

1. Requested Motion:

Meeting Date: Dec. 16, 2013

Motion to waive provisions found in Ordinance 07-01 for sealed bids and to accept the quotation provided by BCI Technologies, in the amount of \$47,480, to replace both the Marina & North Booster Station Programmable Logic Controller (PLC).

Why the action is necessary:

As indicated in the Background section, the PLC's at Marina and North Booster Stations are no longer dependable and are not compatible with what the County is now using.

What the action accomplishes:

Approval will allow full compatibility with the system used by Lee County and will replace outdated PLC's at both locations.

2. Agenda:

- Consent
- Administrative
- Public Hearing

3. Requirement/Purpose:

- Resolution
- Ordinance
- Other

4. Submitter of Information:

- Council
- Town Staff - Public Works
- Town Attorney

5. Background:

The Town of Fort Myers Beach receives potable water from Lee County sources. A 500,000 gallon storage tank is located on Lagoon Street (North Booster Station) and a 1,000,000 gallon storage tank is located on Lenell Road (South Booster Station). During periods of high consumption, the operational strategy usually involves taking water from each tank in an alternating manner. Lee County's Green Meadows facility (our water source) relies on monitoring instrumentation that utilizes radio signals to transmit requests for water.

This instrumentation utilizes a PLC program that operates equipment based on an "if this condition exists, then this action should be taken" protocol. If the PLC is not operating correctly or contains outdated software, the system will have to be constantly monitored manually. At this time, Motorola supplies the radio system that transmits data within the Supervisory Control Acquisition and Data Acquisition (SCADA) system. In 2012, Lee County informed Beach Water and the Town of Fort Myers Beach that Motorola will be phasing out its existing radio transmission in the near future and that Lee County will be making changes its SCADA system and BCI has been selected as the sole provider for the County improvements.

The Town uses BCI for all repair and maintenance related to the PLCs. Recently, BCI completed an emergency PLC change-out at the Fort Myers Beach South Booster Station. The replacement of the Moss Marina PLC system is imperative because in January 2012 it failed completely and was rebuilt from a previously failed unit. It is also important to replace the North Booster Station system due to its age as well as to reflect a matching technology with the Lee County SCADA changes.

BCI currently provides the equipment, installation, programming, and technical service support for the Lee County water utilities; therefore, installing these same PLC's in the Marina and North Booster Station will ensure compatibility with Lee County's system. BCI has demonstrated product quality, service dependability, and strong customer support to Lee County and Town staff.

Attached for informational purposes is a memorandum and price quotations for the PLC installations at the Marina and North Booster Stations:

6. Alternative Action:

Do not waive Ordinance 07-01 provisions for purchasing and gather sealed bids for replacement of PLC's.
Do not purchase PLC's for Marina and North Booster Stations.

7. Management Recommendations:

Accept the quotation provided by BCI Technologies for replacing the PLC's.

8. Recommended Approval:

Town Manager	Town Attorney	Finance Director	Public Works Director	Community Development Director	Parks & Recreation Director	Town Clerk
						

9. Council Action:

Approved Denied Deferred Other

Memo

To: Cathie Lewis, Public Works Director
From: Scott A. Baker, Deputy Public Works Director
Date: 12/5/2013
Re: PLC Replacement Summary

Water System and Controls Overview

The Town of Fort Myers Beach receives potable water from Lee County sources. The water is pumped to two Beach Water storage tanks via two (2) 16" diameter lines under the Matanzas bridge channel. One of these lines feeds a small booster station located at Moss Marina. Pumps at this station are utilized to increase water pressure to the distribution system as necessary. The second 16" feed line from Lee County is tied directly into the Beach distribution system on Old San Carlos Blvd.

A 500,000 gallon storage tank is located on Lagoon St (north booster station) and a 1,000,000 gallon storage tank is located on Lenell Rd (south booster station). Both storage tank systems have service booster pumps. The largest volume of water is used during the day. During season, up to 1.7 million gallons can be consumed on average. During periods of high consumption, one or more of the tank service pumps are used to maintain adequate pressure throughout the system. The storage tanks must turn over (replace) their water volume every two or three days to prevent the chlorine residual levels from dropping below minimum regulatory standards. Basically, most Fort Myers Beach water flows directly from these storage tanks into the island's distribution system. The operational strategy usually involves taking water from each tank in an alternating manner. This means that while one tank is being drawn down, the other is filling. This alternating strategy assures that a sufficient water reserve is maintained at all times during daily high use periods. Both tank(s) are filled at night when water consumption is low. Maintaining the correct chlorine residual can be difficult during the off-season months due to low consumption rates. Pumping water from the tanks must be alternated carefully in order to maintain proper chlorine levels. Lee County's Green Meadows facility (our water source) relies on monitoring instrumentation that utilizes radio signals to transmit data to provide the correct alternating schedule.

The instrumentation utilizes Programmable Logic Controller program (P.L.C.) that operates equipment based on an "if this condition exists, then this action should be taken" protocol. For example, if a water tank level reaches a low point, the PLC will demand water. If the same tank's water level reaches a pre-set high level, the PLC will send a signal to discontinue tank filling. The Lee County Green Meadows Water treatment plant monitors all the facilities they provide water to, including Fort Myers Beach. The Beach Water system chlorine residuals, water tank levels, and system water pressures are monitored and interfaced with the Lee County water system. The entire PLC-radio telemetry-control system is referred to as (Supervisory Control Acquisition and Data Acquisition) SCADA.

Reliable and consistent functionality of this PLC/SCADA system is essential to proper monitoring of the water system at all times. If the PLC is not operating correctly or contains outdated software, the system will have to be constantly monitored manually. This is impractical, reduces reliability system and does not ensure an adequate supply of potable water on a 24/7 basis.

Need For Controls Upgrade

At this time, Motorola supplies the radio system that transmits data within the SCADA system. In 2012, Lee County informed Beach Water and the Town of Fort Myers Beach that Motorola will be phasing out its existing radio transmission system in the near future. Lee County is in the process of changing out all of its telemetry systems (several hundred) to an internet-based system.

Recently, BCI Technologies completed an emergency PLC change-out of the FMB South Booster Station due to a complete irreparable breakdown. The PLC at Moss Marina and the North Booster Stations are at least ten years old. The Moss Marina PLC has been repaired several times over the past year. In January 2012, the PLC failed completely. We were able to resurrect a partially failed unit that had been removed from service previously. The reliability of this unit is at best, questionable. Without a proper operating PLC, the pump station would have to be manned 24/7 to insure pressure stability on the island.

The replacement of the systems is imperative to continue to provide a reliable water supply to town customers.

Summary

Lee County uses Schneider Electric/BCI as a sole source provider for their SCADA systems. To continue to provide continuity and consistency between the County system communication compatibility and based on an assessment using various criteria of firm experience, location, as well as service support history, it is strongly recommended that the Town of Fort Myers Beach use BCI Technologies to upgrade the control systems for the Moss Marina and North Booster stations. Based on past performance history, BCI will ensure that the Beach system utilizes the identical communication platform;

Although, the equipment that Schneider Electric/BCI provides does not meet the provisions of Town Ordinance 07-01 for sole source purchases, utilizing BCI to complete the controls retrofit will ensure that all three Beach Water booster stations will be fully consistent and compatible as well as being fully compatible with Lee County's equipment. Also by providing the identical equipment at all Beach Water stations ensures savings in spare parts inventory requirements.

BCI currently provides the equipment, installation, programming, and technical service support for the Town. They also provide one hour emergency service support within their maintenance agreements. This type of timely response by a controls vendor is unprecedented in our experience.



Quotation #: 10601
 Revision #: 001
 Date: 1/10/2013

Controls & Integration

6540 Corporate Park Circle #3
 Fort Myers, FL. 33966
 Ph. 239.433.9600
 Fax. 239.433.2700

Corporate Office

316 N. John Young Parkway #4
 Kissimmee, FL. 34741
 Ph. 407.847.8848
 Fax. 407.847.8824

Quotation for: Woodard & Curran
 Phone: Fax:
 Email: kstarnes@woodardcurran.com
 Attention: Kelly Starnes

Validity: 60 Days
 Terms: Net 30 Days

Project Reference: Fort Myers Beach Booster Station PLC Replacement
 Scope of Work: Replace PLC at Marina Booster Station
 Addendums Reviewed:

Item	Qty	Description	Unit Price	Total Price
1	1	Marina Booster Station PLC Control Panel Replacement Duplex Pump Station Cellular RTU Panel NEMA 4X Stainless Steel Enclosure - 30x30x10, painted White 3-Point Lockable Handle SCADAPack 334E with 16-Discrete 24VDC Inputs, 10-Relay Outputs, and 8-Analog Inputs Sixnet Cellular Router with Antenna and surge suppression Incoming 120VAC Power Surge Suppression 100W / 24VDC Power Supply 24VDC UPS Interposing Relay on all outputs Field Interface Terminal Strip All I/O points wired out to field interface terminal strip RTU Program loaded into PLC and factory tested Cellular Modem will be programmed with the appropriate Lee County TCP/IP address Modify Lee County SCADA system at Green Meadows Install new control panel and terminate all control wires Functional test complete control system	\$23,500.00	\$23,500.00
2	1	Pre-paid cellular service (250MB/month) for 2 years (\$25/month) ** Sales Tax is not included. Customer must supply a current Florida Annual Resale Certificate for sale tax or Sales Tax will be added to the invoice	\$600.00	\$600.00
				\$0.00
Total				\$24,100.00

Thank You,
Dan Blocker
 I&C Divisional Manager



Quotation #: 10599
 Revision #: 001
 Date: 1/10/2013

Controls & Integration

6540 Corporate Park Circle #3
 Fort Myers, FL. 33966
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Corporate Office

316 N. John Young Parkway #4
 Kissimmee, FL. 34741
 Ph. 407.847.8848
 Fax. 407.847.8824

Quotation for: Woodard & Curran

Phone: Fax:

Email: kstarnes@woodardcurran.com

Attention: Kelly Starnes

Validity: 60 Days

Terms: Net 30 Days

Project Reference: Fort Myers Beach Booster Station PLC Replacement

Scope of Work: Replace PLC at North Booster Station

Addendums Reviewed:

Item	Qty	Description	Unit Price	Total Price
1	1	North Booster Station PLC Control Panel Replacement Triplex Pump Station Cellular RTU Panel NEMA 12 Steel Enclosure - 30x30x10, painted ANSI 61, 3-Point Lockable Handle SCADAPack 334E with 16-Discrete 24VDC Inputs, 10-Relay Outputs, and 8-Analog Inputs Sixnet Cellular Router with Antenna and surge suppression Operator Interface Touch Screen Incoming 120VAC Power Surge Suppression 100W / 24VDC Power Supply 24VDC UPS Interposing Relay on all outputs Field Interface Terminal Strip All I/O points wired out to field interface terminal strip RTU Program loaded into PLC and factory tested Cellular Modem will be programmed with the appropriate Lee County TCP/IP address Modify Lee County SCADA system at Green Meadows Install new control panel, pull new wires to MCC, pull new wires to pressure and level transmitters, mount new antenna	\$22,780.00	\$22,780.00
2	1	Pre-paid cellular service (250MB/month) for 2 years (\$25/month) ** Sales Tax is not included. Customer must supply a current Florida Annual Resale Certificate for sale tax or Sales Tax will be added to the invoice	\$600.00	\$600.00
Total				\$23,380.00

Thank You,

Dan Blocker

I&C Divisional Manager