

Invitation for Proposals

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

CEATI PROJECT No. T123700-3388

**GUIDE FOR THE DESIGN, INSTALLATION, AND REPAIR OF ACSR
CONDUCTOR SPLICES**

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

TITLE

Guide for the Design, Installation, and Repair of ACSR Conductor Splices

INTRODUCTION

In order to meet increasing electric load requirements, transmission utilities sometimes run their conductors at temperatures higher than the normal design temperatures. In such cases the condition of existing connectors (in-span and dead end splices) plays an essential role in the safe operation of lines. Splices/sleeves are end-to-end connections, and they must be able to transmit the maximum conductor electrical load without undue heating and should develop full mechanical strength as per applicable standards. Moreover, materials such as fluxes, inhibitors, and compounds used during installation of splices should be of the type which will not adversely affect the conductors. Mostly two stage or single stage compression and implosive splices are used.

PROJECT OBJECTIVES

The objective of this project is to review the existing practices of splice (both in-span and dead end) design, installation, in-service testing standards, and repair of poor functioning splices and to develop a guide for ACSR conductor splices. The review and guide will include the use of shunts for repair of splices.

SCOPE OF THE STUDY

The project scope entails conducting a detailed review of existing utility practices for splice design, installation procedures, standards for testing splices in service, and repair of defective splices/connectors (including the use of shunts), gathering information regarding splice/connector problems, identifying appropriate temperature ratings for connectors of different types and vintages, proposing improvements to applicable splice testing standards, identifying techniques/materials for repair of splices, and preparing a guide for use by transmission utilities.

The following tasks are envisioned:

- Conduct a critical review of existing practices for splice design, installation procedures, testing standards and their applicability to field conditions, and repair practices for defective splices/connectors (including the use of shunts, etc.).
- Gather information regarding splice/connector problems, including the frequency of such problems, and increase in conductor temperatures over the normal design temperatures through a survey and/or interviews of transmission utilities.
- Analyze the information collected to identify areas for improvement, including recommendations for maximum temperatures for splices giving due consideration to inhibitors used and the type of splice, etc.
- Gather data on the various shunt devices available to investigate their applicability and suitability for splice repairs.

- Prepare a guide for use by transmission utilities and a comprehensive report including the full details of the investigation.

POTENTIAL BENEFITS

This work would provide utilities with improved data for rating transmission lines and should enable improved reliability and/or safer operation of lines and cost savings due to the use of the most cost-effective repair methods.

DELIVERABLES

Project Report:

The primary deliverable will be a comprehensive report including the details of the investigation and a guide providing recommendations for the design of new splices, changes in installation techniques, and improvements in testing standards, as well as guidance on temperature ratings of connectors and recommended techniques for repair of poor functioning splices.

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). In addition, the platform and version should be specified for any software or programs to be developed. Should Excel or Access files be developed, compatibility with version 2003 is required.

Progress Reports:

Progress reports, in reasonable detail, will also be required on either a quarterly or milestone basis—normally these are scheduled to coincide with the completion of the identified tasks. It is expected that the details submitted with the progress reports would also be incorporated into parts of the final project report.

Power Point Presentation:

A ten to fifteen (10-15) slide Power Point Presentation is required to summarize the work. 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.

Technical Brief:

The successful proponent shall prepare the 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 dollars. 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 estimated that the budget for this project would be around \$55,000 USD. It is expected that this project can be completed (draft final report submitted for review and approval) within twelve (12) 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 (as displayed by the description and details presented in the proposal regarding the ways in which the proponent plans to meet the scope and objective of the project), qualifications including relevance of the experience of the proposed project team in undertaking similar work, 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 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/technology-providers/submission-guidelines>, and shall be submitted to CEATI as an attachment in Microsoft Word at the following website: <http://prs.ceati.com/proposals/>. Be sure to indicate project number “**T123700-3388**” on the submission form. For assistance, please contact us at 514-866-5377.

The successful proponent will be required to sign the CEATI Standard Agreement upon project initiation. Proponents are encouraged to download a copy of the Standard Agreement for review from <http://www.ceati.com/technology-providers/submission-guidelines> prior to submitting a proposal, if they are not already familiar with these terms. Proponents may contact CEATI at projects@ceati.com to discuss any questions or concerns regarding these terms.

CLOSING DATE FOR RECEIPT OF PROPOSALS

~~Thursday, February 9, 2012, 4:00 pm EST~~

Now: Friday, February 17, 2012, 4:00 pm EST