

99753 Appendix A - Technical Specifications  
Julington Creek Plantation Control Process Rehabilitation

Scope of work

The contractor shall procure all equipment and materials for the conversion from SLC to CompactLogix.

Provide on each panel a corrosion Protection capsule AHCI10E as follows:

- a. ABJ panel QTY 2
  - b. Compliance QTY 2
  - c. Clarifier #1 QTY 1
  - d. Clarifier #2 QTY 1
  - e. AIR PLC QTY 2
  - f. Filter PLC QTY4
- The contractor shall develop new electrical prints and field terminations for each CompactLogix system to be installed (just only the PLC layout on the panel and signals card representation).
  - If the Contractor needs to hire a subcontractor to do this job, the subcontractor must have a minimum of 2 recent years of preview experience with JEA on PLC/HMI implementation.
  - The contractor shall be responsible for any expansion or replacement of short distance of current control wiring as needed to reach the new cards for new PLC's. Any modification on the panel shall be done by the contractor.
  - The contractor shall convert each PLC Program (Reverse Engineering) from RSLogix 500 to RSLogix 5000 with documentation and definition shall be included on the code inside of each SD of the PLC and delivered by Email to [gonzf@jea.com](mailto:gonzf@jea.com) and [luko@jea.com](mailto:luko@jea.com) .
  - The contractor shall re-address local I/O of the SLC to the new 1769 CompactLogix I/O.
  - The contractor shall re-configure the whole Device-Net Network (master and slave device) to communicate and control the whole operation with the new CompactLogix (Air PLC area).
  - The contractor shall re-configure any Peer-to-Peer messaging between all Compact Logic PLC's.
  - The contractor shall remove all SLC hardware and install a new CompactLogix in the existing panel housing the SLC 500 systems. The SLC PLC hardware shall be left on the JCP WRF plant inside of hard plastic box containers (2 or 3 as needed) supplied by the contractor.
  - The contractor shall execute the development of SCADA IFix (5.0) for the new CompactLogix plc system based on current HMI screens that are in use at JCP WRF. If there is any error between

PLC and HMI code shall be corrected as part of change on PLC. The SCADA Ifix shall talk CIP protocol or Ethernet/IP between PLC and SCADA. Siemens Data will stay as is.

- The contractor shall execute I/O Testing on-site and startup on-site for each new CompactLogix System and HMI Ifix application shall be updated every time of a new hardware “Swap” is executed.
- The contractor shall provide 40hr in a 1-year period for on-site technical support after startup for each new CompactLogix System.
- The contractor shall create and deliver an Excel spreadsheet for each PLC SLC tags/memory map with the current Ifix Application to make a new “match” with CompactLogix tags for the new SCADA IFix application based on current HMI screens that are in use at JCP WRF. The Excel table shall be, but not limited to, the following heading Items:
  - a. SLC 5/05 PLC memory.
  - b. OLD Ifix Memory.
  - c. Compact Logix Memory.
  - d. New Ifix Memory.
  - e. Any other value as necessary for the PLC data process.
- The contractor shall coordinate with the operation for each system conversion from PLC SLC 500 to CompactLogix will be done once per week (6 PLC/systems in total) to minimize disruption to the facility. Full plant operations shall remain intact through the duration of the project. Temporary interruptions in normal plant operations can be scheduled in advance with JEA operations personnel. Temporary changes in normal plant operating procedures can be scheduled in advance with JEA operations and controls personnel.
- The project shall be finished in **4 months after JEA Release the PO.**
  - a. Schedule suggestions are as soon JEA Issue the PO:
    - i. Any coordination or action that impact to the plant, shall be communicated to JEA Operators ([parkjd2@jea.com](mailto:parkjd2@jea.com) and [ethrpa@jea.com](mailto:ethrpa@jea.com) ) and PM ([gonzf@jea.com](mailto:gonzf@jea.com)) all time.
    - ii. JEA will provide a copy of PLC and Application of Ifix for fast development.
    - iii. Submittal delivery (Digital to [gonzf@jea.com](mailto:gonzf@jea.com) ) to JEA shall be done in 14 calendar days after JEA Issue the PO and JEA will have 7 calendar days for approval back to the contractor for the procurement part.
    - iv. Drawings of the panel (old and not Accurate) will be delivered by email (3 or 4)
    - v. iFix excel sheet, plc code, and iFix development shall start after JEA issue PO, JEA delivers the current software (PLC/HMI) and Submittal approval from JEA.
    - vi. Try to develop most of the conversion in 4 weeks.
    - vii. Schedule the shutdown time (1 week per PLC but could be modified as convince to the contractor)

- viii. PLC Work Easy to execute (easier to hard)
  1. Clarifier 1 and 2 (could be done 1 week)
  2. Filter PLC
  3. Air PLC
  4. ABJ PLC
  5. Compliance

- A PLC hardware baseline of cards and components shall be purchased by the contractor and used as a guide for the PLC conversion but, if any other PLC part is needed to complete and meet the application request by JEA, shall be provided by the contractor with JEA approval first (submittal evaluation).
- All PLC Hardware cards and materials shall be provided by the contractor to complete/meet the application request by JEA.
- The Contractor shall purchase the following list (without limitation to):

Item	Product	Description	QTY
		<b>ABJ Main</b>	
1	1769-ECR	Right End Cap/Terminator	1
2	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
3	1784-SD2	2 GB Secure Digital (SD) card	1
4	9324-RLD700NXEN E	ESD - Studio 5000 Professional Edition	1
5	9300-USBCBL-ABHR2	USB Programming Cable, with High Retention A and B style connectors, 2 Meters	1
6	9300-USBCBL-CP3	Serial cable with built-in USB adapter	1
7	1769-IA16	16 Point 120 VAC Input Module	5
8	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	5
9	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
		<b>Compliance Panel</b>	
10	1769-ECR	Right End Cap/Terminator	1
11	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
12	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	2
13	1769-IF4FXOF2F	High Resolution, High Speed 4 In/2 Out Analog Combination Module	1

14	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
15	1769-OF4CI	4 Channel Analog Current Isolated Output Module	1
16	1769-IA16	16 Point 120 VAC Input Module	3
17	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	2
		<b>Air PLC</b>	
18	1769-ECR	Right End Cap/Terminator	1
19	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
20	1769-SDN	DeviceNet Scanner	1
21	1769-IA16	16 Point 120 VAC Input Module	2
22	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
23	1769-OW16	16 Point VAC/VDC Relay Output Module	1
24	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	2
25	1769-OF4CI	4 Channel Analog Current Isolated Output Module	1
		<b>Filter PLC</b>	
26	1769-ECR	Right End Cap/Terminator	1
27	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
28	1769-IA16	16 Point 120 VAC Input Module	4
29	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
30	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	2
31	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	1
		<b>Clarifier #1</b>	
32	1769-ECR	Right End Cap/Terminator	1
33	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
34	1769-IA16	16 Point 120 VAC Input Module	2
35	1769-OW16	16 Point VAC/VDC Relay Output Module	1
36	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
		<b>Clarifier #2</b>	
37	1769-ECR	Right End Cap/Terminator	1
38	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
39	1769-IA16	16 Point 120 VAC Input Module	2
40	1769-OW16	16 Point VAC/VDC Relay Output Module	1
41	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1

		<b>ABJ Remote I/O</b>	
42	1769-AENTR	Ethernet/IP Adaptor	1
43	1769-IA16	16 Point 120 VAC Input Module	6
44	1769-OA16	16 Point 120/240 VAC Output Module	2
45	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
46	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	1
47	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	1
48	1769-ECR	Right End Cap/Terminator	1
		<b>Compliance Remote I/O</b>	
49	1769-AENTR	Ethernet/IP Adaptor	1
50	1769-IA16	16 Point 120 VAC Input Module	2
51	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	2
52	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
53	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	2
54	1769-OF4CI	4 Channel Analog Current Isolated Output Module	1
55	1769-ECR	Right End Cap/Terminator	1
		<b>Filter PLC Remote I/O</b>	
56	1769-AENTR	Ethernet/IP Adaptor	1
57	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	10
58	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
59	1769-ECR	Right End Cap/Terminator	1
		<b>Spare I/O</b>	
60	1769-AENTR	Ethernet/IP Adaptor	1
61	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module	2
62	1769-OF4CI	4 Channel Analog Current Isolated Output Module	1
63	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
64	1769-IA16	16 Point 120 VAC Input Module	3
65	1769-OA16	16 Point 120/240 VAC Output Module	1
66	1769-SDN	DeviceNet Scanner	1
67	1769-IF4FXOF2F	High Resolution, High Speed 4 In/2 Out Analog Combination Module	1
68	1769-OW8I	8 Point VAC/VDC Individually Isolated Relay Output Module	2
69	1769-ECR	Right End Cap/Terminator	1
		<b>Spare CPU</b>	
70	1769-L33ER	CompactLogix 5370 L3 Controllers, Dual Ethernet w/DLR capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes. Controllers are shipped with 1GB SD card and can support up to 2GB SD card.	1
71	1769-PA4	L3x & L3y CompactLogix Power Supplies 120/240 VAC Input 4A @ 5VDC, 2A @ 24VDC	1
72	1769-ECR	Right End Cap/Terminator	1

73	CP10.241-C1	PULS power supply 24Vdc. <i><b>This could swap for equivalent model</b></i>	7
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- If the contractor wants to use the 5069 Family CPU and I/O, is responsible to do the conversion and show up on the submittal.

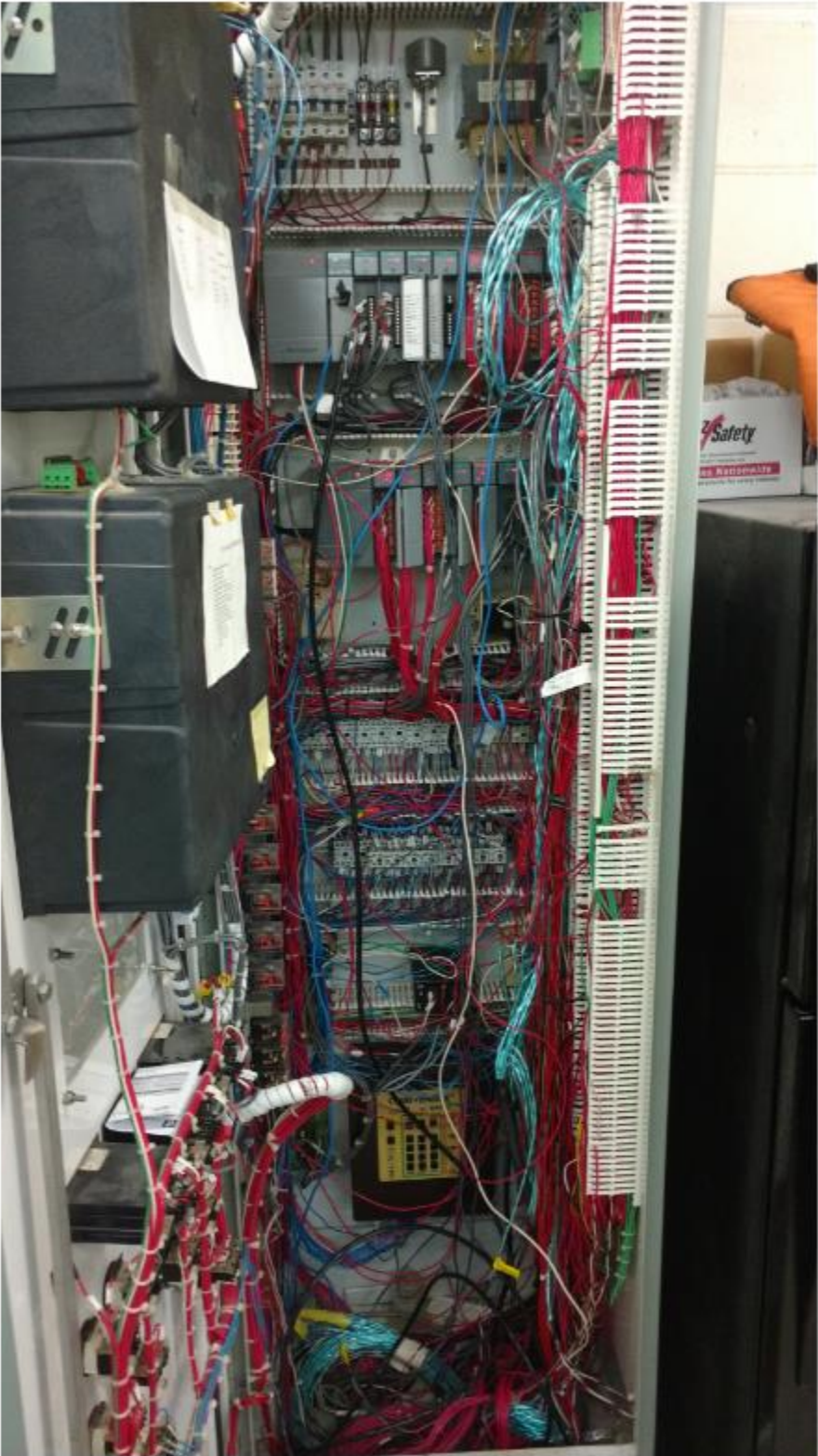
PLC Identification and panel identification on site

Air PLC



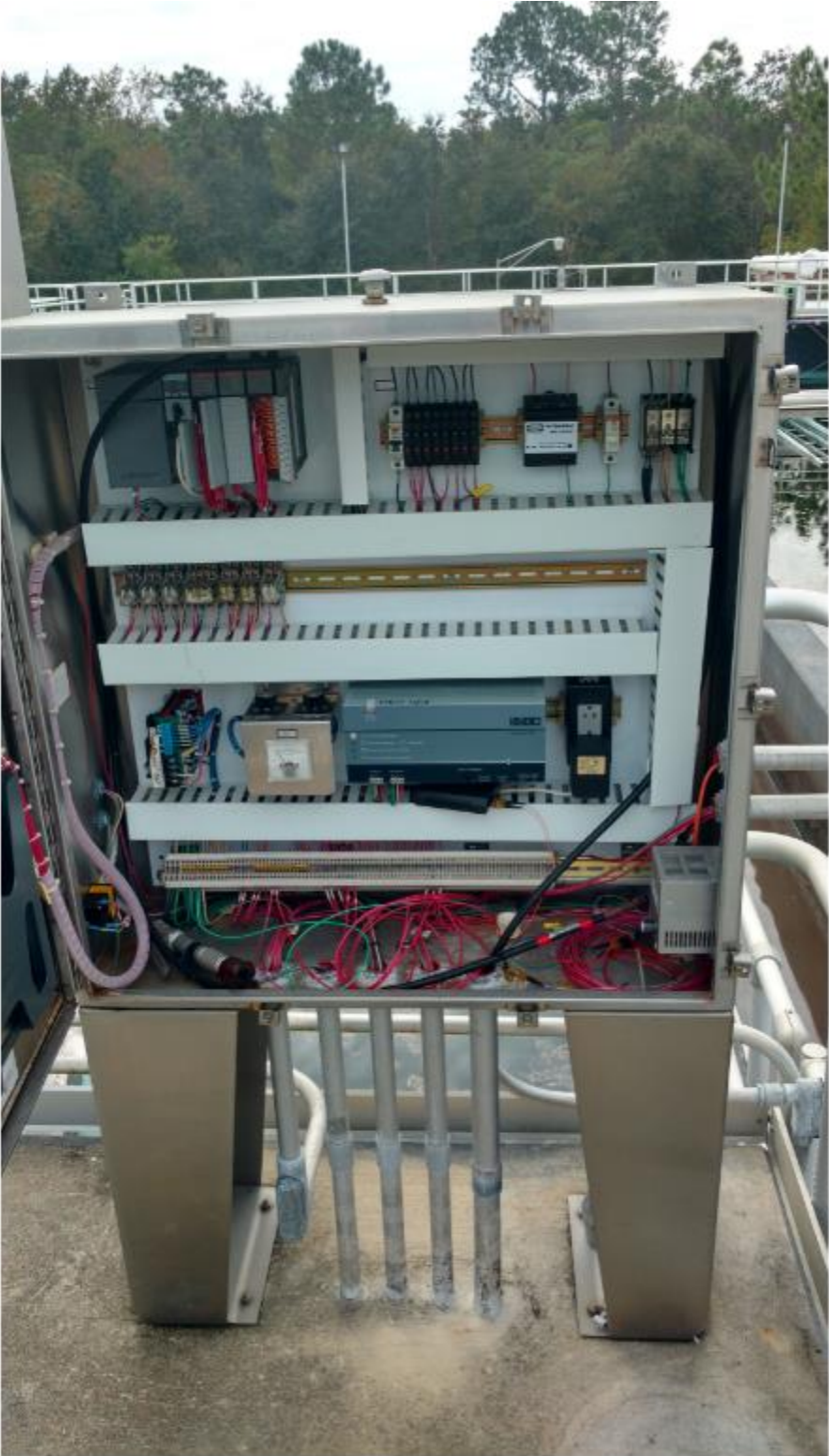


Compliance PLC

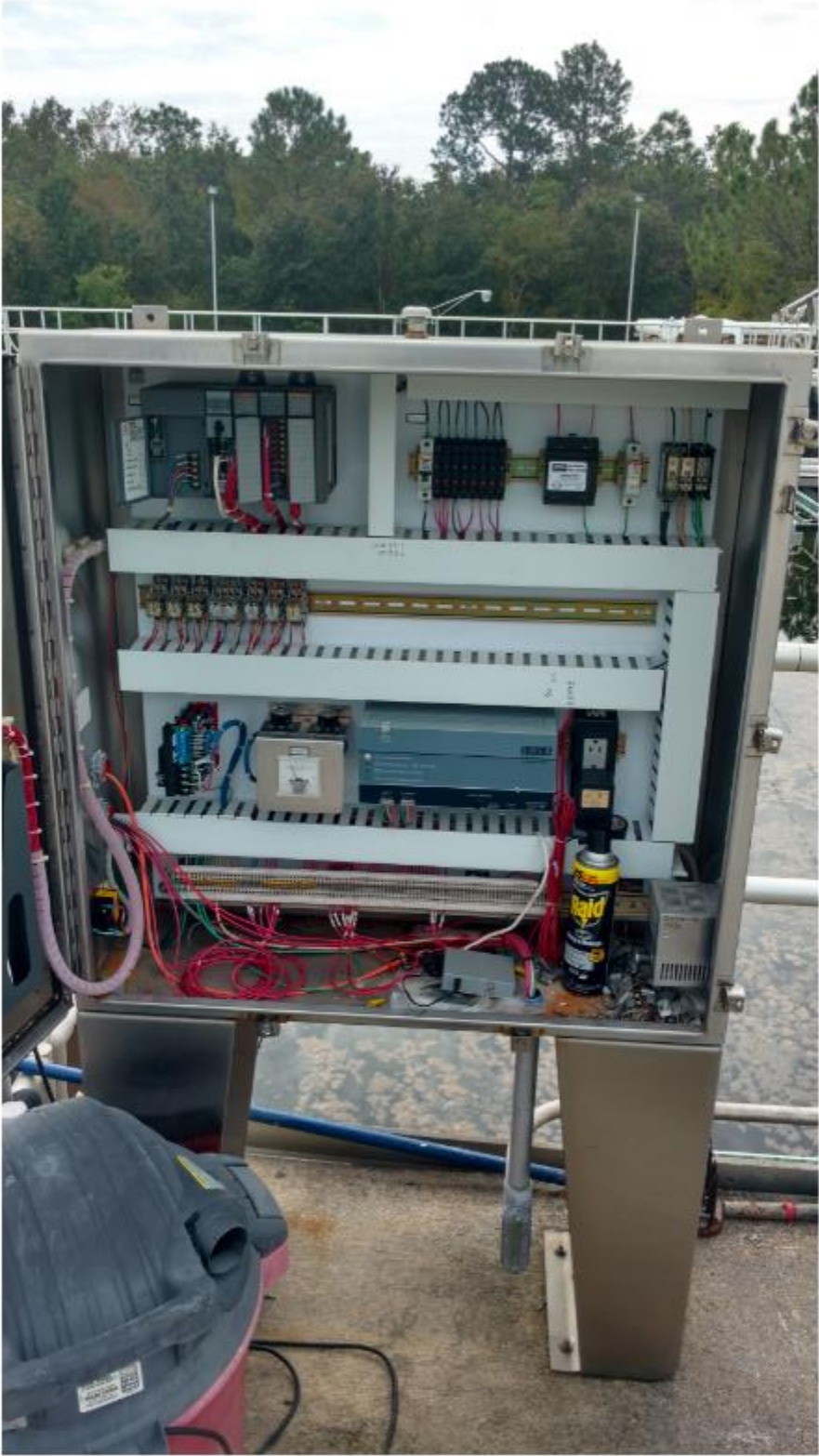




Clarifier #1



Clarifier #2



Filter PLC

