



ST. CHARLES
SINCE 1834

AGENDA ITEM EXECUTIVE SUMMARY

Title: Accept Low Evaluated Bids for Automation System Software and Equipment

Presenter: Glynn Amburgey

Please check appropriate box:

<input checked="" type="checkbox"/>	Government Operations	X	Government Services 03.28.11
<input type="checkbox"/>	Planning & Development		City Council
<input type="checkbox"/>	Public Hearing		

Estimated Cost:	\$138,870	Budgeted:	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
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If NO, please explain how item will be funded:

Executive Summary:

Electric automation will improve system performance by automatically transferring load when 34.5kV service to the city is interrupted. This item provides the system software and the equipment for the pilot installations. The software is a one time purchase and will be used for the entire system. This software purchase includes support services to perform factory acceptance testing, training, and on-site field support. The equipment in this pilot includes an overhead recloser and a pad mounted multiple circuit switchgear.

The automation budget for FY 10/11 was \$190,000. To date \$148,600 has been spent on engineering and system design activities. A budget add of \$87,470 is required to process this equipment purchase. We will transfer this amount from the "Other Developments" budget (200-70-03208 ref 70468) which has unspent funds. Our budget estimate was low on the cost of the engineering, the pad mounted equipment and the software. If approved as proposed, our FY 11/12 budget will be reduced to cover this budget addition. The purchase of this equipment will allow the processing of the \$126,000 in approved grant funds from IMEA.

Attachments: (please list)

Sugar Hill Consulting Recommendation Letter, Forster Engineering Recommendation Letter, Software Bid Tabulation Sheet, Field Equipment Bid Tabulation Sheet, Budget Revision Form.

Recommendation / Suggested Action (briefly explain):

Approve Purchase Order to Cooper Power Systems for Yukon Feeder Automation (Software \$43,002) and a Nova Overhead Recloser (\$25,725) for a total of \$68,727. Approve Purchase Order to G&W for a Pad Mounted Automation Switchgear for \$70,143. Approve Budget Revision for an increase of \$87,470.

For office use only:

Agenda Item Number: 5.b

SHC Sugar Hill Consulting, LLC

487 Sugar Hill Road
Brooklyn, WI 53521
608-239-1343

January 12, 2011

Mr. Tom Bruhl
City of St. Charles
2 East Main Street
St. Charles, IL 60174-1984

Subject: Results and Recommendation Regarding Distribution Automation Software Selection

Dear Mr. Bruhl:

This letter summarizes the conclusions of the bid process involving selection of a Distribution Automation System for the City of St. Charles.

The supplier selection process was split into two bid packages, one for field equipment and one for software. This letter deals with the software bid package which was dated September 27, 2010 and entitled, Request for Bid for a Distribution Automation System.

In short, it was found that Cooper Power Systems submitted the Distribution Automation software solution that best fits City needs. This recommendation is based on many factors some of which include:

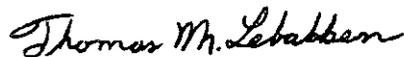
- Cooper Power Systems has the lowest pilot phase cost. Future costs comparisons are subject to a number of variables making a direct comparison difficult at this time. Total costs however appear to be roughly similar.
- While cost is a consideration, the biggest reasons for selection of Cooper Power Systems are technical. A few of these distinctions include:
 - The Cooper Yukon Feeder Automation System has a more developed and refined user interface.
 - The documentation for the user of the software / system is more extensive.
 - Cooper's solution includes a simulation capability to help evaluate the initial and future configurations of the distribution automation software. This can also be helpful with training of City staff.
 - Cooper has a more extensive bench testing capability already in place at its Milwaukee area Franksville facility.

- Selection of Cooper Power Systems is also based on the following process and results:
 - A Request for Information was prepared and sent out. Responses were used to assess market solutions and screen potential bidders.
 - Supplier reference calls were made.
 - A Request for Bid was then prepared and sent out to three suppliers. Two bids were received. One from Cooper Power Systems and the other from SEL.
 - City engineering staff and Tom Lebakken of Sugar Hill Consulting, LLC reviewed the bids and discussed their merits. Tom Lebakken and six staff from the City (both engineering and operations personnel) then met with each Bidder for a day. During this time the Bidder had the opportunity to demonstrate the solution they proposed and City/SHC Team was able to ask many questions related to capabilities of the solution.
 - Following these demonstration and question and answer sessions, City Staff and Tom Lebakken unanimously concluded that Cooper Power Systems was the best fit for City needs and objectives.

Contracting with Cooper Power Systems is contingent upon legal review by the City of what would be the contract. It is also is subject to review by the City/SHC Team of final Cooper clarifications question responses.

If there are questions on this letter, I can be reached at the number above.

Sincerely,



Thomas M. Lebakken, P.E.



550 N. Burr Oak Ave
Oregon, WI 53575
(608) 835-9009
(608) 835-9039 fax

"Excellence in electrical distribution design since 1981"

SENT BY EMAIL

January 13, 2011

Mr. Tom Bruhl
City of St. Charles
2 East Main Street
St. Charles, IL 60174-1984
tbruhl@stcharlesil.gov

**Subject: Distribution Automation Switchgear Purchase Recommendation
S31-10A**

Dear Mr. Bruhl:

We have reviewed and evaluated the bids you received for the purchase of switchgear required for your electrical distribution automation project. A tabulation of the bids is attached.

We corresponded with the apparent low bidder to verify their methods of compliance with our specifications. Attached are G&W's responses to our questions, which we used to verify they have complied with the specifications.

There are three bid groups. Bid Group A is a pole-mounted circuit recloser suitable for use as a midpoint switch in an overhead distribution automation scheme. We recommend you award this contract to Cooper Power Systems for \$25,725.22 based on lowest evaluated bid. In making this recommendation, we considered the savings in implementation of the distribution automation system. The circuit recloser is manufactured by the same company you are choosing to supply the software that runs the automation. This combination of hardware and software has a successful track record, which we feel will translate into savings during implementation and troubleshooting. This circuit recloser is identical to what Commonwealth Edison uses in this same application, and is similar to devices already used in St. Charles.

Bid Group B1 is a pad-mounted circuit recloser suitable for use as a midpoint switch in an underground distribution automation scheme. We recommend you award this contract to G&W Electric for \$27,854.00 based on lowest evaluated bid. G&W takes advantage of unique design features of their circuit recloser to offer a pad-mounted version that is fully compliant with our specification for a significantly lower cost than their competition.

Bid Group B2 is a custom pad-mounted switchgear suitable for use at a multiple way switching point in an underground distribution automation scheme. We recommend you award this contract to G&W Electric for \$70,143.00 based on lowest evaluated bid. G&W offers a much lower cost solution, which is lighter weight due to the SF6 insulation versus the synthetic oil insulation of the other bid, and is much closer to your existing switchgear size, making a direct change out with at an existing switchgear possible.

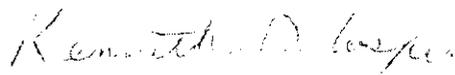
Both Bid Groups B1 and B2 include the specified stainless steel enclosures due to the proximity to roadways.

The intention to implement one overhead and one underground pilot project for distribution automation means you will need one Group A device and must choose between Group B1 and Group B2 for the other device to purchase at this time.

We recommend the Group B2 custom switchgear for the pilot project location. It provides the automation of switching in three directions with one device in place of an existing pad-mounted switchgear. You will get the existing switchgear back in stock for potential use elsewhere, there will only be one green box required where the public is already used to one, and the civil work at the site is minimized. In order to accomplish the same functionality using the Group B1 pad-mounted circuit recloser, you would need to install three of the devices in addition to the existing pad-mounted switchgear. The Group B1 device should be used in future applications where there is a single mid-point switch required in an underground circuit.

Sincerely,

FORSTER ELECTRICAL ENGINEERING, INC.



Kenneth Casper, P.E.

BWB/je

Copy: Tom Lebakken, Sugar Hill Consulting
Bruce Beth, Forster Electrical Engineering

Attachments: Tabulation of Bids
11-09-10 G&W Response
01-12-11 Notes from G&W Call

City of St. Charles, Illinois

12.47 kV Overhead Reclosers and Padmounted Reclosers or Padmounted Switchgear

Purchase Specification

Bids Opened October 14, 2010

Bidder Bid Group	Cooper Group A	G&W Group A	Cooper Group B1	G&W Group B1	Cooper Group B2	G&W Group B2
12.47 kV overhead recloser	\$25,725.22	\$22,243.00				
12.47 kV padmount recloser			\$49,735.00	\$27,854.00		
12.47 kV custom padmount switchgear					\$88,864.00	\$70,143.00
Insulation	solid	solid	solid	solid	synth. oil	SF6 gas
Allowance in above for factory programming						\$2,000.00
Deduct to automate 1 less switchgear bay					\$1,114.00	\$1,500.00
Deduct if stainless steel enclosure not req'd			\$9,085.00	\$1,219.00	\$4,468.00	\$2,900.00
Deduct for C module instead of Z module				\$652.00		
Deduct if factory assembly not req'd	\$1,500.00	\$232.00				
Discount with award of the entire order	5%		5%		5%	
Freight - FOB Purchaser's Site	Included	Included	Included	Included	Included	Included
Technical Service, Field Tests, and Training	\$1,600.00	Std Rate	\$1,600.00	Std Rate	\$1,600.00	Std Rate
Technical Service, if required per day	\$800.00	Std Rate	\$800.00	Std Rate	\$800.00	Std Rate
Technical Service, if required per trip	\$1,000.00	Std Rate	\$1,000.00	Std Rate	\$1,000.00	Std Rate
Schedule						
Approval drawings submitted						
One-line diagrams	week 4-6	week 4	week 4-6	week 6	week 4-6	week 6
Bill of material	week 4-6	week 4	week 4-6	week 6	week 4-6	week 6
Outline and elevations	week 4-6	week 4	week 4-6	week 6	week 4-6	week 6
Three-line diagrams	week 4-6	week 4	week 4-6	week 6	week 4-6	week 6
Control schematics	week 4-6	week 6	week 4-6	week 6	week 4-6	week 6
Control wiring	week 4-6	week 6	week 4-6	week 6	week 4-6	week 6
Start of fabrication	week 12	week 13	week 15	week 14	week 12	week 15
Start of assembly	week 14	week 15	week 17	week 16	week 12	week 17
Production testing	week 16	week 16	week 18	week 17	week 14	week 18
Witness testing (if required)	week 16	week 16	week 22	week 18	week 15	week 19
Shipment	week 17	week 17	week 24	week 19	week 15	week 20
Delivery	week 18	week 18	week 24	week 20	week 16	week 21



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November 9th, 2010

Forster Electical Engineering
Bruce Beth
550 N. Burr Oak Ave
Oregon, WI 53575

Subject – Response to questions and clarification in letter dated October 29th, 2010
regarding St. Charles Distribution Automation Equipment

Dear Mr. Beth:

Below are the responses to your questions regarding G&W's automated products.

Item A

1. You proposed a Viper ST instead of the Viper S. All switching is planned to be three phase. The City prefers a single hook stick action to isolate all three phases instead of three hookstick actions. Are there price or feature advantages for the Viper ST?

The Viper ST and the SEL651R relay are offered as a standard package. They offer the ability in the future to do single phase tripping should the City want to do it. The Viper ST / 651R package also removes all of the power circuitry from the recloser and includes it in the 651R cabinet for easy access. Also the VIPER ST has deadline operation and voltage sensing as standard features.

With that being said, G&W could also supply the VIPER S recloser with a SEL 651R control and the standard 14 pin control cable as a solution for this application at the quoted price. The VIPER S would come equipped with deadline operation and voltage sensing. The VIPER S solution would include the 4 PTs for voltage sensing and power, 6 lightning arresters and wildlife protectors, and the RuggedCom switch. There would be 4 cables going to the control, one would come from the PT junction box, with the voltage signals. Three could come from the control, one being the 14 pin control cable, a second cable for AC power and a 3rd cable for deadline operation.

2. You quoted a single 32-pin control cable from the junction box to the control box. The city prefers multiple control cables, one of which is the standard 14-pin control cable. That will allow them to use their KMET tester which uses the 14-pin connector. Can you provide this at the bid price?
A 14-pin control cannot be integrated with the Viper ST design. A 14-pin can only be provided with Viper S design.
As stated above, G&W can offer the VIPER-S solution using a SEL651R control and the standard 14 pin control cable. There would be other cables as noted.



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The 14-pin control part number would be the following:

Part Number:
0651R113BAX2111313

Key:
9403

Product:	SEL-651R-1	0	6	5	1	R	1	A											
Category	Selection	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
Firmware	Standard with Power Quality Monitoring, 8 Settings Groups, Template Storage and SEL Fast SER						1												
Control Cable Interface	Traditional Retrofit							1											
Enclosure ⁽²⁾	Single Door (Rear Mount), Painted Steel								3										
Secondary Input Voltage	(3) 8 Vac LEA Inputs ⁽³⁾ and (3) 300 Vac Max Inputs									B									
Secondary Input Current	1 Amp Phase, 0.2 Amp Neutral										A								
Extra Inputs/Outputs	None											X							
Communications Port	4 EIA-232 (Pin 1 = NC)												2						
Communications Protocol	Standard plus DNP3 Level 2 Outstation*													1					
Power Supply	120 Vac														1				
Battery Option	12 V, 16 Ahr															1			
User Interface	Configurable Labels ⁽³⁾ and Tri-Color LEDs*																3		
Installed Accessories ⁽⁶⁾	General Accessories: AC Transfer Switch - 120 Vac models only*																	1	1,3

With the installed RuggedCom Ethernet switch the accessory code of SEL part number may change. The final part number will not be known until the order is in process.

You included a RuggedCom Ethernet switch to interface with the customer supplied radio. Do you have an alternate solution for other installations where fiber is used instead of radio? Do you have successful experience with the solutions you are proposing? Are all DNP3 points including satellite clocks able to pass through the communication conversions you are proposing? The RuggedCom switch is used to provide SCADA / control communication over DNP and engineering access. Both require an individual serial port connection from the 651R. Since the radio was described as being an Ethernet radio and having only one serial port, our solution required a device to convert two serial ports to an Ethernet port to provide control and engineering access. If the radio contains two serial ports, or engineering access is no longer required, the RuggedCom device is not required. A similar situation occurs with fiber



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communication except the RuggedCom device would require a fiber optic Ethernet output instead of copper (to the radio).

We do have experience integrating the 651R and RuggedCom devices. Devices can pass through time signals.

3. Please revise and re-submit the SEL 651R part number, at a minimum for the 14-pin issue we raised. When doing so, please also confirm all accessories, such as heaters in the control cabinet, fuses on the voltage inputs, and shelf for the communication equipment.

The control cabinet is rated between -40C to 85C. G&W believes a heater is not necessary given the expected climate for this installation. We have not had problems previously in similar environments. All other accessories are included in the control cabinet.

4. Please verify that if the Viper-S is proposed, the mechanism cabinet is equipped with a heater to prevent condensation.
The Viper S recloser is equipped with a heater in the mechanism tank.
5. Please confirm that the molded-in current transformer also has a voltage sensor. The epoxy modules for the Viper S or ST recloser have voltage sensors molded in.
6. The City has open issues with SEL regarding the 651R operations and would like those addressed/resolved prior to committing on additional 651R purchases. If those issues are not successfully resolved, is G&W willing to consider a Cooper F6 recloser control?

The Viper S recloser will work with a Form 6 control from Cooper. Cooper has typically not been willing to quote or sell a control to G&W. Our preference is to work with SEL relays. Pricing would not be valid, if we needed to obtain a Cooper control.

G&W has discussed open issues regarding SEL and St. Charles with the local SEL reps. We have the assurance and confidence that any issues will be addressed or already are addressed. We will work diligently to make sure St. Charles receives proper satisfaction on any open issues regarding these controls.

Item B1 – Padmount Recloser

1. All of the questions from Item A, also need to be addressed for Item B1
See above.
2. Your bid is an alternate to what was specified. You took advantage of the fact that the Viper is molded with 600A apparatus bushings. The challenge is how to connect voltage sensors on the side opposite the internal voltage sensors and how to connect a voltage transformer on each side to power the control. The three plug-in Lindsey sensors you propose would seem to eliminate the possibility of a 200A interface on the back of the 600A elbow termination on one side of the recloser. Do you have a suggestion for where we could install elbow surge arresters on that side?
Although a solution with Lindsey sensors would function properly, it would require some "gymnastics" inside the enclosure, so G&W would propose to offer an



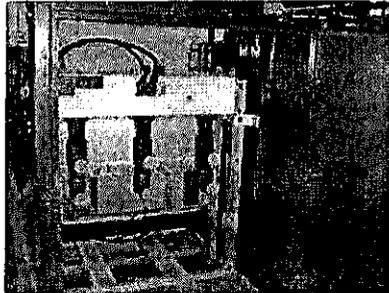
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alternative solution using 4 solid dielectric PTs. With 4 PTs, each connected to a 200 amp interface on the back of the 600 amp elbow termination, you would have a dead front source of voltage and, where needed, 120 volt AC power. G&W can offer this solution at the quoted price.

3. You propose 2 solid dielectric voltage transformers, one on each side of the recloser to power the control. Please provide details for these solid dielectric voltage transformers and how they connect to the high voltage supply. Are they plugged on to the 200A interface on the back of the 600A elbow termination? It would seem like one of these solid dielectric voltage transformers could take the place of the Lindsey voltage sensor. Is the output signal different on the voltage sensor than on the voltage transformer and that is why both are required? See question 2 above for the PT connection to the recloser. The Lindsey sensors do have higher impedance than standard VT's and require a different input. The 651R has to be ordered with sets of 3 voltage inputs therefore we cannot mix and match PT's and Lindsey sensors. Rather than providing 5 devices, it makes most sense to provide the 4 PTs as proposed above.
4. The control has three low-energy analog voltage inputs and three 300 volt analog voltage inputs. Are the three low energy inputs wired to the internal voltage sensors and the 300 volt analog inputs wired to the plug-in Lindsey sensors? That was the idea. Now with the 4 PTs as the solution, G&W will have 3 LEA inputs for the voltage sensors and 3 300 volt analog inputs for the PTs.
5. You quoted the C-module instead of the Z-module. Could the Z-module be provided at the same bid price?
Z-module can be provided at an increase of \$652.00. This amount accounts for a slightly more complicated molding design and an increase in enclosure size to accommodate clearance for elbows.
6. Please confirm that the front and rear of the enclosure are doors that open to give access to cable terminations.
Both sides of the padmount recloser have opening doors for access.
7. With the Viper ST the three manual trip and lockout handles are near the bottom of the enclosure. The City envisions this to be a difficult hookstick operation. Would the Viper S, if it were used instead, be mounted upside down as shown in the catalog? That would put a single manual trip and lockout handle near the top of the enclosure. Have other customers provided feedback on ease of hookstick operation for either of these scenarios?
The Viper S is mounted upside down as a standard for the padmount design. See the picture below. We haven't encountered any issues with the padmount Viper ST design because we normally use a C-module and have the lock out handles on the opposite side of the bushings.



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Item B2 – Switchgear

1. Your bid includes a base adapter (reducer) to fit a 63" x 69" box pad. You did not provide details of how this will work. A complicating factor is the stub up locations of the conduits within the existing box pad. Attached to this letter is a drawing showing the existing box pad and conduit dimensions. Also attached is a drawing showing the existing box pad and conduit dimensions. Also attached is a drawing showing three alternate ideas for making your switchgear work with the existing conduits. These ideas are:
 - a. Add concrete around the existing box pad. A custom base spacer will be required with the plate to support the SF6 filled tank
 - b. Install the Concast FC-71-85-36 over the existing conduits in place of the existing box pad. The custom base solution spacer will still be required.
 - c. Install a transformer box pad over the existing conduits and skip the custom base spacer. These box pads usually have an encapsulated 2 by 4 in the top cover to support the oil filled portion of a transformer. I would think it could support the SF6 filled tank, but it limits the cable opening.

The custom base spacer I show is not a reducer. I think a reducer would not allow for adequate cable training. Please explain what you envisioned for the base spacer you allowed in your proposal or suggest some other ideas if you can think of any.

The exact dimensions of the switch enclosure have not been determined yet, as we have not fully designed the enclosure. G&W can easily provide an enclosure with a 24" base spacer to support solutions (a) and (b). This spacer would be provided instead of the proposed base reducer. There would be no cost difference in the switch.

Once we finalize the dimensions of the enclosure, you could decide if it will fit on the Concast box and allow you to implement solution (b). If not, then you could fall back to solution (a).

Solution (c) would require knowledge of the dimensions of the transformer box pad. Then G&W would need to see if the switch can fit that dimension. Or maybe there are several dimensions to choose from. This solution would also probably work effectively, except that there would be more site work with the cables and conduits.



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It would be best to allow G&W to finalize the design of the switch and enclosure. Then we could evaluate the best solution for cable training and using the existing pad. We would have several options to choose from including the base reducer, base spacer combined with pad extension or alteration, and finally using a box pad, if the switch will fit on that. None of these options really have any effect on the switch price as they are all tradeoffs.

2. You took exception to the Unistrut cable support. What do you propose the City use to tie-down/support the high voltage cable and reduce stress on the cable termination?
A unistrut bar is a good method of supporting the cable. However G&W has not integrated this cable support with our switch/enclosure before. Most applications are installed without cable supports. If required in this case, cable support should be addressed in the field during installation by the contractor.
3. Please elaborate on what you mean by G&W provides protection to the trip/close circuit board.
The switch has a PT which provides 120 volts AC power to the switch controls. The switch controls use an inverter to get 24 volts DC and the DC is used to power the 751A relays, to provide the trip signal for the fault interrupters, and to power the motors used for resetting and closing the fault interrupters. G&W does not provide the circuitry, similar to a breaker, as described in the spec section 7.3.7.4-8.
4. You do not provide gutters or troughs. Can you show how you intended to bundle/route control wiring inside the gear?
Control cables are routed on the top of the switch and tight to studs using tie wrap. Cables are protected from the environment with a jacket.
5. You took exception to the specified test switches. Please describe what you offered instead, so the City can determine if it is acceptable or equivalent to what was specified.
We are planning to use a version of the test switch that you have specified. It is a front connected version of the FT-1F and will function similar to the specified device.
6. Please explain the difference between a true 52A contacts versus an auxiliary contact that provides switch position indication.
The aux. contacts on the fault interrupters are actually Form C contacts. So, G&W will supply this as specified.
7. Do you believe the heaters with a 40W resistor to be adequate for prevention of condensation?
G&W believes the specified heater would be for and air switch where there are live parts. The G&W switch is basically a submersible switch and condensation inside the main enclosure is not a problem. Heaters are not required.
8. You took exception to the radio backup battery. Will a separate battery for the radio be required? Is the radio backup not included in your proposal?
Radio will be fed from the 24VDC back-up battery of the relay. No need for a separate battery.

Please let us know if you have any more questions regarding our submittal.



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Sincerely,

Mamadou Fall
G&W Electric

G&W Electric Company

3500 West 127th Street
Blue Island, Illinois
60406-1864 USA

P: 708-388-5010
F: 708-388-0755
www.gwelec.com

ISO 9001:2008 Certified
ISO 14001:2004 Certified

Bruce Beth

From: Tom Lebakken [tomlebakken@sugarhillconsulting.net]
Sent: Wednesday, January 12, 2011 3:17 PM
To: Tom Bruhl; Bruce Beth; Ken Casper
Subject: Notes on Call with G&W

Here are some draft notes on the G&W call just in case we need a reminder at some time. If you see anything that is incorrect, please reply back.

1/12/2010 G&W Call Notes.

On the call with Tom Lebakken, Ken Casper, Bruce Beth, Tom Bruhl, John Madden, Erik Hanssen, and 2 or 3 others from G&W.

We discussed at length the following:

- Is reclosing needed at the switchgear tie point? Bruce explained that the equipment RFP was written with the assumption of no reclosing. He had had discussions with G&W before the RFP went out. By using the 751 without reclosing and not the 451, reclosing was not even an option. That way no one could configure such given the concern of rearming not being completed after the VFI trips. Also it was consistent with other discussions we had about the switchgear option.
- Everyone on the call concurred to not have reclosing. Tom Lebakken indicated he would not want such if load were trying to be picked up (consider the scenario of a 34kV and 12kV simultaneous fault). If load was already picked up and a fault occurred, reclosing might make sense but that would push us most practically to a recloser option. This choice of switchgear reflects a trade-off. It is quite unlikely anyways that when the tie is closed (which is rare), that a temporary fault occurs that a reclosing function would have helped.
- We discussed the need to basically have a Cold Load Pickup features. G&W / Erik stated the relay can be programmed to operate on one curve for a short time upon closing and another curve / settings after that.
- We discussed at great length options for Hot Line Tag and Local / Remote. It was discussed that while not a recloser, we effectively want a HLT capability to block remote closing by SCADA or DA should there be a fault that the VFI interrupts.
- We explored options to implement the HLT and Local/Remote. In the end we decided upon SEL programming those so they are just the same as with the 651R. We explored the idea of an external toggle switch in the close circuit that would open the close circuit and provide a contact into the 751 that would then turn on HLT. We communicated to G&W / Erik that the requirement is to have not less capability in this regard than the 651R. It was noted the specifications call out HLT and Local/Remote. It was understood by G&W that these capabilities would be tested by them at the factory. Another option we discussed was decoupling mechanically so the motor could run and not do anything. G&W stated this could be done by removing a pin. There was also concern with this that someone might forget to do such partly as it is an abnormal approach for the City. So something just like the 651R was seen by all as acceptable. Tom Bruhl was adding \$2,000 for SEL engineering services for HLT and Local / Remote setup.

- Tom L. communicated we want all available alarm contacts brought into the relay and other status to indicate position. In terms of inputs to each 751, G&W counted 7 as required (52a, 52b, low pressure, watchdog input, and 3 others).
- In terms of outputs G&W stated there is Open, Close, and watchdog.
- G&W has an opportunity to clarify in writing these matters and will be doing so.

Tom Lebakken
President
Sugar Hill Consulting, LLC
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Brooklyn, WI 53521
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tomlebakken@sugarhillconsulting.net
www.sugarhillconsulting.net

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Recloser / Switchgera Bid Tabulation

Item	Supplier	Cost	Options	Total
Overhead equipment				
Overhead Recloser	Cooper	\$24,225	\$1,500	\$25,725
Overhead Recloser	G&W	\$22,011	\$232	\$22,243
Single circuit pad mounted equipment				
Recloser in a Box	Cooper	\$40,650	\$9,085	\$49,735
Recloser in a Box	G&W	\$26,635	\$1,219	\$27,854
Multiple circuit pad mounted equipment				
Switchgear	Cooper	\$83,282	\$4,468	\$87,750
Switchgear	G&W	\$63,743	\$6,400	\$70,143

Comment

Low evaluated cost due to built in ethernet and coordination with software system

651R requires RuggedCom switch and media converter

Offerings very similar technically, higher cost

Offerings very similar technically, low bid item

VFI is oil filled, which is less advantageous than SF6. Installation would require civil work to replace existing switchgear foundation

SF6 is lighter and not a hazmat situation if it gets hit by a car. Closer to existing switchgear size.

BUDGET REVISION REQUEST FORM

Department: Electric

Date Requested: March 28, 2011

Purpose of Request/Comments (Attach additional pages if necessary)

Add funds to existing budget item for 12kV Automation Equipment and misc. items.

Allow purchase orders to be released, funds will not actually be expended until FY 11/12.

Processing the purchase orders will facilitate receiving grant funds from IMEA.

The purchase orders that will be processed will include the software/decision engine, one overhead pilot installation and one pad mounted installation.

If approved, funds in the proposed 11/12 budget will be reduced by this amount.

Equal Dollar Transfer

Amount \$0

Account Numbers

From: _____ To: _____

Ref #: _____ Proj # _____ Ref #: _____ Proj # _____

Addition (or Decrease) to Department Budget

Account # 200-70-03209-89 Amount \$150,000

Ref #: 71135 Proj # _____

Originator: T. Bruhl

March 28, 2011
Date

Department Head: _____

_____ Date

Dir. Of Finance/Administration: _____

_____ Date

For Finance Use Only

Revision entered and updated _____
Date

By: _____