

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: September 26, 2019

TO: Adam J. Teitzman, Commission Clerk, Office of Commission Clerk

FROM: Luis Salvador, Engineering Specialist I, Division of Engineering *LS JS*

RE: Docket No. 20190031 – WU – Application for increase in water rates in Highlands County by Placid Lakes Utilities, Inc.

Please file the attached email communications between staff and Martin S. Friedman, in the above mentioned docket file.

Thank you.

LS/jp

Attachment

Luis Salvador

From: Martin S. Friedman <MFriedman@deanmead.com>
Sent: Saturday, August 31, 2019 11:52 AM
To: Luis Salvador; Marissa Ramos
Cc: Larry King ; Marie McKinney; Laura Elowsky; Pam Brewer
Subject: FW: DFS Quote - Final Control System
Attachments: DFS Final Quote.pdf

Luis and Marissa;

There are some changes to the pro forma plant requested in this proceeding. The work identified in the attached proposal from Data Flow Systems will replace DFS's interim solution control system with a complete inner panel. DFS will manufacture a control panel / RTU, and provide automation programming. The price for this project totals \$41,730. However, there is the opportunity for a \$6,058 discount if currently operating TCU's are returned to DFS. Thus, the net price is \$35,672. This additional utility plant in service should be entered on Schedule A-3, Section C, and then flow into Schedule A-1, Column 3, as an additional adjustment to Line 1. Because PLU is using the PSC 75% rule (in lieu of actual costs retired), a negative adjustment should be made to A-3, Section C, to remove old automatic data flow system costs of -\$26,754. The net change to utility plant is \$8,918.

Also PLU will not be able to add variable flow pumps to the utility plant in service within the next two year time period. The net amount to be removed is \$21,366 (new costs of \$85,463 less old costs of \$64,097). These amounts are currently contained in Schedule A-3, Section C, Lines 11 & 12. This change would also flow into Schedule A-1, Column 3, Line 1.

Let me know if you have any questions. Regards, Marty



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Data Flow Systems

**QUOTE NO. 190830-1-RCH
WTP SCADA ADDITION
PLACID LAKES UTILITIES, INC.
REVISED AUGUST 30, 2019**

SUMMARY OF SCOPE

This proposal has been modified to incorporate the changes and requests of the customer during the interim solution. All equipment and descriptions previously supplied have been removed for clarity of the new revised proposal.

DFS will provide a complete Inner panel to the Placid Lake to replace the Interim Solution control system. DFS will manufacture a Control Panel/RTU, and provide automation programming, to replace the control system currently located at this site. DFS will provide field services for systems installation, integration, startup and commissioning.

SEQUENCE OF INSTALLATION

- Submittal/Mobilization
- Construction and testing of the RTU, with automation programming, at our facility.
- Installation of RTU panel.
- Integration and Wiring services.
- Final Startup and Commissioning services.
- Close out and Final Documentation delivery.

Understanding of Installation - The understanding is the current control panel (CP) will remain in place and the DFS will install the new RTU back plate in existing RTU enclosure previously installed.

The existing CP is remaining and the current controller will be removed and surrendered to the Utility. The wiring to this controller will be terminated to blocks added into the CP by DFS for the new RTU to integrate with this panel. The existing field connections and surge suppression will remain in place as will the Probe Switch. The system being provided will be configured to use Pressure Transducers in place of the current Pressure Switches and the customer will supply and install said instrumentation.

DETAILS OF REQUIREMENTS

WTP RTU/Control Panel Detail

The RTU being supplied under this proposal will operate the I/O as outlined below. The control will be similar to the current system and integrated through the existing CP. The Wells, High Service Pump (HS or HSP) and Chemical Feed systems will operate in a manner similar to their current operation.

Well and HSP Operations

The Wells will alternate and fill the Ground Storage Tank (GST) using customer supplied and installed level transducer. One additional feature for alternation and tank filling is if well 2 or 3 is called as lead and runs for

more than an operator adjustable time well 1 will be called until the tank reaches the stop point. Then the standard alternation will resume.

The HSPs will alternate and provide water/pressure to the Hydrostatic Tanks. The HSPs will run from a customer supplied and installed pressure transducer using stop/start pressure set points in a lead, lag and lag2 basis. Alternating on a first in last out but generally the HSPs only run one at a time unless there is a major water usage.

RTU Chemical Feed Processes

The Chemical Feed processes at the WTP are being modified to accommodate operational requirements. A new system is being installed that will permit the injection of both the Sodium Hypochlorite (NaOCL) and a Polymer compound at the Point of Entry (POE) to the distribution system directly after the Hydrostatic Tanks; as well as the injection of Hydrogen Peroxide (H2O2) into Well Flow water to the Ground Storage Tanks at the location of the 'TEE'.

Chemical feed systems with TCU

The current system delivers the NaOCL and Polymer into the Final Distribution flow from the WTP based on Distribution flow signal. These pumps currently are powered on at all times. The PLC will be programmed with a Ratio Controller" that will permit the Utility to affect a linear change to the Chem Pumps feed rate based on the Distribution Flow Meter's signal.

The H2O2 pump feed is triggered anytime a Well is called to operate and will deliver product in the Pans area whenever a Well is called to operate.

The CL2 gas is injected in the cascade system when the well pump stops and runs for a preset time to flush the lines of CL2. The time delay relay controlling this is manually set and it turns on and off the solenoid that controls the water to the cascade.

Chemical feed systems with new PLC system

The NaOCL and Polymer will continue to run using the final distribution flow from the existing flow meter. Control of these pumps is being accounted for in the I/O for future control. They will continue for this upgrade to run all the time and be adjusted by the distribution flow. The PLC will be programmed with a Ratio Controller" that will permit the Utility to affect a linear change to the Chem Pumps feed rate based on the Distribution Flow Meter's signal.

When any of the well pumps are called the H2O2 will be called to inject at the fill TEE of the GSTs. This will be controlled from the PLC.

The CL2 gas solenoid will be control via the PLC and the time to run after the well shuts off will be set by the operator via the station screen.

Hydro Tank Air System

Currently this system starts a small compressor when the High-Level Probe indicates the water in Hydro Tank 1 is high. The system starts the compressor and adds air to the Hydro Tank 1 to increase the air pocket. The compress runs based on the High-Level probe, and a Compress Delay Stop Timer. When the Probe indicates the water has dropped below the probe the compressor continues to run until the Delay Stop Timer set point has expired.

The RTU being provided is equipped to provide similar operations via programming for the other two Hydro Tanks and Compressors as well. To take advantage of this feature would require the Utility to install the additional probes and the wiring to the other compressors. The programming will be provided for this Reserve (future) I/O in the RTU.

Air System Purge

The air purge and the pressure switches will be disconnected and surrendered to the utility. The Purge system will no longer be needed.

GENERAL SYSTEM OPERATIONAL ASPECTS

Each of the devices controlled will have software device controllers. The software device controllers have operator defined Min, Max, and Manual Control set points as well as a Current status in addition to the device controller basic and operational criteria. The Min and Max set points define in percent the range the devices are permitted to operate during the automatic process. The Manual Control set point defines the device operation when called to operate in manual. The Manual Control set point is overridden when the device is made available to the automatic process.

When the process variable transducer registers a reading to operate a device based on the defined Start operation set point, in excess of 30 seconds, the assigned device will be called to operate. The device will continue to operate until the defined Stop operation set point reading is obtained in excess of 30 seconds. When multiple devices are required to operate, each device will operate in a similar manner.

Device controllers with automatic algorithms will maintain the following basic and operational criteria. Each device will be monitored for Local/Remote (HOA in Auto equals "Remote") and Status if available. If a controlled device is not equipped with a HOA switch it will always be considered in Remote. If a controlled device is not equipped with a status it will always be considered as operating correctly. The controls for each device will include a Manual/Auto and a Stop/Start, Open/Close or other appropriate control. The digital input from the device's HOA determines its availability for control by the SCADA system, "Remote" being the permissive signal for SCADA control. A software Manual/Auto control dictates whether the device will be controlled manually or automatically via SCADA. The device is considered available to the automatic process when it is in "Remote" and "Auto" and the device has not failed. A device is considered "failed" when it has been called to operate by the automatic process and the device status inputs indication has not operated as expected in excess of 60 seconds. To clear a device, fail simply place the device back into "Manual" or "Local" until the fail has cleared.

Grouped device controllers with automatic algorithms will maintain the following additional criteria. When a device is available to the automatic process it will be assigned a lead, lag, lag2, etc., or standby position in the device alternator. Optionally device position in the alternator can be assigned manually. When a device is needed and called to operate by the automatic process the alternator will call the device assigned to the first, or lead, position. Should an additional device be required to operate, the device alternator will call the device assigned to the next position according. After the first, or lead device, has been called to stop by the automatic process the device alternator will index the devices assignments. Device alternation can also be triggered manually by activating the device Alt Index signal or disabled entirely by toggling the device Alt Enable/Disable" signal on the custom screen.

All set points residing in the PLC will have default factory set points when shipped. The set points can then be modified by an operator using a custom screen as needed. The new set points will be retained in the PLC in the event of a power cycle.

GRAPHICAL DISPLAYS

Custom graphical displays of telemetry/project data can take many forms. The graphical displays provided for under the proposal are P&ID type in nature. The screen/displays will show the basics of the process flow and instrumentation placement in this flow. They will also provide for control of the devices using a standardized set of control objects used by DFS. The control operators have color coded meaning and are used consistently across all DFS customer platforms. Other forms of graphical displays that more closely represent a pictorial

view, or physical presence of a customer site, are available and can be ordered in addition to the P&ID type screen displays provided for in this proposal.

ADDITIONAL DETAILS

The Utility/Contractor will be required to provide personnel to make the site available when work is scheduled. Any instrumentation installation is to be performed by the Utility/Contractor.

Please feel free to contact DFS with any questions concerning this project or changes in your telemetry system.

Bob Hughes
Systems Engineering
Data Flow Systems

BILL OF MATERIAL & SERVICES

3. WTP (RTU1101)

This site includes the following:

- RTU Panel
 - (1) Inner Panel, 48" x 36"
 - (2) Modular Back Planes (MBP001)
 - (1) Network Interface Module (NIM001)
 - (1) Power Supply Module (PSM003)
 - (1) Programmable Logic Controller (PLC800)
 - (1) PLC By-Pass Card (PBC001)
 - (4) Digital Control Module (DCM003)
 - (2) Analog Monitor Module (AMM002)
 - (1) Analog Control Module (ACM002)
 - (1) 7.0 Ah Battery (3) shelves
 - (21) 120V DPDT Octal Relay w/Base
 - (1) Meanwell 24VDC Power Supply
 - (1) Edco PHC-036 Surge Protector w/Base
 - (6) Edco PC642C-036 Surge Protector w Base
 - (4) API Loop Isolators
 - (1) RTU Surge Protection (TFS & SPS)

- Hardwired I/O List

DIGITAL INPUT (DI)	DIGITAL OUTPUT (DO)	ANALOG INPUT (AI)	ANALOG OUTPUT (AO)
(9) PRESSURE SWITCHES	(3) WELL PMP CMD	(1) DISTRIBUTION FLOW	(1) CL2
(3) WELL HOA	(4) HSP CMD (1 FUTURE)	(3) WELL FLOW	(1) POLY
(3) WELL STATUS	COMPRESSOR RUN	(4) WIRED SPARE	(1) HYDR PEROX
(4) HSP HOA (1 FUTURE)	WELL PMP CHEM (CL2)		(1) WIRED SPARE
(4) HSP STATUS (1 FUTURE)	WELL PMP CHEM (POLY)		
HYDRO TANK PROBE	PAN CHEM CL2		
(2) TANK PROBES (FUTURE)	HSP CHEM (NOT USED)		
GEN STATUS (IF AVAIL)	AIR FLUSH		
ATS STATUS (IF AVAIL)	(3) TANK AIR SOL (FUTURE)		
CL2 LEAK (IF AVAIL)	(4) WIRED SPARE		
CL2 FEED SWITCH			
(16) WIRED SPARE			

- Onsite Services

This site includes up to the following trips and on-site services:

Survey

Delivery/Install/pre-wiring

Final Wiring/Start-up

Commissioning/Punch List /Training

4. SPARE PARTS

- (1) Analog Monitor Module (AMM002)
- (1) Analog Control Module (ACM002)
- (1) Digital Control Module (DCM003)
- (1) Power Supply Module (PSM003)
- (1) Programmable Logic Controller (PLC800)
- (1) Network Fiber Module (NFM001)

5. INSTRUMENTATION – NONE

HARDWIRED I/O REQUIREMENTS

- a) All digital inputs to the DFS RTU will be of a dry contact type, terminal connections to be provided by the MCC manufacture/contractor/customer.
- b) Mixing of multiple sources of power will not be permitted.
- c) All digital outputs from DFS RTU will be dry contacts and provide for 120VAC at 10amp capacity.
- d) All analog inputs signals will be 4-20mA, or 0-5VDC, and use Shielded Cable.
- e) 4-20 mA signals at minimum to provide 500 ohm impedance drive.
- f) All pulse input to be dry contact, and mechanically operated.
- g) The field terminal blocks in the DFS RTU provide for stranded wire with a maximum size of 12AWG.

DFS SCOPE OF WORK

DFS will assemble and test the RTU and SCADA Server with any applicable programming in our facility. After testing is complete, DFS will deliver the RTU to the location designated by the customer. Any conduit provided by DFS will be PVC rigid and/or flexible, unless otherwise noted. DFS will complete all configurations and provide on-site start-up services.

DFS will provide on-site operator training.

WORK TO BE PERFORMED BY THE UTILITY

1. Ensure 120 VAC power is near the location of the DFS RTU for connection to power.
2. If the Well Flow are to be on Telemetry, the Utility will be required to replace the Flow Meter displays in the office with a type that can produce a 4-20mA signal to be monitored.
3. Supply and install 4-20mA level transmitter for GST level.
4. Supply and install 4-20mA pressure transmitter for distribution pressure, 0-160 PSI).
5. Supply and install 2 float in GST for High and Low level lockouts.
6. Make site available when work is scheduled.
7. Make personnel available to operate system as needed when work is scheduled.

▪ **LEAD TIME:**

Submittal: 60 days, after acceptance of order and any required documentation.
Equipment: 150 days, after receipt of approved submittal.

▪ **PRICING & TERMS:**

This quotation totals \$41,730.00 Please review the Quotation Notes listed below. DFS payment terms are NET 30 with approved credit. This proposal will be honored for 90 days. DFS will submit an invoice for each activity and payment schedule is as follows:

- 25% Mobilization (upon submittal approval)
- 55% Delivery of Product
- 15% Start Up
- 5% Completion of Punch List items

OPTIONAL DISCOUNT:

A \$6,058.00 Discount can be applied to the above price if the currently operating TCUs are returned to DFS.

▪ **QUOTATION NOTES:**

1. Only those items and services specifically listed above are included in this quotation.
2. Pricing is based on NET 30 Payment Terms with approved credit. Pricing can be adjusted upon request for payment terms other than NET 30.
3. Pricing includes all applicable taxes. If you are tax exempt, DFS can modify this quote upon request to remove taxes. A copy of your tax-exempt certificate will be required.
4. This quote includes 5 copies of the Submittal, and 5 copies of the O & M Manuals for each RTU. Additional copies are available at \$35.00 each.
5. Any conduit provided by DFS will be PVC rigid and/or flexible, unless otherwise noted.
6. All required panel mounting structures and related hardware are to be provided and installed by others.
7. Ensuring the site is ready when services are requested is the responsibility of the customer/contractor. Additional trips and site services beyond those listed above will be billed on a time and material basis via change order. If cause of the additional activity is responsibility of DFS, a change order will not be required.
8. This quotation identifies work that is the responsibility of others as defined above. It must be noted that if DFS personnel arrive at the job site as scheduled, and the "responsibility of others" work has not been completed, a Change Order will be required for the return trip.
9. DFS employees will not enter "Confined Spaces" and/or "Permit-Required Confined Spaces" as defined by OSHA. Any such requirement will be performed by others.
10. All electrical equipment to be accessed by DFS employees must be temporarily removed from service during the performance of our scope of work.
11. This quotation does not include any required permitting, sealed drawings, or associated fees.
12. This quotation stipulates that DFS existing insurance provider(s) and policy coverage are acceptable. In the event that you require a change to insurance provider(s), additional coverage, and/or amending the terms of our existing policies, we reserve the right to void and withdraw this quote and replace it with an amended quote which contemplates and provides for the recovery of the cost associated with analyzing and complying with different insurance requirements. Policy information can be found at

<http://www.dataflowsys.com/company/documents/insurance-coverage.pdf>

13. DFS prefers the adoption of our Agreement of Sale as the contract that will establish the terms under which DFS will participate in this project. REMOVE IF QUOTE TO END-USER