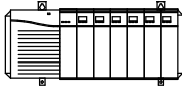
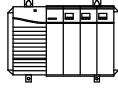
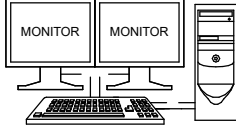
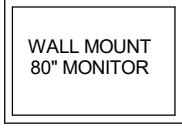
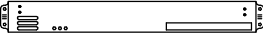

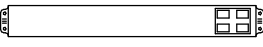
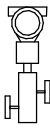

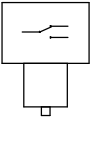
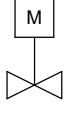
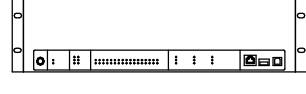
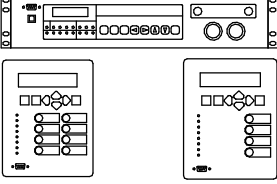
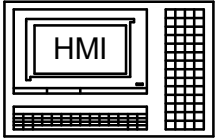


1		2		3	4	5
ABBREVIATIONS		SYMBOLS				
D	AS	AIR SEPARATOR				
	BAS	BUILDING AUTOMATION SYSTEM		PROCESS AUTOMATION CONTROLLER (PAC)		
	BFP	BOILER FEED PUMP				
	BLR	BOILER		REMOTE I/O PANEL OR MACHINE CONTROLLER		
	BMS	BURNER MANAGEMENT SYSTEM				
	BOP	BALANCE OF PLANT				
	CEMS	CONTINUOUS EMISSIONS MONITORING SYSTEM		CLIENT PC OR OPERATOR INTERFACE		
	CHLR	CHILLER				
	CT	COOLING TOWER				
	CTG	COMBUSTION TURBINE GENERATOR		MONITOR		
C	CW	COOLING WATER				
	CWP	COOLING WATER PUMP		SERVER		
	DA	DEAERATOR				
	DG	DESIEL GENERATOR				
	ENGY	ENERGY		NETWORKING SWITCH		
	FOP	FUEL OIL PUMP				
	GCS	GRID CONTROL SYSTEM		FIREWALL		
	HMI	HUMAN MACHINE INTERFACE				
	HRSG	HEAT RECOVERY STEAM GENERATOR		TRANSMITTER		
	HVAC	HEATING, VENTILATION AND AIR CONDITIONING				
B	IAC	INSTRUMENT AIR COMPRESSOR		RTD/THERMOCOUPLE		
	ISP	INTERNET SERVICE PROVIDER				
	MW	MEGA-WATT				
	NG	NATURAL GAS				
	NH3	AMMONIA		PROCESS SWITCH		
	PAC	PROCESS AUTOMATION CONTROLLER				
	PC	PERSONAL COMPUTER		CONTROL VALVE		
	PCHWP	PRIMARY CHILLED WATER PUMP				
	PCS	PLANT CONTROL SYSTEM		REAL-TIME AUTOMATION CONTROLLER		
	PLC	PROGRAMMABLE LOGIC CONTROLLER				
A	RECIP	RECIPROCATING ENGINE GENERATOR				
	RO	REVERSE OSMOSIS		ELECTRICAL PROTECTION RELAYS		
	RTAC	REAL-TIME AUTOMATION CONTROLLER				
	SCADA	SUPERVISORY CONTROL AND DATA AQUSITION				
	SCHWP	SECONDARY CHILLED WATER PUMP		HUMAN MACHINE INTERFACE (PANEL-MOUNT)		
	STG	STORAGE				
	TES	THERMAL ENERGY STORAGE				

Jacobs

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Guaynabo, PR 00968

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UNDER SUPERVISION OF,

MIKE LEWIS
NAME: 05/04/2022
REGISTRATION # DATE

REV	DESCRIPTION	DATE



AUTORIDAD
de los
PUERTOS
de PUERTO RICO

SAN JUAN COGENERATION
PROJECT

Key Plan:

Scales:

Jacobs Project No.: WFX09700

Drawing Title:

I&C
ABBREVIATIONS, NOTES &
SYMBOLS

Date: 05/04/2022

Designed: JRH
Drawn: DAC
Checked: JRH

Drawing No.:
IC001

ISSUED FOR 30% CONSTRUCTION DOCUMENTS

INTERCONNECTIONS

- A. REFER TO DWG IC001 FOR GENERAL NOTES AND LEGEND.
- B. DIAGRAM IS A FUNCTIONAL REPRESENTATION OF SYSTEM ARCHITECTURE. FINAL CONFIGURATION DEPENDENT UPON ACTUAL SYSTEM EQUIPMENT SELECTED.
- C. FUNCTIONS MAY BE COMBINED WITH OTHERS ONLY IF SYSTEM REDUNDANCY & SECURITY FEATURES ARE MAINTAINED.
- D. REFER TO SPECIFICATIONS FOR DETAILED DESCRIPTION OF THE PLANT CONTROL SYSTEM, MATERIALS AND METHODS FOR CONSTRUCTION.
- E. ACTIVE SECURITY/ AUTHENTICATION, NETWORK SECURITY MANAGER, AND DOMAIN CONTROLLER ARE WITHIN UFS ENTERPRISE SYSTEM.
- F. HARDWIRED SIGNALS FOR CONTROLS ARE NOT SHOWN FOR CLARITY.

KEYNOTES

101. RECIPROCATING ENGINE SIGNALS ARE CONNECTED TO ONE SWITCH FOR DIAGRAM SIMPLICITY BUT WOULD BE DISTRIBUTED ACROSS MULTIPLE SWITCHES FOR REDUNDANCY IN FINAL DESIGN.

LEVEL 4-5 - ENTERPRISE

AIRPORT LEVEL APPLICATIONS AND ACCESS TO THE INTERNET.

DEMILITARIZED ZONE (DMZ)

FIREWALLS FOR SEGMENTATION, INTER-ZONE TRAFFIC CONTROL, DATA SHARING VIA REPLICATION / TERMINAL SERVICES.

LEVEL 2/3 - OPERATIONAL/SUPERVISORY CONTROL

NETWORK AND SECURITY MANAGEMENT (AUTHENTICATION, USER ACCESS), SYSTEM APPLICATIONS, CONTROL ROOM WORKSTATIONS.

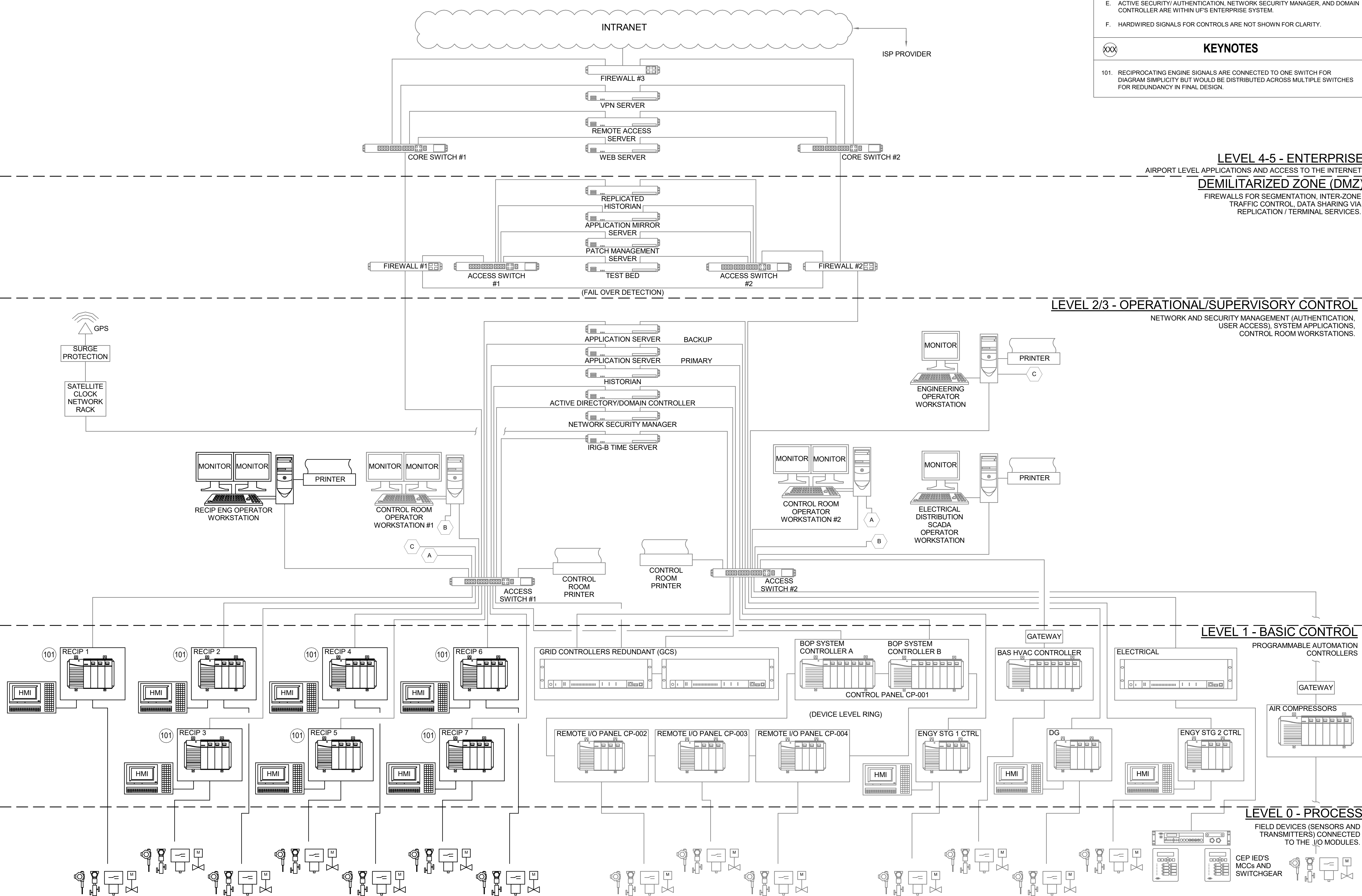
LEVEL 1 - BASIC CONTROL

PROGRAMMABLE AUTOMATION CONTROLLERS

AIR COMPRESSORS

LEVEL 0 - PROCESS

FIELD DEVICES (SENSORS AND TRANSMITTERS) CONNECTED TO THE I/O MODULES.



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NAME: MIKE LEWIS
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DATE

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SAN JUAN COGENERATION
PROJECT

Key Plan:

Scales:

Jacobs Project No.: WFX09700

Drawing Title:

I&C
CEP NETWORK OVERVIEW
DIAGRAM

Date: 05/04/2022

Designed: JRH

Drawn: DAC

Checked: JRH

Drawing No.:

IC050