Control Panel Scope of Supply
McCORMICK LS#1
PORT ORCHARD, WA
5/16/18

General information
- ELECTRICAL SERVICE - 480V, 3 Phase
- PUMPS - (3) 125HP, 460V, 3 PH, 154FLA, TRIPLEX configuration
- PUMPS - VAUGHN 4P SERIES

Liquid level sensing
- PRIMARY LEVEL SENSING - FMX21 PRESSURE TRANSDUCER
- BACKUP LEVEL SENSING - SIEMANS XPS-15
-TERTIARY BACKUP CONTROL - 10PT. CONDUCTIVE PROBE
- FLOOD DRY PIT - SINGLE SENSOR PROBE

Station Control Panel

Qty.	Description
1	NEMA 12 Painted Steel, 30"W X 90"H X 20"D MCC section.
1	18" X 12" folding shelf
1	TVSS advanced surge suppression
1	CompactLogix Processor L36ERM
4	Allen-Bradley Compact I/O Digital Input, 16pt. P/N 1769-IQ16
2	Allen-Bradley Compact I/O Analog Input, 4Ch P/N 1769-IF4I
1	Allen-Bradley Compact I/O Analog Output, 4Ch P/N 1769-OF4
2	Allen-Bradley Compact I/O Digital Outpit, 16pt. P/N 1769-OB16
1	Allen-BradleyCompact 24V Power Supply P/N 1769-PB4
1	Allen-Bradley 7" Operator Touch Screen #2711R-T7T
1	Allen-Bradley 1609P3000N UPS
1	Allen-Bradley Port Ethernet Switch P/N 1783-BMS12T4E2CGL
2	Allen-Bradley DC Power Supply P/N 1606-XLB240E
1	Allen-Bradley DC Power Supply Redundancy Module P/N1606XLSRED
1	Bulkhead Ethernet port
1	Siemens HydroRanger -200
2	Modem Telenetics IG96HFP-LV. (1-Spare) (Phone line by others)
1	DF1 to Ethernet/IP Router Prosoft #PLX51-DF1-ENI
3	HOA selector switches for manual pump control (1 per pump)
3	Elapsed time meters, one per pump
3	Pump cycle counters
2	MTRA5 relays, 24VDC coils
	- MTR = Pumps Stop/High Level
	- MTR = Pumps Start/Alarm
1	E&H Promag Flow Transmitter
1	Branch circuit breakers mounted on the dead front to control the following functions:
	1. Convenience outlet 5A
1	Alarm beacon red flashing light
1	Audible Horn with push to silence button Silence button mounted on panel exterior..
3	Thermal/Seal Fail detection for Vaughn Pumps.
3	"Run" pilot light, green, push to test, located on dead front
3	"Pump Fault" pilot light, red, push to reset, located on dead front.
1	"High Level" pilot light, red, push to test, located on dead front
1	"Redundant Hi Level" pilot light, red, push to test, located on dead front
1	Remote switch (ON/OFF/REMOTE) for fans located at manway access
1	Blower On/Off Selctor Switch mounted on dead front with Pilot Light
1	2-Postion selector switch for "Intruison Enable".
1	"GO - NO GO" pilot indicating light station for gas detection.
1	"Operator In Trouble" push-button mounted in dry pit.
1	"Control Power Okay" pilot light, white, push to test, located on dead front
1	Intrinsically Safe Barrier for primary level sensing
1	5 Ch. Barrier for teritiary level sensing
2	Intrinsically Safe Barriers for pump service hatch intrusion switches
1	Intrinsically Safe Barriers for pressure transmitter
1	Panel interior LED light with door switch
1	"Dry pit flooded" PTT light
1	Control panel thermostat #KTD-267
1	Signal converter #XNPNPNP
1	Warning arc flash and shock hazard label Emedco #QS3743 or equivalent.
1	Electric Shock Hazard. Main disconnect switch does not remove UPS output power. Turn off UPS before servicing. or equivalent
*	All pilot light indicators to be LED
	Prefabricated wiring whips between the control panel and MCC devices.

Digital Inputs - Slot 1

DI0	Phase Failure
DI1	Intrusion Enable
DI2	Generator Running
DI3	Generator Warning
DI4	Generator Fault
DI5	Generator Low Fuel
DI6	Generator Fuel Leak
DI7	ATS in Emergency
DI8	Meter Vault Intrusion
DI9	Valve Vault Intrusion
DI10	Panel Intrusion
DI11	Wet Well Intrusion
DI12	Dry Pit Intrusion
DI13	Pumps Running from back up controller (HydroRanger)
DI14	High Level Alarm from back up controller (HydroRanger)
DI15	Back up controller failed (HydroRanger)

Digital Inputs - Slot 2

DI0	Pump 1 Running
DI1	Pump 1 Fault
DI2	Pump 1 Reset
DI3	Pump 1 in Auto
DI4	Pump 1 in Hand
DI5	Pump 1 Overtemp
DI6	Pump 1 Leak Seal
DI7	Pump 1 Check Valve
DI8	Pump 2 Running
DI9	Pump 2 Fault
DI10	Pump 2 Reset
DI11	Pump 2 in Auto
DI12	Pump 2 in Hand
DI13	Pump 2 Overtemp
DI14	Pump 2 Leak Seal
DI15	Pump 2 Check Valve

Digital Inputs - Slot 3

DI0	Pump 3 Running
DI1	Pump 3 Fault
DI2	Pump 3 Reset
DI3	Pump 3 in Auto
DI4	Pump 3 in Hand
DI5	Pump 3 Overtemp
DI6	Pump 3 Leak Seal
DI7	Pump 3 Check Valve
DI8	Emergency Stop
DI9	Dry Pit Flood Switch
DI10	Dry Pit Smoke Alarm
DI11	Building Smoke Alarm
DI12	Gas Detector "OK"
DI13	Gas Detector "Fault"
DI14	Fans Auto
DI15	Fans On

Digital Inputs - Slot 4

DI0	Fans Remote
DI1	Fans On
DI2	UPS Alarm
DI3	DC Power Supply "PS1" OK
DI4	DC Power Supply "PS2" OK
DI5	Control Power OK
DI6	Redundant High/High Alarm
DI7	Pumps Running on Tertiary Back-up System
DI8	
DI9	
DI10	
DI11	
DI12	
DI13	
DI14	
DI15	

Digital Outputs - Slot 5

DO0	Pump 1 Call
DO1	Pump 2 Call
DO2	Pump 3 Call
DO3	Pump 1 Fault
DO4	Pump 2 Fault
DO5	Pump 3 Fault
DO6	Pump 1 Reset
DO7	Pump 2 Reset
DO8	Pump 3 Reset
DO9	Alarm Light
DO10	Alarm Horn
DO11	Gas Detection Fault Light
DO12	Gas Detection OK Light
DO13	Exhaust Fan Run
DO14	Spare
DO15	Spare

Digital Outputs - Slot 6

DO0	Spare Relay
DO1	Spare Relay
DO2	
DO3	
DO4	
DO5	
DO6	
DO7	
DO8	
DO9	
DO10	
DO11	
DO12	
DO13	
DO14	
DO15	

Analog Output - Slot 7

AO0	Pump 1 Speed Reference (4-20mA)
AO1	Pump 2 Speed Reference (4-20mA)
AO2	Pump 2 Speed Reference (4-20mA)
AO3	Spare

Analog Input - Slot 8

AI0	Pressure Transducer (4-20mA)
AI1	Hydroranger (4-20mA)
AI2	Force Main Pressure Transmitter 94-20mA)
AI3	Flow Meter (4-20mA)

Analog Input - Slot 9

AI0	Control Panel Temperature (4-20mA)

AI1 Dry Pit Temperature (4-20mA)
AI2 Generator Fuel Level (4-20mA)
AI3 Spare

HMI TERMINAL

Level setpoints
Level control
Alarms
Pump status
Pump control
Ehaust fan status
Event alarm log with date and time stamp
Elapsed time meters
Set-up