

REQUEST FOR PROPOSAL

DYNAMIC SYSTEM MODELING AND ANALYSIS

FOR THE

CITY OF COLUMBIA, MISSOURI

1 SCOPE OF WORK

1.1 GENERAL:

The City of Columbia, Missouri, Water and Light Department is requesting proposals from professional engineering firms, or equally qualified organizations, to assist the City in local and regional electric transmission dynamic system modeling and transient analysis for stability. To ensure continued compliance with NERC standards, it is required that the City conduct a dynamic study and analysis in the near future for near-term and long-term planning, and to identify any possible Critical Assets. This analysis must meet the requirements set forth in NERC TPL and CIP Standards and will be conducted for a near-term (1-5 years) and long term (6-10 years) study.

1.2 COMPLIANCE AND MODELING SUPPORT:

- A. Review the most up-to-date NERC and SERC Compliance measures and identify any new requirements compared to CWLD's existing compliance methods.
- B. Review CWLD's existing electric system conditions and determine the conditions to be studied for this year's dynamic planning studies that are pertinent to the operation of the CWLD facilities, including, but not limited to:
 - i. Working with City staff to make corrections or fill in missing information in the planning models as necessary for dynamic, short circuit, and power-flow modeling purposes
 - ii. Review/revise voltage schedules for generator or transformer LTC control
- C. DELIVERABLES: None

1.3 DYNAMIC MODEL BUILDING:

- A. Build dynamic models for CWLD system in seasons:
 - i. 2019 Light Load
 - ii. 2019 Summer Peak
 - iii. 2019/20 Winter Peak
 - iv. 2020 Summer Peak
 - v. 2023 Light Load
 - vi. 2023 Summer Peak
 - vii. 2023/24 Winter Peak
 - viii. 2028 Summer Peak
 - ix. 2028/29 Winter Peak
- B. DELIVERABLES: all models and files associated with models in PSS/E version 33 compatible format

1.4 DYNAMIC SYSTEM STABILITY STUDIES

- A. Studies will meet the requirements of the SERC Transmission Planning requirements as outlined in TPL-001-4.
- B. DELIVERABLES: Generator rotor angle / voltage and frequency spreadsheets and plots

1.5 ANALYSIS OF RESULTS

- A. ENGINEER will prepare a report of the findings of the stability studies with a detailed analysis. Report will include recommendations for stability, or indicate if none are necessary, and will identify critical assets if any exist.
- B. DELIVERABLES: Final analysis report

1.6 DESCRIPTION OF FACILITIES

The City of Columbia owns and operates a municipal electric utility that supplies power to approximately 50,700 customers in and around the City, and expects a peak load of 363 MW in the summer of 2019. The utility owns and operates generating stations, with expected peak generation of 208 MW for the summer of 2019, though actual capacity is higher. The utility interconnects to the transmission grid at 161 kV and 69 kV. The City internal transmission network includes 69 kV and 161 kV, and eight ties to neighboring utilities.

1.7 SERVICES PROVIDED BY THE CITY

During the course of the work, the City will assist the Engineer by compiling and/or furnishing the following described services when and as required for the orderly completion of the work:

- A. Assist Engineer by placing at Engineer's disposal available information pertinent to the assignment including previous reports and other data relative thereto.
- B. Examine all studies, reports, sketches, estimates, Bid Documents, Drawings, proposals and other documents presented by Engineer and render in writing decisions pertaining thereto in a timely fashion.
- C. Give prompt written notice to Engineer whenever City observes or otherwise becomes aware of any defect in the PROJECT

2 TECHNICAL PROPOSAL

2.1 VENDOR INFORMATION:

Provide a brief description of the firm, including when and where incorporated, major business activities, and a listing of officers of the company. State whether the firm is local, regional, or national and how long the firm has been in existence under current ownership/management.

Provide information about your firm to include:

- A. Name, address, phone and fax number(s) and email address of firm
- B. Name and title of primary contact person
- C. Date firm established
- D. Qualifications and background of the firm
- E. A summary of any arrangements that will be made with any other firm for assistance on the work.

2.2 EXPERIENCE

The offeror shall demonstrate past performance related to the scope of work. The offeror shall provide a list of similar work performed for other municipalities or agencies, including a description of work and the name of the municipality or agency, and the action taken as a result of the work. The offeror shall also provide a minimum of five (5) contract references both for itself and for any major subcontractor to enable the City to assess the quality of the offeror's, and any major subcontractor's, past performance. The referenced contracts shall be similar in scope, magnitude and complexity to that contemplated in this RFP. The following information shall be included for each contract:

- A. Name and address of contracting activity, municipality, state or local government agency or commercial customer

- B. Action taken and contract type
- C. Contract value
- D. Brief description of services required under the contract, including performance location(s) and performance period
- E. Name, telephone number, and e-mail address of individual able to provide information about offeror's past performance.

2.3 PROJECT DETAIL

Provide a detailed description of the proposed solution. At a minimum the description should include or provide;

- A. Narrative of Scope of Work and services proposed.
- B. A list of key personnel to be involved in the work.
 - i. A statement outlining the scope of staff resources and range of specialties offered by you firm.
 - ii. A statement describing the responsibilities and degree of participation of each professional staff member who will be assigned to the project along with resumes describing relevant previous experience.
- C. Discussion explaining why the firm believes the City of Columbia would benefit from selecting the firm to do the work.
- D. Present the management approach to be followed and the management techniques required for implementation and control of the work. At minimum address and include a service start-up plan and schedule.
- E. Describe any activities required from the City of Columbia employees.
- F. Provide examples of your project documentation and deliverables.
- G. Surveying and data analysis methodology with examples of surveys and reports (if applicable).
- H. Describe any other benefits the City will realize through a contract with your firm.

2.4 PRICING TO BE QUOTED

Cost/Price should be broken out and clearly separated from the rest of the proposal.

The City will evaluate cost/price for reasonableness, completeness, and realism as appropriate. Proposers are asked to submit detailed budgets by task and in summary format. The task budget for each task should present a breakdown of number of hours and fully loaded hourly rates by firm, position and name.

The costs/prices included in the proposal should include all items of labor materials, and other costs necessary to perform the contract. Any items omitted from this RFP which are clearly necessary for the completion of the work being proposed should be considered part of the work though not directly specified or called for in this RFP.

The City anticipates awarding a fixed price contract.

3 EVALUATION AND AWARD

3.1 EVALUATION

Evaluation of the respondents qualifying as finalists will be based on the following criteria:

- 25 points Qualifications of the firm
- 25 points Project Detail
- 25 points Experience/References
- 15 points Ability to provide the services outlined in the Scope of Work
- 10 points Quality of the proposal