

Invitation for Proposals

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**OVERHEAD LINE DESIGN ISSUES & WIND AND ICE STORM MITIGATION
INTEREST GROUP (WISMIG)**

CEATI PROJECT No. T103700-3369

GUIDE TO RECONDUCTORING AND UPRATING TRANSMISSION LINES

CEATI International Inc. (CEATI) invites the submission of proposals to perform research work on the following topic:

TITLE

Guide to Reconductoring and Uprating Transmission Lines

INTRODUCTION

With the advent of new technological developments, society's dependence on electric power is continuously increasing. The increase in power demand brings with it the need to increase power transmission capacity from the generating point to the delivery point. In the past, the need for additional power transmission was achieved by building new transmission lines. However, building new transmission lines and obtaining new right of ways has become increasingly difficult due to the unavailability of the land and other socio-economic factors. Moreover, public opposition to building new transmission lines has increased due to aesthetic considerations and public concern regarding potential health effects of the electromagnetic field (EMF), despite the lack of scientific support for these fears. As a result, the planning procedures for new right of ways are both lengthy and expensive.

Utilities are therefore exploring alternative ways to meet the increasing demand for power by increasing the transmission capacity of their existing transmission network. Reconductoring and uprating existing transmission lines is one such alternative.

The intent of the project is to investigate the best practices for reconductoring and uprating existing transmission lines in the most efficient manner and document these practices in a guide.

PROJECT OBJECTIVES

The objective of this project is to prepare a guide including a discussion of various methods and best practices of reconductoring and uprating transmission lines to increase the power transfer capacity of the existing transmission network. The guide will include recommendations on the method(s) to be used, stating the conditions under which the particular method is most efficient. It will also include case studies supporting the recommendations.

SCOPE OF THE STUDY

To meet the abovementioned objective, it is envisioned that the following tasks would be required:

- Conduct a literature survey to identify the various methods of reconductoring and uprating and practices for their use.
- Conduct a utility survey to determine the condition assessment methods and reconductoring and uprating practices used and to document utility experience with the various methods. (This questionnaire shall be reviewed by the WISMIG monitoring team prior to circulation.)
- Analyze the data collected from the literature search and utility survey and discuss the various methods identified and the conditions governing their application.

- Prepare the guide, including detailed discussions of case studies and recommendations to be considered by utilities planning reconductoring or uprating work.

The guide will address the various methods, their constraints and assessment, and the construction and maintenance issues related to increasing the power transfer capacity of existing lines including the following:

- Increasing maximum operating temperatures
- Probabilistic and dynamic thermal rating
- Reconductoring with and without structural modifications
- Use of meteorological studies for maximum utilization
- Use of high temperature low sag conductors
- Electrical and mechanical feasibility
- Condition assessment of existing lines

The study shall be limited to reconductoring and uprating and **shall not include voltage upgrading.**

POTENTIAL BENEFITS

This study is intended to provide utilities with a guide for determining the most efficient methods for increasing power transmission capacity by reconductoring or uprating.

DELIVERABLES

The primary deliverable shall be a detailed report comprising a comprehensive discussion and compilation of the results of the investigation and including a bibliography and copies of any papers and other information used to reach the conclusions and recommendations stated in the report. The proponent should be prepared to present the results of the work in person at one of the biannual WISMIG meetings.

The successful proponent is expected to prepare a ready-to-publish report on the results of the investigation and present the results to funding consortium members. The completed report must be submitted for CEATI approval in editable, electronic format (Microsoft Word).

Progress reports will also be required on either a quarterly or milestone basis - normally these are scheduled to coincide with the completion of the identified tasks. Progress reports must make reference to the tasks identified in the proposal.

The successful proponent is also expected to provide the following:

- A ten to fifteen (10-15) slide Power Point Presentation. This should be composed of three main sections:

1. The factors motivating the initiation of the work;
2. A description of the main findings;
3. Summary of the conclusions and recommendations for future research.

- Contents for the Project's Technical Brief. This is a summary of the report (between 1,000 and 1,500 words), which is published separately by CEATI. Proponents are not responsible for the preparation of a ready-to-print Technical Brief, but solely to provide the contents for the following 4 sections: Background, Summary, Conclusions and Recommendations.

1. The Report Background section should be short (approximately 200 words) and should detail the reasons the work was conducted.
2. The Summary section should be approximately 700 words. It must provide a general description of the work program.
3. The Conclusions section should be about 150 words and should provide a general outline of the key results (do not include specifics).
4. The Recommendations section should be about 200 words and should include a description of the potential applications of the results.

Please note that all reporting must be submitted in English. If written English is not the author's strong suit, it is recommended that a technical writer be hired to review the document prior to submission.

BUDGET AND SCHEDULE

The proposal must contain a schedule and a quote of required remuneration for the work in US or Canadian dollars. All prices shall be presumed to be in Canadian dollars (CAD) unless explicitly specified otherwise in the proposal. Proponents' responses to this section must include a full breakdown of the budget and schedule, including an indication of rates and hours and the task allocation for the key personnel by task and must correspond to any phases or milestones outlined above. (Please refer to the Proposal Template for more information).

It is expected that this project can be completed (draft final report submitted for review and approval) within nine (9) months of initiation.

The proposal must include the names and qualifications of the key individuals who will be involved, as well as the name of the accountable manager.

CEATI is not bound to accept any proposal but any selection will take into account technical merit, qualifications, price and schedule. A proposal may be accepted in whole or in part. A commitment to proceed with the first phase of a multi-phase project does not automatically imply that the work of the subsequent phases will be undertaken.

ALTERNATIVE WORKS

Proponents shall generally follow the above description of work, but are encouraged to offer alternative works if these alternatives will meet the objectives and provide a better end product to the utilities sponsoring this work. Alternatives shall be fully described including logistics explaining why the alternate works are being offered and the benefits to be realized by the funding utilities. Where alternatives are proposed, separate budgets shall be calculated for each alternative.

SUBMISSION OF PROPOSALS

The proposal shall include a clear and detailed description of the tasks to be completed including the methodology for completing the tasks.

The consideration of proposals received will be limited to those who indicate their intent to employ a suitable experienced project team and who possess proper facilities to perform the work. Receipt of this “IFP” does not necessarily constitute a prior determination by CEATI that your organization has the requisite experience and facilities.

The proposal must be properly completed and executed in accordance with the CEATI guidelines available at <http://www.ceati.com/guidelines.php>, and shall be submitted to CEATI as an attachment in Microsoft Word at the following website: www.ceati.com/private/submissions. Be sure to indicate project number “**T103700-3369**” on the submission form. For assistance, please contact us at 514-866-5377 x 236.

CLOSING DATE FOR RECEIPT OF PROPOSALS

Thursday, April 1st, 2010, 4:00 pm EDT