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Level 3.5

Level 3

Level 2

LHVS - ONSHORE

OER

Cyber Security Services (DMZ)

McAfee ePO Server (by Client)

WSUS Server (by Client)

ICCP

Hold 1

HV-SCADA

PLANT FIREWALL (by Client)

Supervisory Network

SYSTEM FIREWALL

TAG Historian Server — History Services

TAG Management server 1 — Backup Services, NMS HiVision, ESXi Mgmt

Host 3:
- **VM** Domain Controller 3 — Domain Service
- **VM** Management Server 2 — Antivirus
- **VM** Management Server 3 — Terminal Server, WSUS

Operational Management Network (DMZ)

Note 4

TAG Engineering Station — Operator Workplace, Control Builder

Host 1:
- **VM** Domain Controller 1 — Domain Service
- **VM** System Server 1 — Aspect Directory, CS Control 1A
- **VM** System Server 3 — CS IEC61850 1A

Host 2:
- **VM** Domain Controller 2 — Domain Service
- **VM** System Server 2 — Aspect Directory, CS Control 1B
- **VM** System Server 4 — CS IEC61850 1B

FOPP

FOPP

FOPP

Server and Network Cabinet A & B

CCR

Hold 3

HMI Network A

HMI Network B

TAG Operator Station — Operator Workplace

TAG Operator Station — Operator Workplace, IAMS (FIM)

Printer

OHVS - PLATFORM

BLPH - PLATFORM

ICCP - Refer to sheet 2:A1

HV-SCADA - Refer to sheet 2:A2

HMI-A - Refer to sheet 2:A2
HMI-B - Refer to sheet 2:A2

Service Firewall - Refer to sheet 2:A2

NOTES

Note 1: FGS logic and voting are managed by relevant UCP (BESS, Fuel Cell and Electrolyser). These UCP's will send the alarms (Confirmed Gas and Confirmed H2) to the FGS.
Note 2: The Profinet IO and Modbus TCP network will be implemented as one physical network.
Note 3: HLRA process will determine if and what kind of counter measures are needed for the packages
Note 4: Details on which clients/servers and whether they shall be kept, removed or virtualized is not finalized.

HOLDS

Hold 1: No information on ICCP termination
Hold 2: Not decided which 3rd party packages will need to be connected to the Service Network.
Hold 3: If the CCR is not located by the OER additional HW and engineering is needed.
Hold 4: Connections to Solar Farm to be confirmed
Hold 5: To be confirmed if Profinet or Modbus TCP connection will be available

ABBREVIATIONS

CAP	Critical Action Panel	ICCP	Impressed Current Cathodic Protection
CCR	Central Control Room	IDS	Intrusion Detection System
CCS	Central Control System	ITER	Instrument/Telecom Eq. Room
EMCS	Electrical Monitoring Control System	LV	Low Voltage
EWS	Engineering WorkstAtion	NTP	Network Time Protocol
FGS	Fire and Gas System	OER	Onshore Equipment Room
FOPP	Fibre Optical Patch Panel	OWS	Operator Workstation
GPS	Global Positioning System	PCS	Process Control System
HV	High Voltage	RNRP	Redundant Network Routing Protocol
		SIS	Safety Instrumented System

SYMBOLS

- Device / Equipment
- Device / Equipment Redundant
- AREA — Room/Area
- Cabinet/ Enclosure
- Electrical Network
- Optical Network
- Modulebus
- Hardwired FGS/SIS signal
- Hardwired PCS/EMCS signal

Rev.	Date	Reason for Issue	Made	Checked	Approved
0	21.11.23	Issued for Review (IFR)	FEJ	AB/LCA	OYFO/ MDO

PACKAGE NO.	
TAG NO.	All
PACKAGE TITLE	PAS System
SUPPL. DRAWING NO.	3AJG037791-000041
SUPP REV	B
DATE	
SIGN	
CONTRACTOR	ROSETTI MARINO
SUPPLIER	ABB
CONTR. NO	
PLANT	CROSSWIND PROJECT
DRAWING TITLE	Control System Architecture Detailed Drawings
SHEET DESCRIPTION	Onshore (OER/CCR)
SCALE	NA
SIZE	A3
AREA	
SYSTEM	
DRAWING NUMBER	123A90-DDL-IN-DD-40096
SH	01
REV	00

ACCEPTANCE CODE

- ☐ ACCEPTED (CODE 1)
- ☐ ACCEPTED WITH COMMENTS INCL (CODE 2)
- ☐ NOT ACCEPTED, REVISE AND RESUBMIT (CODE 3)
- ☐ ISSUED FOR INFORMATION (CODE 4)
- ☐ ALL INTERFACE INFORMATION IS ACCEPTED AND FROZEN (CODE 5)

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BLPH - PLATFORM

B-400 (ITER)

ICCP – Refer to sheet 1:E1
HV-SCADA – Ref sheet 1:E2
HMI-A - Refer to sheet 1:E2
HMI-B - Refer to sheet 1:E2
Service FW – Ref sh 1:E2

Level 2
Level 1
Level 0

Network cabinet

FOPP

HMI A
HMI B

RNRP Router
SERVICE FIREWALL
RNRP Router
RNRP Router

Safety Network A
Safety Network B
Control Network A
Control Network B

GPS NTP Receiver

TAG
Engineering Station
Operator Workplace
Control Builder

EMCS
L01
ITER

PCS
C01
ITER

FTC - CABINET
ITER

SIS
E01
ITER

FTC - CABINET
ITER

F&G
F01
ITER

-FGS Detectors
-FGS Announcers

Extinguishing System

IEC61850 Network A
IEC61850 Network B
Profinet IO Network
Modbus TCP Network
Note 2

Service Network

Hardwired I/O
Hardwired I/O
Hardwired I/O
Hardwired I/O

Intrusion Detection System

Hold 5
HVAC UCP

Hold 5
HVAC Containers
B-100
B-200
B-300

ICCP Package

Hold 4
Solar Farm

B-100
DC UPS System
UP-200E1

66kV GIS
HV SWBD
HNA6-AFA70

6.6kV AIS
MV SWBD
SG-100D1

Transformer
TR-100AD1

B-200
400V
LV SWBD
SG-200N1

400V
Feeder to solar Package
SG-200D2

B-300
400V UPS System
UP-200E2
UP-200E3
UP-200E4

Hold 2, 5
Instrument Air UCP
A-63000
Note 3

Hold 2, 5
Water Treatment UCP
A-50000
Note 3

Hold 2, 5
Nitrogen UCP
U-64000
Note 3

Electrolyser Package
A-20001
A-20002
A-20003
Note 1,3

BESS Package
A-85001
A-85002
A-85003
Note 1,3

Fuel Cell Package
A-80001
A-80002
A-80003
Note 1,3

FIELD EQUIPMENT AREA

Instrument Air
Water Treatment
Nitrogen

FGS Hardwired I/O
SIS Hardwired I/O
PCS Hardwired I/O

Field instruments and valves
-Hydrogen storage
-Sea Water
-Waste Water
-De-Mineralised Water
-Misc. Devices outside of UCP

Intrusion Detection System

SIS Field Devices
-SIS Pushbuttons
-Shutdown valves

FGS Field Devices
-FGS Detectors
-FGS Announcers

NOTES
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CONTRACTOR	ROSETTI MARINO
SUPPLIER	ABB

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CROSSWIND
HOLLANDSE KUST NOORD SITE V

CONTR. NO

PLANT: CROSSWIND PROJECT

DRAWING TITLE: Control System Architecture Detailed Drawings

SHEET DESCRIPTION: BLPH

SCALE	SIZE	AREA	SYSTEM	DRAWING NUMBER	SH	REV
NA	A3			123A90-DDL-IN-DD-40096	02	00