Request for Quotes

July 24, 2013

Project: CP177471/W515816 – POWR – Emergency Chillers - Breakers

Description: See following pages for scope of work

University General Conditions can be found here (under Enclosure 2):
http://www.colorado.edu/facilitiesmanagement/pdc/construction/SOCP.html

Quotes Due: July 29, 2013 @ 3:00 PM

Send Quotes to: Jennifer Sample – Jennifer.sample@colorado.edu
Fulvio Spaziani – Fulvio.spaziani@colorado.edu
Contractor to provide GE equipment and GE installation services for the following scope of work:

**Work Description:** UL Listed Replacement of Stationary Power Break I ICCB with Stationary Power Break II

GE Energy Management - Services will provide equipment to replace a stationary style GE Power Break circuit breaker/switch with a functionally equivalent GE Power Break II stationary circuit breaker/switch. This replacement is a UL listed product from GE.

The new circuit breaker is intended to be a direct replacement of the existing Power Break stationary circuit breaker, matching form, function, and protection. The new Power Break II circuit breaker has the same envelope depth with a particular current rating, electrically operated, as opposed to the original Power Break, which has differing depths if electrically operated. For the electrically operated Power Break I replacement breakers, a new extended escutcheon shall be provided to allow for the Power Break II breaker projection from the existing door.

Hardware:

<table>
<thead>
<tr>
<th>Item 1</th>
<th>1600 A ICCB/Switch</th>
<th>Catalog Number:</th>
<th>Qty</th>
<th>3</th>
</tr>
</thead>
</table>

- Configured to Replace Power Break Catalog Number: TP1616SSE1 (original cat. no.)
- Trip Unit (Entelliguard TU & PowerPlus for ICCB; special PowerPlus for Switch)
- SSF16G2xx Std break PBII ICCB
- SHF16G2xx Hi-break PBII ICCB
  - (SSF/SHF... is front-connected and is the only connection option for 1600 A PB II)
- Sensor (xx): 800 A (ICCB only)
- 1000 A
- 1600 A
- Entelliguard TU Catalog Number: GB216L3XXXFXXXX LSI (J function includes long time & fuse curve coord)
- LSI X LSIG LSIGA LSIGDA Zone Interlock (ST & GF)
- JSI JSIG JSIGA JSIGDA Zone Interlock (ST & GF)
- Rating Plug Current Value: 1600 A, Cat. Number: GTP1600U1640 (GTP...)
- Basic Current Metering Full Metering (default is basic current metering)
- X Modbus RS-485 Communications (default is no communications)
- No Protective Relaying Protective Relaying (default is no protective relaying)
is no RELT option)

RELT feature (Reduced Energy Let-Through feature)  (default

### Accessories

<table>
<thead>
<tr>
<th>Electric Operator</th>
<th>None</th>
<th>120 Vac</th>
<th>240 Vac</th>
<th>24 Vdc</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vdc</td>
<td>72 Vdc</td>
<td>125 Vdc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closing Solenoid</td>
<td>None</td>
<td>120 Vac</td>
<td>240 Vac</td>
<td>24 Vdc</td>
<td>48</td>
</tr>
<tr>
<td>Vdc</td>
<td>72 Vdc</td>
<td>125 Vdc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shunt Trip Vac</td>
<td>None</td>
<td>24 Vac</td>
<td>48 Vac</td>
<td>120 Vac</td>
<td>208</td>
</tr>
<tr>
<td>Vdc</td>
<td>240 Vac</td>
<td>480 Vac</td>
<td>12 Vdc</td>
<td>24 Vdc</td>
<td>48 Vdc</td>
</tr>
<tr>
<td>With lockout</td>
<td>250 Vdc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UV Release Vac</td>
<td>None</td>
<td>24 Vac</td>
<td>48 Vac</td>
<td>120 Vac</td>
<td>208</td>
</tr>
<tr>
<td>Vdc</td>
<td>240 Vac</td>
<td>480 Vac</td>
<td>12 Vdc</td>
<td>24 Vdc</td>
<td>48 Vdc</td>
</tr>
<tr>
<td>Bell Alarm Vac</td>
<td>None</td>
<td>240 Vac</td>
<td>600 Vac</td>
<td></td>
<td>With Lockout</td>
</tr>
<tr>
<td>Vdc</td>
<td>250 Vdc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary Switch</td>
<td>None</td>
<td>240 Vac</td>
<td>600 Vac</td>
<td>4 stage</td>
<td>8</td>
</tr>
<tr>
<td>stage</td>
<td>12 stage (240 Vac only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(each stage as one form C contact: Common, 1 NO, 1 NC)</td>
<td>Push Button Cover</td>
<td>Hidden ON</td>
<td>Operations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Counter

- Trim Plate (breaker)
- Door Interlock
- Key Interlock

### Provisions (up to four cylinders, narrow body)

- Front Door Escutcheon
- Front Door Projection Escutcheon
- Primary Bus Extension Kit, Bolting Hardware, and Mounting Hardware
- RELT Power Supply, RELT local switch kit, and wiring harness
- Optional Blown Fuse Protection Kit (Bussman KAZ devices and PB II shunt

Trip, power supply by others)

Wiring shall meet OEM drawings.

Optional 4th wire sensor for ground element to be implemented with the new PowerBreakII trip unit

Provide 3 key interlock provisions.

### Scope of work:

Contractor/GE will remove the existing GE PowerBreak I circuit breaker and install the new GE PowerBreak II circuit breaker in the existing CU GE PowerBreak switchboard. As part of the overall installation service, GEIS will perform breaker(s) testing, startup, and commissioning of the new circuit breaker(s). GE will also de-commission and uninstall the existing “Ground Break” system which will be replaced by a Ground element in the PowerbreakII trip unit and install the 3 key interlock system on the new Powerbreak II.
Services Work Descriptions:

**Work Description:** UL Listed Replacement of Stationary Power Break I ICCB with Stationary Power Break II

GE Energy Management - Services will provide equipment to replace a stationary style GE Power Break circuit breaker/switch with a functionally equivalent GE Power Break II stationary circuit breaker/switch. This replacement is a UL listed product from GE.

The new circuit breaker is intended to be a direct replacement of the existing Power Break stationary circuit breaker, matching form, function, and protection. (Where the NEC has changed, i.e. ground fault protection for feeder breakers 1000 A or more, applied to systems with 150 Vac to ground or higher, the new breaker will have the required protection included). The new Power Break II circuit breaker has the same envelope depth with a particular current rating, whether the unit is manually or electrically operated, as opposed to the original Power Break, which has differing depths depending upon whether manually or electrically operated. For the manually operated Power Break I replacement breakers, only a new door trim plate will be required. For the electrically operated Power Break I replacement breakers, a new extended escutcheon will be provided to allow for the Power Break II breaker projection from the existing door.

GE Energy Management – Services will provide the replacement stationary Power Break II circuit breaker, escutcheon, and fourth wire sensor (for those solidly-grounded, four wire systems, require a 4th wire sensor). Instructions will be provided with this replacement circuit breaker. Minimal modification to the system is intended with this replacement kit. Except for the addition of RELT, metering, or remote communications to the replacement circuit breakers at the time of replacement, no further modifications to the switchgear wiring should be required.

These replacement breakers are direct bolt-in replacements when used with the appropriate conversion kit (included), with the only physical modification involving the door/enclosure escutcheon cut-out (trim plate provided). The wiring functions will mimic the original breakers’ operation, however, the internal switchgear/switchboard wiring may require some length adjustment due to the PB II having all auxiliary switch terminals on the LH side of the breaker, with all remaining functions on the RH side of the breaker.

<table>
<thead>
<tr>
<th>Item 1</th>
<th>Catalog Number: SSF16G216-PBI EO (1600)</th>
<th>Qty 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 A ICCB/Switch</td>
<td>Configured to Replace Power Break Catalog Number: TP1616SS1</td>
<td>(original cat. no.)</td>
</tr>
<tr>
<td>Trip Unit (Entelliguard TU &amp; PowerPlus for ICCB; special PowerPlus for Switch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ SSF16G2xx</td>
<td>Std break PBI ICCB</td>
<td>☑ SHF16G2xx</td>
</tr>
<tr>
<td></td>
<td>(SSF/SHF... is front-connected and is the only connection option for 1600 A PB II)</td>
<td></td>
</tr>
<tr>
<td>Sensor (xx):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ 800 A (ICCB only)</td>
<td>☑ 1000 A</td>
<td>☑ 1600 A</td>
</tr>
<tr>
<td>☑ Entelliguard TUCatalog Number: GB216L3XFXXXXX LSI</td>
<td>(1 function includes long time &amp; fuse curve coord)</td>
<td></td>
</tr>
</tbody>
</table>
GEIS Supplied Services:
GEIS will remove the existing GE PowerBreak I circuit breaker and install the new GE PowerBreak II circuit breaker in the existing customer GE PowerBreak switchboard. As part of the overall installation service, GEIS will also perform acceptance testing, startup, and commissioning of the new circuit breaker. GEIS will also de-commission and uninstall the existing “Ground Break” system which will be replaced by a Ground element in the Powerbreak II trip unit.

CUSTOMER RESPONSIBILITIES FOR SITE WORK:
- Customer will provide an electrician or supervisor to assist the GEIS field engineer in the above activities and be the point of contact at the site, to guide the GEIS Field Engineer around the site.
- Customer will provide site safety/security information.
- Customer will provide, operate, and maintain services for drinking water, sanitary facilities, parking, trash containers and lighting.
- Customer will provide power for test equipment or light hand tools, and lighting.
- Customer is responsible for the disposal of all wastes generated at the work site.
- Customer shall provide switching, LOTO, coordination with other projects, and grounding.
- GE shall provide copies of all available related drawings and instruction manuals for the equipment.
- Customer shall provide access to the equipment during scheduled service times; standby time or remobilization can be included for an adder at published rates. A single mobilization per site is included.
- Customer to provide any manlifts with operators, if required for isolation and testing elevated devices/connections.

Clarifications for Site Work:
- The work will be performed during a mutually agreed to schedule, tentatively scheduled for late 3Q of early 4Q 2013.
- The quote includes a kickoff conference call by the project work leader.
GEIS will provide the necessary test equipment for the scope of work.
This quote includes mobilization costs, T&L, travel time, preparation time, time for site-specific training and orientation, onsite time, and hardware items as described on page one of this proposal.
Any items or services not specifically outlined herein are not included.

**SCHEDULE:**
- The work will be accomplished at a mutually agreeable schedule during normal working hours, Monday through Friday, exclusive of Saturday, Sunday's and GEIS Holidays.
- If work must be performed Saturday, Sunday or at night there is a fee of $10,000.00.
- Please allow 10-12 weeks to schedule.
- Expedite fee of $5000 could improve delivery dates.

**DELIVERABLES:**
GEIS will provide a detailed report of the work scope within 30 days of completion of the work.

**PRICE:**
For the equipment package defined above, McClure-Hill is pleased to quote the following:

**Item 1** (programmer equipped with RELT and metering capabilities)
For the 1600 A, Stationary Break stationary circuit breaker, electrically operated, LSIG protection with 1600 A ratings plug, RELT capable, and metering/communications capable, Catalog No. SSF16G216-PBI EO Plus (1600), the cost for the Power Break II replacement unit is: .........**Twenty Seven Thousand Five Hundred Seventy Two Dollars ($25,858.00 USD, each)**

**Item 2**
Labor to install equipment and decommission and uninstall existing Ground Break. Kirk Key (Scheme 13) locks and key for main-tie-main breakers. System.............**Thirty Seven Thousand Six Hundred and Twenty Seven dollars ($37627.00)**

**Total Project Price**..................................................................................................................................................................................$115,201.00


Note:
1. Field installation & startup are not included in this proposal.
2. As a suggestion, one GTUTK20 Test Kit $7864.70, and one TVPB battery pack with TVPB PACC cable $262.34 for connection to Entelliguard TU programmers should be included, but is not part of this offering. This is a test set and no field installation is required.
3. If this circuit breaker is to be applied to a solidly grounded 480 V system or higher, and a fourth wire load is connected, there may be need for a 4th wire sensor. This price includes a 4th wire sensor.
4. If a 4th wire sensor exists, if used with original MicroVersaTrip, MVT RMS-9, MVT RMS-9 EPIC, enhanced MVT Plus/PM, then the existing sensor should be compatible with the Entelliguard TU supplied with the circuit breaker.
5. For multi-source grounding schemes, an isolation transformer will be required for every neutral sensor secondary connection to its respective circuit breaker.

Note, pricing above does not include Duties, taxes or export packaging.

*Note: Additional work will be performed on a Firm Fixed Price basis.*

The sale of the services (including any related goods or materials) covered by this proposal is expressly conditioned upon the terms contained or incorporated by reference herein, including GE Form ES104 (Rev. 4) “Terms and Conditions for Sale and Lease of Products and Services”. Any additional or different terms proposed by the purchaser are objected to and will not be binding upon GE, unless specifically assented to in writing by GE’s authorized representative.

If the items or services above are funded by the U.S. Federal Government, each item and service GE provides is a "commercial item" as defined in FAR PART 2, 2.101 and is provided in accordance with FAR Part 12 and in accordance with FAR 52.244-6 if this is a subcontract. Therefore, no governmental contracting provisions, standards or requirements, including without limitations those relating to cost accounting and the Truth-in-Negotiations Act, but those expressly
accepted herein apply. If the reasonableness of the price cannot be established through adequate price competition, or if cost or pricing data should be required for any other reason, or if the item or service cannot be considered a “commercial item,” GE may cancel the contract without penalty and be reimbursed for work done to date.

If you have any questions, please contact:

<table>
<thead>
<tr>
<th>By:</th>
<th>William Hudson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Senior Sales Manager</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:William.Hudson@ge.com">William.Hudson@ge.com</a></td>
</tr>
<tr>
<td>Phone:</td>
<td>303-329-2301</td>
</tr>
<tr>
<td>Fax:</td>
<td>303-329-2367</td>
</tr>
</tbody>
</table>