Lighting			X	
Layout drawing	Lighting System			X	
Layout drawing	Lighting Detail Drawings			X	
Material list	Lighting System - Lighting Design			X	
Specification	Above Ground Installation Specification - Electrical			X	
Layout drawing	Power Details - Electrical			X	
Light Fixture location NWD file	Design			X	
02 - Emergency & Exit lighting					
05 - Office IT					
01 - Telephone & Data system					
02 - CCTV system					
03 - Master clock					
06 - HVAC					
Report	Heat dissipation Calculation				X
07 - Fire detection					
Specification	Fire Detection & Alarm Specification - Fire Detection System		X		
Specification	Fire Detection Design Basis and Operating Philosophy - Fire Detection System		X		
Material list	Instrument/Device Schedule - Fire Detection System				X
Layout drawing	Loop Diagram				X
Layout drawing	General Block Diagram - Fire Detection System				X
Layout drawing	Instrument /Device Location Plan				X
Technical specification	Instrument/Device Data Sheets - Fire Detection System				X
Specification	Cable Schedule - Fire Detection System				X
Specification	Junction/Marshalling Box Schedule - Fire Detection System				X
Layout drawing	Fire Panel Front Layout and internal wiring diagram - Fire Detection System				X
Material list	Fire Detection Cable Material List - Cable Material				X
Specification	Cause & Effect Chart - Fire Detection System				X
08 - Gas detection					
Description	Fire and Gas detection design basis		X		
Layout drawing	Panel Bill of Material - Gas Detection System			X	
Layout drawing	Back Panel Layout Details - Gas detection System			X	
Layout drawing	panel Elevation Detail - Gas detection System			X	
Details	Fabrication details JB Gas detection system			X	
Material list	System Components - Gas Detection System			X	
List	Cable Schedule - Gas detection			X	
Specification	Gas Detection System Description - Gas detection			X	
Material list	Tubing Material List - Stainless Steel tubing and fittings			X	
Specification	Cause & Effect Chart - Gas Detection System			X	
Layout drawing	Installation details - Gas Detection System			X	
Layout drawing	Gas Detection System			X	
Wiring diagram	Junction Box - Gas detection System			X	
Wiring diagram	DTB - Gas detection System			X	
Wiring diagram	ATB- Gas detection System			X	
09 - Trace heating					
10 - PA system					
11 - Pit ventilation					
11 - Step-up transformers					
Specification	Step-up transformer technical specification	-	AA/	X	
Layout drawings	Step-up transformer Outline drawing	-	AA/	X	
Wiring Diagram	Control panel diagram	-	AA/		X
Drawing	Nameplate	-	AA/		X
12 - Studies and reports					
Report	Dynamic Simulation of WAPA				X