Requestor: City of Rock Hill  
Post Office Box 11706  
Rock Hill, SC 29731-1706  
Contact: Chuck Smith  
Utilities Electrical Substation & Traffic Supervisor  
Chucksmith@cityofrockhill.com or  
Tel: (803) 329-5531 / Fax: (803) 329-5616

PROJECT: PREVENTATIVE SUBSTATION MAINTENANCE  
Contractor shall perform & carry out in a good, clean & professional manner, those services  
necessary, to perform the maintenance on six (6) 25KVA substations along with associated  
equipment and apparatuses.

Note: See page two (2) for scheduled pre-response conference.

Return Proposal No Later Than  
March 05, 2014 at 10 A.M. (e.s.t.)

Return Proposal To: City of Rock Hill  
PO BOX 11706  
Rock Hill, SC 29731  
Attention: Marty Burr

Express/Hand-Carry To:  
City of Rock Hill  
757 S Anderson Road Bld. 103  
Rock Hill, SC 29730  
Attention: Marty Burr
MANDATORY PRE-BID CONFERENCE

A mandatory pre-bid conference will be held at 10:00 A.M. (e.s.t.) on February 19, 2014, at the following location.

City of Rock Hill City
Purchasing Office Building #103
757 South Anderson Road
Rock Hill, SC 29730

Respondents who intend to submit proposals are required to attend. This will be the only opportunity to ask questions regarding this RFP. If any revisions or deletions are required, as a result of this meeting, an addendum will be issued to all firms who attend the pre-bid meeting.

Please fill in all of the information below, to include the signature of an Officer of your company. This page is to be turned into the City at the Pre-Bid Meeting.

__________________________________________________________
AUTHORIZED SIGNATURE PRINTED NAME DATE

Company Federal Tax No. or SS No

__________________________________________________________
Mailing Address E-Mail Address

__________________________________________________________
City State Zip Code

__________________________________________________________
Phone Number Fax Number

Years In Business:_____
INSTRUCTIONS TO BIDDERS

Bidders are to use the Bid Sheet provided herein for submission of bid.

Enclosed insurance forms are to be submitted only by the successful bidder.

The enclosed Indemnity Provision is to be signed and submitted to the City only by the successful bidder.

A Bid Bond of 5% is required with submission of proposal. Performance and payment bonds in the amount of 100% of proposal will be required by the successful bidder after award is made.

The contract will start June 01, 2014 and run through December 31, 2016 with 2 one year options, or its completion. The City reserves the right to negotiate with the contractor on any contract extensions.

Bids are to be expressed as complete, please review all services detailed herein.

The City reserves the right to terminate this contract at any time by submitting written notice to the contractor at least thirty (30) calendar days in advance.

PART I

GENERAL INFORMATION

A. Proposals will be considered as specified herein or attached hereto under the terms and conditions of this proposal.

B. Proposals must be made in the official name of the firm or individual under which business is conducted (showing official business address) and must be signed in ink by a person duly authorized to legally bind the person, partnership, company or corporation submitting the proposal.

C. Offerors are to include all applicable requested information and any additional information they wish to be considered. RFP submittals should be limited to 20 pages. Submittals exceeding the 20 page limit will not be considered. Tab dividers and cover page will not be counted in the 20 page proposal limit.
D. **ONE** (1) ORIGINAL AND (2) COPIES OF YOUR PROPOSAL ARE REQUIRED.

E. Due to the possibility of negotiation with any offeror submitting a proposal which appears to be eligible for contract award pursuant to the selection criteria set forth in this Request for Proposal (RFP), prices will be divulged at time of opening.

F. Proposals will be received by the Rock Hill Purchasing Department until 2:00 P.M. local time on the opening date shown.

G. Notice of intended award of contract will be posted at the location listed below:

   www.cityofrockhill.com

   **PROPOSALS SUBMITTED VIA THE FACSIMILE MACHINE, OR E-MAIL ARE UNACCEPTABLE.**
PART II

PERFORMANCE CONDITIONS

A. The contractor will be required to assume the sole responsibility for the complete effort as required by this RFP. The City will consider the contractor to be its sole point of contact with regard to contractual matters.

PART III

CONTRACT TERM

The term of this contract shall begin with the date of award and continue for a period of 30 months with two 12 month renewal options. City reserves the right to cancel, change, add, or delete items at any time with 30 day written notice.

PART IV

CONTRACTUAL REQUIREMENTS

1.0 FORCE MAJURE: The contractor shall not be liable for any excess costs if the failure to perform the contract arises out of causes beyond the control and without the fault or negligence of the contractor. Such causes may include, but are not restricted to acts of God or of the public enemy, acts of Governments in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the contractor. If the failure to perform is caused by default of a subcontractor, and if such default arises out of causes beyond the control of both the contractor and subcontractor, and without the fault or negligence of either of them, the contractor shall not be liable for any excess costs for failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the contractor to meet the required delivery schedule.
2.0 **GOVERNING LAW:** Except to the extent that this agreement may be governed by any federal law, including federal bankruptcy law, this Agreement shall be governed by, constructed and interpreted under, and enforced exclusively in accordance with the laws of the state of South Carolina, and the courts in the state of South Carolina shall have jurisdiction with respect to any dispute arising hereunder.

3.0 **OFFERORS QUALIFICATIONS:** Offeror must, upon request of the City, furnish satisfactory evidence of its ability to furnish products or services in accordance with the terms and conditions of this proposal. The Rock Hill Purchasing Department reserves the right to make the final determination as to the offeror’s ability to provide the services requested herein.

4.0 **OFFEROR RESPONSIBILITY:** Each offeror shall fully acquaint him/herself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this proposal. It is expected that this will sometimes require on-site observation. The failure or omission of an offeror to acquaint him/herself with existing conditions shall in no way relieve him/her of any obligation with respect to this proposal or to the contract.

5.0 **AFFIRMATIVE ACTION:** The contractor will take affirmative action in complying with all federal and state requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap.

6.0 **WMBE STATEMENT:** It is the policy of the City of Rock Hill to provide minorities, and women equal opportunity for participating in all aspects of the City’s contracting and procurement programs, including but not limited to employment, construction projects, and lease agreements consistent with the laws of the State of South Carolina. It is further the policy of the City of Rock Hill to prohibit discrimination against any person or business in pursuit of these opportunities on the basis of race, color, national origin, religion, sex, age, handicap, or veteran status. It is further the policy of the City of Rock Hill to conduct its contracting and procurement programs so as to prevent such discrimination and to resolve any and all claims of such discrimination.
7.0 **ILLEGAL IMMIGRATION REFORM ACT COMPLIANCE:**
The contractor certifies that the contractor will comply with the requirements of Chapter 14, Title 8 of the South Carolina Code of Laws titled **Unauthorized Aliens and Public Employment** and agrees to provide to the City of Rock Hill any documentation required to establish either; (a) the applicability of such law to the contractor, subcontractor, and sub-subcontractor; or (b) the compliance with this law by the contractor and any subcontractors or sub-subcontractors.

8.0 **TERMINATION:** Subject to the Provisions enclosed, any contract resulting from this proposal may be terminated by the City provided a thirty (30) day advance notice in writing, by the City Manager, is given to the contractor.

8.1 **NON-APPROPRIATIONS:** Funds for this contract are payable from local appropriations. In the sufficient appropriations are not made to pay the charges under the contract it shall terminate without any obligation to the City.

8.2 **CONVENIENCE:** In the event that this contract is terminated or canceled upon request and for the convenience of the City without the required thirty (30) day advance written notice, then the City shall negotiate reasonable termination costs, if applicable.

8.3 **CAUSE:** Termination by the City for the cause, default or negligence on part of the contractor shall be excluded from the foregoing provisions; termination costs, if any shall not apply. The thirty (30) day advance notice requirement is waived and the default provision listed herein shall apply.

8.4 **DEFAULT:** In case of default by the contractor, the City reserves the right to purchase any and all items/services in default in open market, charging contractor with any excessive costs. SHOULD SUCH CHARGE BE ASSESSED, NO SUBSEQUENT PROPOSALS OF THE DEFAULTING CONTRACTOR WILL BE CONSIDERED UNTIL THE ASSESSED CHARGE HAS BEEN SATISFIED.
9.0 PRIME CONTRACTOR RESPONSIBILITIES: The contractor will be required to assume sole responsibility for the complete effort as required by this RFP. The City will consider the contractor to be the sole point of contact with regard to contractual matters.

10.0 SUBCONTRACTING: If any part of the work covered by this RFP is to be subcontracted, the offeror shall identify the subcontracting organization and the contractual arrangements made therewith at the time of the offer. All subcontractors must be approved by the City. The successful offeror will also furnish the corporate or company name and the names of the officers of any subcontractors engaged by the offeror.

11.0 OWNERSHIP OF MATERIAL: Ownership of all data, material and documentation originated and prepared for the City pursuant to this contract shall belong exclusively to the City of Rock Hill.

12.0 COMPLIANCE WITH STATE & FEDERAL REQUIREMENTS: State and Federal requirements that are more restrictive than these set forth herein shall be followed by the contractor.

13.0 CONTRACT AMENDMENTS: Amendments to any contract between the City and the contractor must be reviewed and approved by the Rock Hill City Manager.

14.0 ASSIGNMENT: No contract or its provisions may be assigned, sublet, or transferred without the written consent of the Rock Hill Utilities Department.

15.0 RECORDS RETENTION & RIGHT TO AUDIT: The City shall have the right to audit the books and records of the contractor as they pertain to this contract. Such books and records shall be maintained for a period of three (3) years from the date of final payment under the contract. The City may conduct performance audits of the contractor, as determined necessary by the City. Pertaining to all audits, the contractor shall make available to the City, access to its computer files containing the history of the contract performance and all other documents related to the audit. Additionally, any software used by the contractor shall be made available for auditing purposes at no cost to the
16.0 INDEPENDENT CONTRACTOR STATUS: The parties hereby agree that Contractor is an independent Contractor of the City and that nothing in this Agreement shall be deemed to place the Parties in a relationship of employer/employee, partners, or joint ventures. Neither party shall have the right to obligate or bind the other in any manner. Each party agrees and acknowledges that it will not hold itself out as an authorized agent with the power to bind the other Party in any manner. Each Party shall only be responsible for any withholding taxes, payroll taxes, disability insurance payments, unemployment taxes, or other similar taxes or charges with respect to its activities in relation to performance of its obligations of this Agreement.

17.0 REPRESENTATIONS OF CONTRACTOR: Contractor represents warrants and covenants that:

A. In providing the services, Contractor shall utilize the care and skill ordinarily used by members of Contractor profession practicing under similar circumstances at the same time and in the same locality.

B. All employees provided by Contractor (Employees) to the City shall have the qualifications, skills and experience necessary to perform his/her job in accordance with the requirements of this Agreement. City may request the removal of any Employee for good cause.

C. Contractor is a business, validly existing and in good standing under the Laws of the State of South Carolina.

18.0 INDEMNITY PROVISION: Contractor agrees to and shall indemnify and hold the City harmless from and against all liability, loss, damages or injury, and all costs and expenses (including attorneys’ fees and costs of any suit related thereto), suffered or incurred by the City, arising from or related to this Agreement or Contractor’s performance hereunder.
19.0 **INSURANCE:** Contractor agrees that Contractor shall keep and maintain general automobile liability insurance in the amount of $500,000 per occurrence for each vehicle, $1,000,000 in the aggregate for all vehicles which Contractor brings into City property or uses in any manner in the provision of the Services, including transportation to and from the site(s) where the Services are rendered; and Contractor further agrees that Contractor shall maintain general liability insurance in the amount of at least $500,000 per incident/occurrence and $1,000,000 in the aggregate for all incidents/occurrences during the contract period; and Contractor agrees that Contractor shall maintain Professional Liability Insurance in the amount of $500,000. In no event shall the Contractor serve as a self-insurer for the purpose of Workers Compensation Insurance. Contractor also agrees that Contractor shall provide Workers Compensation Insurance, Automobile Liability Insurance, General Liability Insurance and Professional Liability Insurance Endorsements, if applicable, to the City. All insurance related questions should be directed to the City Risk Manager, Dot Archie @ (803) 329-7025.

20.0 **CITY BUSINESS LICENSE:** The successful firm, prior to execution of the contract, must possess or obtain a City of Rock Hill Business License. Such license must be maintained throughout the duration of the contract. The fee for such license is based on the amount of the contract with the City, if the vendor is not currently doing other business inside the City limits. If the vendor is currently doing other business within the City limits of Rock Hill, and does not possess a business license, then the fee for the license is based on total gross receipts from customers within the City limits. Contact Business License Office @ (803) 329-7042 to determine the exact amount or to ask other pertinent questions regarding doing business in the City of Rock Hill.

21.0 **NON-APPROPRIATION OF FUNDS:** This Agreement shall be subject to the availability and appropriation of funds by City Council. If City Council does not appropriate the funding needed by the City to make payments under this Agreement for a given fiscal year, the City will not be obligated to pay amounts due beyond the end of the last fiscal year for which funds were appropriated. In such event,
no act or omission by the City, which is attributable to non-appropriation of funds, shall constitute a breach of or default under this Agreement.
SPECIAL INSTRUCTIONS

1. **Intent to Perform:** It is the intent and purpose of the City of Rock Hill that this request permits competition. It shall be the offeror’s responsibility to advise the Rock Hill Purchasing Department if any language requirements, etc. or any combinations thereof, inadvertently restricts or limits the requirements stated in this RFQ to a single source. Such notification must be submitted in writing and must be received by the Rock Hill Purchasing Department within fifteen (15) days of the date of issue. A review of such notifications will be made.

1. **Right of Non-Commitment or Rejection:** This solicitation does not commit the City of Rock Hill to award a contract, to pay any costs incurred in the preparation of the proposal, or to procure or contract for the articles of goods or services. The City reserves the right to accept or reject any or all proposals received as a result of this request, or to cancel in part or in its entirety this proposal if it is in the best interest of the City to do so.
Customer Service

Please remember, although you are a contracted City service, you each represent the City of Rock Hill during all work performed, face-to-face as well as telephone conversations. These guidelines are to give all contract employees a solid feeling for what the City of Rock Hill expects from any contracted service.

Overview:
   A. Be friendly, courteous, and helpful
   B. Company uniforms must be worn at all times
   C. Staff members must look and act professional at all times.

CONTRACTORS EMPLOYEES:

Before the Contractor can enter a City property or the project site, Contractor shall investigate and certify that, during the term of the Agreement, all employees and persons under Contractor’s control have not been convicted of a sexual crime or are not on the sexual offender registry. Contractor shall require all subcontractors to make a similar investigation. One such investigation within six (6) months of commencement of the project work, by the employer, fulfills the City’s requirement for the Project.

The Rock Hill Police Department along with the City of Rock Hill also reserves the right to cancel any contracts, agreements, purchasing or distribution, etc., if they feel the project, purchasing, vehicle(s), and or property(s) may be in jeopardy due to the contractor’s employee(s) having a criminal history which may lead to ethical issues while dealing with city workings or investigative activities.

COMPANY_____________________________________________

Authorized Signature:

PRINT NAME AND TITLE:____________________________________

SIGNATURE_____________________________DATE________
INDEMNITY PROVISION

CONTRACTOR (or Lessee or Vendor) assumes entire responsibility and liability for losses, expenses, demands and claims in connection with or arising out of any injury, or alleged injury (including death) to any person, or damage, or alleged damage, to property of City or others sustained or alleged to have been sustained in connection with or to have arisen out of or resulting from the performance of the work/service by the Contractor, his subcontractors, agents, and employees, including losses, expenses, damages sustained by City, and agrees to indemnify and hold harmless the City, its officials, employees or volunteers from any and all such losses, expenses, damages, demands and claims and agrees to defend any suit or action brought against them, or any of them, based on such alleged injury or damage, and to pay all damages, cost and expenses in connection therewith or resulting therefrom. As an integral part of this agreement, contractor agrees to purchase and maintain during the life of this contract, contractual liability insurance in the amount required in the general liability insurance requirements and to furnish proper evidence thereof.

Above provision specifically applies to the contract dated ________________________ between the City of Rock Hill and ________________________________________ for _____________________________.

(service or products)

NAME________________________________________________
PRINT NAME________________________________________
TITLE_________________________________________________
COMPANY____________________________________________
EXHIBIT A

INDEX

I. INTRODUCTION

II. MAINTENANCE CONTRACTING REQUIREMENTS

III. EQUIPMENT

IV. MAINTENANCE SPECIFICATIONS

V. ITEMIZED BID PROPOSAL

VI. BID SHEET

VII. QUESTIONNAIRE

VIII. SAMPLE TEST REPORTS
I. INTRODUCTION

The City of Rock Hill is seeking bids on its 25 KV Substation Preventive Maintenance Program. Maintenance will be performed in the spring and fall as money and load permit. Equipment will be isolated, de-energized, and grounded as required on an individual circuit basis. The station will only be completely de-energized for the duration of testing the power transformer and circuit switcher.

II. MAINTENANCE CONTRACTING REQUIREMENTS

1) Must have five years of experience in substation maintenance and testing.
2) 8 cal/cm^2 FR clothing, hard hat, safety glasses, and steel-toe shoes are required to enter substations.
3) Vendor to provide all associated maintenance and test equipment.
4) Test results to be provided to the City prior to payment. The report must include a time-stamped copy of as-found and as-left relay settings for all microprocessor based relays. (See sample test reports).
5) Questionnaire (sect. VII) to be submitted along with bid proposal.
6) Oil sample from power transformer must be submitted to a reputable testing lab.

III. EQUIPMENT

The city owns and operates seven 25 KV electrical substations. They are as listed below along with their electrical equipment.

Delivery 1 (1200 Charlotte Ave.)
(5) S & C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351 relays
(4) GE ML-32 (432KVA) voltage regulators with Beckwith controllers
(6) GE VR1 (432KVA) voltage regulators with Beckwith controllers
(3) GE VR1 (576KVA) voltage regulators with GE SM-3 controllers
(2) Siemens JFR (432KVA) voltage regulators with Beckwith controllers
(1) Schweitzer 787 current differential relay
(1) 115 Kv Circuit Switcher type Series 2000 S&C
(1) ABB three phase power transformer 30\40\50 mva

Delivery 2 (1462 Blackmon Rd.)
(5) S & C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351 relays
(2) GE VR1 (432KVA) voltage regulators with Beckwith controllers
(12) Siemens JFR (432KVA) voltage regulators with Beckwith controllers
(1) GE VR1 (576KVA) voltage regulator with GE 2011C digital tapchanger
Delivery 3 (748 Huey Rd.)
(5) S & C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351 relays
(1) Siemens type SDV-3 vacuum breaker with Schweitzer 351 relay
(1) GE VR1 (576KVA) voltage regulators
(3) GE VR1 (432KVA) voltage regulators
(9) Siemens JFR (432KVA) voltage regulators
(2) GE ML32 (432KVA) voltage regulators

Delivery 4 (1200 The Crossing)
(4) S&C FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweiter 351 relays
(12) GE VR1 voltage regulators with beckwith controllers
(1) Hevi-duty three phase power transformer 30\40\50 mva
(4) GE phase & neutral overcurrent relays (model # 12IFC53B3A)
(3) GE bus differential relays (model # 12PVD21B1A)
(3) GE transformer differential relays (model # 12BDD15B16A)

Delivery 5 (540 Springdale Rd.)
(5) S&C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351 relays
(15) GE VR1 voltage regulators with GE SM3 controllers
(1) Kuhlman three phase power transformer 30\40\50 mva
(1) 115 Kv Circuit Switcher type Series 2000 S&C
(1) Schweitzer 587 current differential relay

Delivery 6 (4075 Homestead Road)
(5) S&C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351 relays
(15) GE VR1 voltage regulators with GE controllers
(2) Kuhlman Three Phase Power Transformer 20/26/33 mva
(2) 115 Kv Circuit Switcher type Series 2000 S&C
(2) Schweitzer 587 current differential relays

Delivery 7 (Stewart Ave.)
(4) S&C type FVR vacuum breakers (cat. # FVR 2121516A, 27KV, 1200A, 3-phase, 240VAC closing coil, 48VDC trip coil) with Schweitzer 351S relays
(12) GE VR1 voltage regulators with GE 2011C digital tapchanger controls
(1) 115 Kv Circuit Switcher type Series 2000 S&C
(1) Schweitzer 351S relay
(1) Schweitzer 787 current differential relay
(1) ABB three phase power transformer 30\40\50 mva
III. MAINTENANCE SPECIFICATIONS

A. On-site regulator maintenance
   1. Oil dielectric testing before and after
   2. Turns ratio
   3. Filter or replace oil
   4. Replace gaskets if needed
   5. Clean, adjust, or replace contacts if needed
   6. Clean bushings, fittings and retighten
   7. Test arrester
   8. Check and tighten internal connections

B. On-site vacuum breakers maintenance
   1. High voltage test vacuum bottles
   2. Micro-ohm contacts
   3. Check and lubricate mechanism
   4. Check trip and close adjustments (Mechanical)
   5. Clean control cabinet
   6. Check polarity and ratio current transformer
   7. Check and tighten connectors

C. Relay Tests (sel-351, 351S, 587, 787)
   1. Metering test on all CT and PT inputs
   2. Trip test for all enabled protective functions
   3. Complete functional test for all wired IO to include breaker trips when relay element operates
   4. Verify proper reclosing operation
   5. Also include timing test on all electro-mechanical relays at delivery 4.

D. On-site transformer test
   1. Doble test-insulation power factor
   2. Tip-up test
   3. Excitation current test
   4. Insulation resistance test
   5. Turns ratio test
   6. Winding resistance

E. On-site Circuit Switcher test
   1. Inspect and lubricate as necessary
   2. Check trip and close adjustments (Mechanical)
   3. Doble test on insulating support columns
## IV. ITEMIZED BID PROPOSAL

<table>
<thead>
<tr>
<th>DELIVERY 1</th>
<th>Price each</th>
<th>Extended</th>
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<tbody>
<tr>
<td>(5) S&amp;C TYPE FVR VACUUM BREAKERS &amp; 351 RELAYS</td>
<td>__________</td>
<td>_________</td>
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<tr>
<td>(4) GE ML32, 14.4 KV, 300 AMPS, SINGLE PHASE 432KVA</td>
<td>__________</td>
<td>_________</td>
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<tr>
<td>(6) GE VR1, 14.4 KV, 300 AMPS, SINGLE PHASE 432KVA</td>
<td>__________</td>
<td>_________</td>
</tr>
<tr>
<td>(3) VR1, 14.4 KV, 400 AMPS, SINGLE PHASE 576KVA</td>
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<td>_________</td>
</tr>
<tr>
<td>(2) SIEMANS JFR, 14.4 KV, 300 AMPS, SINGLE PHASE</td>
<td>__________</td>
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<tr>
<td>(1) 115 Kv Circuit Switcher type Series 2000 S&amp;C</td>
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<tr>
<td>(1) SEL 787 CURRENT DIFFERENTIAL RELAY</td>
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<tr>
<td>(1) ABB THREE PHASE POWER TRANSFORMER</td>
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<td>(3) GE VR1, 14.4 KV, 300 AMPS, SINGLE PHASE</td>
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<tr>
<td>(12) SIEMENS JFR, 14.4 KV, 300 AMPS, SINGLE PHASE</td>
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<tr>
<td>(1) SIEMENS TYPE SDV-3 VACUUM BREAKER</td>
<td>__________</td>
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<tr>
<td>(4) GE VR1, 14.4 KV, 300 AMPS, SINGLE PHASE</td>
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<td>_________</td>
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<tr>
<td>(9) SIEMENS JFR, 14.4 KV, 300 AMPS, SINGLE PHASE</td>
<td>__________</td>
<td>_________</td>
</tr>
<tr>
<td>(2) GE ML32, 14.4 KV, 300 AMPS, SINGLE PHASE 432KVA</td>
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<tr>
<th>DELIVERY 4</th>
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<td>__________</td>
<td>_________</td>
</tr>
<tr>
<td>(12) GE VR1 14.4 KV, 300 AMPS, SINGLE PHASE</td>
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</tbody>
</table>
(10) GE ELECTRO-MECHANICAL RELAYS
(1) HEVI-DUTY THREE PHASES POWER TRANSFORMER

DELIVERY 5
(5) S&C TYPE FVR VACUUM BREAKERS & 351 RELAYS
(15) GE VR1, 14.4 KV, 400 AMPS, SINGLE PHASE
(1) KUHLMAN THREE PHASE POWER TRANSFORMER
(1) S&C 115KV CIRCUIT SWITCHER SERIES 2000
(1) SEL 587 CURRENT DIFFERENTIAL RELAY

DELIVERY 6
(5) S&C TYPE FVR VACUUM BREAKERS
(15) GE VR1, 14.4 KV, 400 AMPS, SINGLE PHASE
(2) KUHLMAN THREE PHASE POWER TRANSFORMER
(2) S&C 115KV CIRCUIT SWITCHER SERIES 2000
(2) SEL 587 CURRENT DIFFERENTIAL RELAYS

DELIVERY 7
(4) S&C TYPE FVR VACUUM BREAKERS
(12) GE VR-1, 14.4KV, 400 AMPS, SINGLE PHASE
(1) ABB THREE PHASE POWER TRANSFORMER
(1) S&C 115KV CIRCUIT SWITCHER SERIES 2000
(1) SEL 787 CURRENT DIFFERENTIAL RELAY

EXTENDED TOTAL: ___________________________________
IV. **BID SHEET**

We the undersigned do hereby affirm that we have read and do understand the enclosed bid requirements and specifications, and do submit this bid to perform the prescribed work for payment in the sum of:

Bid amount is the Total Extended Sum:

Preventative Substation Maintenance  
Amount: $_________________

Company Name:______________________________________________________
Address:____________________________________________________________
Phone#: _________________________  Fax#: __________________________
Name: ______________________________  Title: __________________________
Signature: ___________________________  Date: ________________________
E-Mail Address: ____________________________________________________
V. QUESTIONNAIRE

Please provide brief descriptions for the following:

1. History and philosophy
2. Management Team
3. Staff (please outline experience and qualifications)
4. Equipment used
5. Employee Safety Training Program
6. Processes used for testing
7. Accomplishments
8. References (3 minimum)
9. Years performing substation maintenance
VI. SAMPLE TEST REPORTS

REGULATORS:

Voltage Regulator Maintenance Report

Customer: CITY OF ROCK HILL
Location: DELIVERY 3
Designation: CKT 5, REG 1
Serial Number: 3375060451715
Manufacturer: SIEMENS
Model: JFR
Rated kVA: 432.0

Tested By: HARBUCK, BRYAN
Date Tested: 3/1/2011
Rated kV: 14.40
Rated Amps: 300
Fluid Volume: 235
Total Weight: 5244

Regulator Control Panel Inspection
Manual Raise: ✔
Manual Lower: ✔
Auto Raise: ✔
Auto Lower: ✔
Counter Operational: ✔
Neutral Light Operational: ✔
Position Indicator Operational: ✔
Draghands Reset: ✔
Inspected Control Cabinet Gasket: ✔
Cleaned Control Box: ✔

Regulator Tank Inspection
Filter Oil: ✔
Clean Components: ✔
Inspected Motor: ✔
Tested Motor Capacitor: ✔
Checked Position Indicator Drive: ✔
Inspected Chain: ✔
Inspected Tap Changer Contacts: ✔
Inspected Tap Changer Mechanism: ✔
Inspected Bushings: ✔
Inspected Tank Bolts: ✔
Inspected Tank Gaskets: ✔
Inspected Vent: ✔
Inspected Outlet Valve: ✔

Oil Testing

<table>
<thead>
<tr>
<th>ASTM D-877: New Oil - 30 kV</th>
<th>Initial</th>
<th>Final</th>
<th>ASTM Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D-877: Replace &lt; 22 k</td>
<td></td>
<td>37</td>
<td>D-877</td>
</tr>
<tr>
<td>Color: New Oil - 0.5</td>
<td></td>
<td>1.0</td>
<td>D-1500</td>
</tr>
<tr>
<td>Acidity: Pink</td>
<td></td>
<td>Pass</td>
<td>D-974</td>
</tr>
</tbody>
</table>

Comment:
Regulator was changed out due to burnt contacts on old regulator.

Thursday, March 10, 2011
Substation Class Vacuum Breaker

CUSTOMER: City of Rock Hill
OWNER: City of Rock Hill
LOCATION: Rock Hill, SC
TESTED BY: JT/ DD

TSG JOB#: 6529
DATE: 5/9/13

EQUIPMENT DATA

EQUIPMENT: Station Breaker
MANUFACTURER: Square D
CATALOG #: FVR2121516
SERIAL NUMBER: 17-14864
CURRENT RATING: 1200
MOTOR RATING: 240VAC

CIRCUIT DESIGNATION: #3
VOLTAGE RATING: 27kV
OPERATING VOLTAGE: 23kV
INTEGRATING RATING: 16kA @ 27kV
CLOSE COIL RATING: 240V ac
TRIP COIL RATING: 48VDC

MECHANICAL CHECKS

<table>
<thead>
<tr>
<th>CHECK POINT</th>
<th>COND.</th>
<th>NOTE</th>
<th>CHECK POINT</th>
<th>COND.</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL CONDITION</td>
<td>A</td>
<td>INTERLOCKS</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLEANLINESS</td>
<td>A</td>
<td>GREASE RACKING MECHANISM</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VACUUM BOTTLES</td>
<td>A</td>
<td>LUBRICATION</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUXILIARY CONTACTS</td>
<td>A</td>
<td>TIGHTNESS OF CONNECTIONS</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIMARY CONTACTS</td>
<td>A</td>
<td>ELECTRICAL OPERATION</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EROSION INDICATORS</td>
<td>A</td>
<td>MECHANICAL OPERATION</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHASE BARRIERS</td>
<td>A</td>
<td>CHARGING MECHANISM</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LUBE ON CURRENT PARTS</td>
<td>A</td>
<td>TRIP FREE &amp; ANTIPUMP SCHEM</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BREAKER TRIP FROM RELAYS</td>
<td>A</td>
<td>COUNTER AS LEFT</td>
<td>167</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ELECTRICAL TEST

CONTACT RESISTANCE

(MICROMS)

<table>
<thead>
<tr>
<th>A-PHASE</th>
<th>B-PHASE</th>
<th>C-PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 100 AMPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>95</td>
<td>105</td>
</tr>
</tbody>
</table>

INSULATION RESISTANCE (CLOSED)

(OHMS)

<table>
<thead>
<tr>
<th>A-G</th>
<th>B-G</th>
<th>C-G</th>
<th>A-B</th>
<th>B-C</th>
<th>C-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;11GΩ</td>
<td>&gt;11GΩ</td>
<td>&gt;11GΩ</td>
<td>&gt;11GΩ</td>
<td>&gt;11GΩ</td>
<td>&gt;11GΩ</td>
</tr>
</tbody>
</table>

VACUUM INTEGRITY BREAKER (OPEN)

(Pass/Fail)

<table>
<thead>
<tr>
<th>A-PHASE</th>
<th>B-PHASE</th>
<th>C-PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 37.5 kVDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
</tr>
</tbody>
</table>

COMMENTS
# RTS Relay Test Results

<table>
<thead>
<tr>
<th>Lib Routine: SEL-351.FST_LIB</th>
<th>AF/AL: AL</th>
<th>Pass/Fail: PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lib Version:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Relay Data:**

- **Tested_By:** Jon Thompson
- **Substation:** Rock Hill
- **Phase_ZONE:** Breaker #3
- **Relay_Type:** SEL-351
- **Serial_Number:** Z08006-D200880103
- **Relay_TD:** 0
- **Previous_TestDate:** 5/10/2016
- **Approved_By:**

**Global Defines:**

- SET_GROUP="1" 
- CONTACTS="101" 
- SEL_AUTO=1 
- SKIP_TST=1 
- NO_TOE=1 
- PRINT_RAN_TESTS=0 
- DIR_TEST_VOLTS=30 
- NORM_VOLTS=67 
- NORM_FREQ=60 
- ZONE_TEST_AMPS=2.5

**Routine Notes:**

**Relay Settings Used for Testing:**

```
RIDS= "BREAKER # 3 DEL 5" TIDS= "SER # 17- 14864" CTR= 120
CTR= 120
VNOE= 67.00
ZOMAG= 1.00
E50P= 1
E50Q= "N"
E51P= 1
E51Q= "N"
E61S= "N"
E61Q= "N"  
E79S= 9.00  
S79PID= 2.00  
S79GLD= 2.00  
S1PTD= 1.18  
S1GCS= "U4"  
S79RSD= 3600.00  
CNDEMS= "OFF"  
DNTC= 1.5  
GDEMP= 0.50  
EDBS= "OFF"  
SV1PD= 0.00  
SV2PD= 0.00  
SV4PD= 0.00  
```
### Relay Test Results for: 67P1D DELAY (67P1T)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>67P1D DELAY (67P1T) (Phase A-N)</td>
<td>MULTIPLE</td>
<td>1.20</td>
<td>18.000</td>
<td>0.056</td>
<td>3.38</td>
</tr>
<tr>
<td>67P1D DELAY (67P1T) (Phase B-N)</td>
<td>MULTIPLE</td>
<td>1.20</td>
<td>18.000</td>
<td>0.056</td>
<td>3.36</td>
</tr>
<tr>
<td>67P1D DELAY (67P1T) (Phase C-N)</td>
<td>MULTIPLE</td>
<td>1.20</td>
<td>18.000</td>
<td>0.056</td>
<td>3.35</td>
</tr>
</tbody>
</table>

### Relay Test Results for: 50G1P PICKUP (50G1)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pickup</td>
<td>Current</td>
<td>Ideal</td>
<td>% Error</td>
<td>OK?</td>
<td></td>
</tr>
<tr>
<td>5.0000</td>
<td>0.0000</td>
<td>5.0000</td>
<td>-0.00</td>
<td>PASS</td>
<td></td>
</tr>
</tbody>
</table>

### Relay Test Results for: 67G1D DELAY (67G1T)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>67G1D DELAY (67G1T)</td>
<td>MULTIPLE</td>
<td>1.20</td>
<td>9.0000</td>
<td>0.055</td>
<td>3.31</td>
</tr>
</tbody>
</table>

### Relay Test Results for: 51PP PH PICKUP (51P)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>Pickup</td>
<td>Current</td>
<td>Ideal</td>
<td>% Error</td>
<td>OK?</td>
</tr>
<tr>
<td>A-N</td>
<td>5.0000</td>
<td>5.0000</td>
<td>0.00</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>B-N</td>
<td>5.0000</td>
<td>5.0000</td>
<td>0.00</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>C-N</td>
<td>5.0000</td>
<td>5.0000</td>
<td>0.00</td>
<td>PASS</td>
<td></td>
</tr>
</tbody>
</table>

### Relay Test Results for: 51P PH TIMING (51PT)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>51P PH TIMING (51PT) (Phase A-N)</td>
<td>MULTIPLE</td>
<td>2.00</td>
<td>10.0000</td>
<td>136.75</td>
<td>2.279</td>
</tr>
<tr>
<td>51P PH TIMING (51PT) (Phase B-N)</td>
<td>MULTIPLE</td>
<td>3.00</td>
<td>15.0000</td>
<td>53.72</td>
<td>0.895</td>
</tr>
<tr>
<td>51P PH TIMING (51PT) (Phase C-N)</td>
<td>MULTIPLE</td>
<td>4.00</td>
<td>20.0000</td>
<td>30.57</td>
<td>0.509</td>
</tr>
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</table>

### Relay Test Results for: 51GF GND PICKUP (51G)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
<th>Time (sec)</th>
<th>Time (CY)</th>
<th>Range</th>
<th>OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pickup</td>
<td>Current</td>
<td>Ideal</td>
<td>% Error</td>
<td>OK?</td>
<td></td>
</tr>
<tr>
<td>2.4750</td>
<td>2.5000</td>
<td>0.00</td>
<td>-1.00</td>
<td>PASS</td>
<td></td>
</tr>
</tbody>
</table>

Print Date: 16-Jul-2013  Page 4 of 5
OIL ANALYSIS

DATE PRINTED: 12/23/2008

TC# 17

NAMEPLATE DATA

Manufacturer: KUHLMAN
Kit: 10/10/2007
Serial No.: 974076-2
KVA Rating: 20,000
Primary Voltage: 108,000 V
Secondary Voltage: 24,940 V
Weight: 111,912 lbs

Equipment Type: TRANSFORMER
Transformer Class: ONAN/NAR
Impedance %: 9.15
Phase/Cycle: 3/60
Liquid Type: OIL
Gallons: 4.220
Other Access:

ADDITIONAL EQUIPMENT

Radiators: Yes
Conservator Tank: No
Fans: Yes
LTC Compartment: No
Water Cooled: No
Bushing Location: Top
Oil Pumps: No
Breather: N2 System
Top PPV: 2.00 in
Hose Length: 200 ft
Bottom PPV: 2.00 in
Service Online: No
Insulation Type: 55 C
Power Available: No

VISUAL INSPECTION

DATE  LEVEL  SAMPLE  TOP  TEMP  PV  PAINT  LEAKS
12/08/2008  NORMAL  0  1.00  GOOD  NONE

FIELD SERVICE

DATE  SERVICE

LIQUID SCREEN TEST DATA

DATE  SERVICE  ACID  IFT  DIEL 877  DIEL 1816  COLOR  SP.GRAV.  VISUAL  SEDIMENT
12/08/2008  0.020 AC  41.0 AC  44 AC  0.50 AC  0.890 AC  CLEAR AC  NONE AC

INHIBITOR CONTENT

DATE  PCT. BY WEIGHT
12/08/2008  0.318% AC

LIQUID POWER FACTOR

DATE  25 C  100 C
12/08/2008  0.055 AC  0.927 AC

NOTE: THIS UNIT HAS A CONSERVATOR OR CONTINUOUS N2 SYSTEM, THEREFORE THE UNIT DOES NOT REQUIRE INHIBITED OIL. HOWEVER, HAVING INHIBITED OIL WILL PROVIDE ADDITIONAL PROTECTION AGAINST OIL OXIDATION IF THE CURRENT OIL PRESERVATION SYSTEM WERE TO EVER FAIL.

KEY TO ABBREVIATIONS: AC – ACCEPTABLE  QU – QUESTIONABLE  UN – UNACCEPTABLE