REQUEST FOR PROPOSAL

ELECTRICAL ARC FLASH HAZARD ANALYSIS

INTRODUCTION:

An AFHA (Arc Flash Hazard Analysis) is required for certain facilities owned and operated by the City of Roseville. These facilities include:

- Pleasant Grove Wastewater Treatment Plant
- Dual Purpose Pumping Station
- Five Municipal Water Wells
- Thirteen Wastewater Lift Stations
- Five Stormwater Lift Stations
- Recycled Water Pumping Facility

The purpose of the study is to determine the risk of an arc flash at each facility and develop recommendations for improvements that may be made at each facility to reduce or eliminate the risks.

BACKGROUND:

The City of Roseville owns and operates two wastewater treatment facilities and a water treatment facility serving City of Roseville residents and some of the surrounding territories. The Environmental Utilities Department also maintains thirteen sewage lift stations, five municipal water wells, five storm water lift stations, potable water pumping facility, recycled water storage and pumping facilities and nearly a thousand miles of water and wastewater piping systems.

PROJECT REQUIREMENTS:

The following is a list of tasks to be performed in the course of this project:

1. Attend a project commencement meeting.

2. Perform visits to each site to gather needed data to conduct the analysis. Populating databases will be the responsibility of the Contractor as required by the software application.

    - The PGWWTP is currently the only site with a comprehensive set of accurate up to date single-line drawings and time-current curves.
    - The remaining facilities do not have accurate up to date single line drawings available. It is the responsibility of the contractor to gather all necessary information needed to complete the arc-flash hazard analysis.

- Activities necessary for determining cable sizes, cable lengths, fuse sizes, fuse characteristics, transformer sizes, transformer impedances or any other information necessary to complete an accurate arc-flash hazard analysis is the responsibility of the contractor.
- All of the facilities being analyzed under this proposal are active facilities; any outages that are required to accomplish data gathering will require a minimum of five working days notice to the City of Roseville prior to the outage.
- A City of Roseville technician will be available from 7:30 to 4:30 on weekdays to guide the contractor's data gatherer to each location and open enclosures as required. A City of Roseville technician must accompany contractor personnel while at any City facility.
- Available information is provided in Appendixes A through D.

3. Perform inspection and review of each electrical distribution system to determine compliance with applicable NEC, NFPA-70E, IEEE-1584A and OSHA standards as they relate to arc-flash hazards.

4. Perform an arc-flash hazard analysis of each electrical system using an industry accepted computer program. It is recommended that the SKM Power Tools arc-flash analysis software be utilized. Utilize IEEE 1584A guidelines to perform calculations.

5. The results of the study shall include the following parameters for each individual piece of electrical distribution equipment evaluated during the study:

   - Arcing fault magnitude
   - Device clearing time
   - Determine bolted-fault currents
   - Determine arc-fault currents
   - Duration of arc
   - Arc flash boundary
   - Working distance
   - Incident energy for each location
   - Required fire resistant clothing
   - Equipment Labels displaying Hazard Level, Arc Flash Boundary, Incident Energy Range, and Location or per current NFPA 70E and IEEE 1584A

   Upon Completion of the project this data shall be provided in the original software application format plus 2 hard copies.

6. Provide arc-flash labels required for individual electrical equipment based on OSHA and NFPA guidelines and the arc-flash hazard levels identified.

7. Provide specific Personal Protective Equipment (PPE) guidelines for each Switchgear and Motor Control Center location.

8. Provide specific recommendations on electrical operating and maintenance practices to minimize the risks associated with arc-flash.

9. Report and Presentation – The report will include specific recommendations or procedures to mitigate or reduce arc-flash hazard levels such as relay setting changes, fuse changes or other mitigating measures for each location being analyzed. Submit 2 copies of Draft Report, and provide 4 copies of Final Report.

10. Provide arc-flash hazard training to facility operations and administrative staff who will be working in vicinity of electrical equipment. Training will provide site specific references as they relate to the City of Roseville's facilities being studied; generic training topics are not acceptable. This session should be oriented to provide specific safety training for the worker whose job responsibilities do not include working on or near live, energized conductors but who may be required to perform switching and disconnection of electrical equipment using breakers, switches and disconnects. These staff members may not be knowledgeable of detailed electrical terminology. Submit training syllabus to Owner for approval at least 3 weeks prior to intended date of training. Training session and student handouts will be provided for 25 attendees. Video taping of the training session will be conducted for use by the City of Roseville to train employees unable to attend the scheduled training session.

11. Provide arc-flash hazard training to qualified electrical personnel who will be working on or near live, energized electrical conductors and equipment. Training will provide site specific references as they relate to the City of Roseville's facilities being studied; generic training topics are not acceptable. Submit training syllabus to Owner for approval at least 3 weeks prior to intended date of training. Training session and student handouts will be provided for 25 attendees. Video taping of the training session will be conducted of the training session for use by the City of Roseville to train employees unable to attend the scheduled training session.

12. Provide (1) electronic copy of all arc hazard analysis data and software as utilized to conduct the Arc Flash Hazard analysis on the electrical systems to the Owner. Software shall be licensed directly to the City of Roseville. The electronic copy must be able to be imported directly into a SKM modeling tool or approved equal.

PROPOSAL GENERAL REQUIREMENTS AND CONTENTS

Proposals submitted for this project are to follow the outline described below and must address all requested information. Any additional information that the firm wishes to include that is not specifically requested should be included in an appendix to the proposal. Firms are encouraged to keep the proposals brief and to the point, but

sufficiently detailed to allow evaluation of the project approach ensuring compliance with all elements of the RFP.

PROPOSAL OUTLINE

Section 1 Project Understanding and Special Project Considerations (8 page maximum)

Provide a narrative description of the project based on your proposed Scope of Work and information gathered about the project. Include any issues that you believe will require special consideration for this project. Also identify any unique approaches or strengths that your firm may have related to this project. City staff will assess your understanding of all aspects of the project based on the overview.

Section 2 Project Team (5 page maximum)

Include a one page organization chart listing all key project firm members. Identify all key member roles, availability, qualifications and responsibility for the project. Resumes for all key members shall be provided within an appendix. All subcontractors will be identified along with tasks assigned to them. If any team member has been cited for violations of OSHA Standards and Requirements within the past 5 years then an explanation and status of the violation shall be provided. Provide the license number, and expiration date for the Engineers California registration. Provide a minimum of three (3) owner references of similar projects.

Section 3 Detailed Scope of Work (15 page maximum)

Provide a detailed description of the tasks and duties required to implement this scope of work. The scope of work shall include all necessary equipment, materials, and labor to conduct the work as well as a listing of all assumptions made (by work task) including anticipated level of work assistance to be provided by the City (assume one qualified technician will be available for assistance during data gathering). Also, identify any unique approaches or strengths that your firm may have related to this project.

Section 4 Conflicts of Interest (1 page maximum)

Entities submitting a Proposal in response to this RFP must disclose any actual, apparent, direct or indirect, or potential conflicts of interest that may exist with respect to the firm, management, or employees of the firm or other persons relative to the services to be provided under the Agreement for services to be awarded pursuant to this RFP. If a firm has no conflicts of interests, a statement to that effect shall be included in the Proposal.

Section 5 Proprietary Information (1 page maximum)

Entities submitting a Proposal in response to this RFP must provide a statement that nothing contained in the submitted proposal will be proprietary. All proposals shall become the property of the City once submitted.

Section 6 Non-Collusion Affidavit

Only one Proposal from an individual firm, partnership, joint venture (or individual members of a joint venture), or corporation, under the same or different names, will be considered. Should it appear to OWNER that any member is interested in more than one Proposal for the Work contemplated, all Proposals in which such member is interested will be rejected. The design professional proposed for this project will be included in only one Proposal.

Section 7 Signature (1 page maximum)

The proposal shall be signed by an official authorized to bind the contracting firm and shall expressly state the proposal is valid for 90 days.

All names must be typed or printed on the line with the signature.

The address and telephone number of the entities representative for communications regarding the Proposal must be shown.

COST PROPOSAL

In a sealed envelope as a separate document to your Technical Proposal, provide 4 copies of a Cost Proposal listing the individual cost for each task and sub-task. The cost proposal shall be provided in a spreadsheet format to enable the City staff to determine the key project team member(s) proposed for each task and sub-task and the number of management, engineering, technical, drafting. And support personnel hours envisioned for each task. The hourly rate, name of the team member and staff classification shall be included in the column headings of the spreadsheet.

Identify all other costs to billed to the project including project expenses (no mark-up on expenses will be allowed) and sub-contractor fees. Include a copy of the proposed rate schedule to be used throughout the duration of the project.

Provide individual cost per facility for each well, lift station, pumping station or treatment facility.

SELECTION OF CONTRACTOR

The proposals will be screened by a selection committee and rated on:

- Work Plan.
- Understanding of the Project.
- Responsiveness to the RFP.
- Experience and qualifications of the firm, project manager, key personnel, and subcontractor qualifications on similar projects.
- Information obtained from references.

If a firm cannot be selected based solely on the proposals submitted, up to three firms submitting the most highly rated technical proposals will be invited for interviews during the week of January 9th, 2006. The proposed project manager must be present at the interview; up to four others may attend at the discretion of the firm. After this process, the firms will be ranked and the firms notified. City staff will then enter into cost negotiations with the highest rated firm. Following successful negotiations, a recommendation will be made to Roseville City Council to award the contract. In the event that cost negotiations are not successful, staff reserves the right to enter into negotiations with other ranked firms.

QUALIFICATIONS:

The contracting firm and personnel supplying these services shall have the following minimum qualifications:

1. The project manager shall be a licensed professional electrical engineer in the state of California and shall be responsible for the work product.

2. The project engineer performing the studies and analysis shall be a licensed professional engineer.

3. A General Journeyman Electrician certified by the Division of Apprenticeship Standards in the State of California or a 'Qualified' technician per NFPA-70E shall perform the data gathering.

4. The firm performing these services will have previous experience in conducting coordination studies or arc-flash hazard analysis for water or wastewater treatment facilities.

5. The firm performing these services shall have experience in performing arc-flash hazard analyses and should be knowledgeable with Personal Protective Equipment requirements of NFPA 70E and IEEE 1584A.

6. The firm proposing shall provide three references where arc-flash hazard analysis was conducted by their organization. Include a brief summary of work performed, customer contact information for each of the references as related to this RFP.

These qualifications shall be clearly stated in the proposal.

PROJECT SCHEDULE:

The proposal shall provide a project schedule showing key project milestones and deliverables. The schedule shall demonstrate your firm's ability to meet the designated milestones listed below. Assumptions used in developing the schedule shall be identified.

1. Proposal Due Date: December 30, 2005
2. Contract Award Date: February 1, 2006
3. Notice To Proceed Date: February 15, 2006
4. Proposed Kick-off meeting:
5. Phase I Report due date:
6. Phase I Report Presentation date:
7. Site Electrical Safety Training dates:
8. Project completion date:

PROJECT DOCUMENTS:

The following documents are included as Appendixes A through D in electronic form to assist the firm in preparation of their bids:

Appendix A

Plant Electrical Single Line Diagrams for the 12 kV and 480 Volt systems for Pleasant Grove Wastewater Treatment Plant. The City has not verified the accuracy of these drawings.

Appendix B

Time Current Curves performed on SKM Power Tools using Captor and Dapper and 480 Volt relay settings are available for the PGWWTP site. A CD is available upon request by the individual bidding entities. Verifying completeness of the information contained on the CD is the responsibility of the firm.

Appendix C

Partial plant Coordination studies for the Recycled Water pumping station in PDF format. Data in the raw format is unavailable for this site.

Appendix D

Source impedance data is available from Roseville Electric for specified sites. Specific Roseville Electric contact information will be provided to the successful firm.

Appendix E

Addresses for Arc Flash sites with Thomas Guide map page cross-references.

MANDATORY PRE-BID MEETING AND JOB WALK:

A mandatory pre-bid meeting and job walk is scheduled for December 14, 2005. Bidding firms are required to have a representative from their organization in attendance for this meeting.

Date: December 14th, 2005
Time: 8:00 A.M. through 5:00 P.M.
Location: Pleasant Grove Wastewater Treatment Plant
Conference Room
5051 Philip Road
Roseville, Ca 95678

QUESTIONS:

Questions regarding this project must be received in writing by letter or e-mail on or before December 21st, 2005.
No questions will be answered by telephone. Faxed letters are acceptable.

Address written questions to:

City of Roseville
Department of Environmental Utilities
1800 Booth Road

Roseville, CA 95747
Attn.: Charles Aycock
Email: caycock@roseville.ca.us
Fax: (916) 746-1853

SUBMITTAL OF PROPOSAL

Four copies of the proposal shall be sent to:

City of Roseville
City Clerk's Office
311 Vernon Street
Roseville, CA 95678
Attn: Charles Aycock – Arc/flash Proposal

The deadline for submittal is 3:00 P.M. Late proposals will not be accepted.