



Request for Proposals

PARSC 019 – Potential Impact of Abandoned Anode Beds

Date: July 11, 2018

Purpose

On behalf of the Pipeline Abandonment Research Steering Committee (PARSC), PTAC wishes to retain the services of a research organization or consulting firm (the Contractor) with demonstrated experience to provide the services described in this document (the Project). Interested parties are invited to submit full proposals according to the specification provided herein.

Background

To slow corrosion to acceptable rates on buried underground structures such as pipelines, piping and pilings; impressed-current cathodic protection (ICCP) systems have been employed in thousands of locations in Western Canada. In their simplest form, these systems consist of a transformer rectifier (TR), an associated anode groundbed(s), and one or more negative bonds or “drains” to the structures intended to be protected. Anode groundbeds are generally composed of a magnesium or zinc compound that is more susceptible to corrosion than the iron in the steel pipe, which is why it can assist with cathodic protection of pipelines against corrosion.

ICCP groundbeds are installed using various types of noble materials and electrically conductive backfill that have been found to produce the most efficient amounts of current while maintaining a reasonable life expectancy. The majority of impressed current anode groundbeds are either dug in horizontally below the frost line or installed at a depth greater than 100 feet to ensure even distribution of the cathodic protection current. A carbon backfill is often placed around the anode to ensure even consumption of the anode and extend the life. In both vertical and horizontal cases, remediation is challenging. Thus, in the majority of cases, the anode and associated inert backfill are abandoned in place when the anode material is consumed to a point where it can no longer supply the necessary current to the intended structure. If left undisturbed, abandoned anode beds would not impact the surrounding environment. However, the possibility exists that they could be accidentally disturbed after abandonment. To address these cases, the current industry standard practice is to drill or dig in a new anode groundbed in the same general vicinity to utilize the existing rectifier and cabling. The old retired groundbed is disconnected and backfilled, or simply abandoned in place.

Project Objective

The project objective is to take the first step towards providing companies with a defensible best practice procedure for anode groundbed installations and abandonment. By collecting relevant information on anode abandonment and groundbed installation and abandonment,



this study will provide a foundation for future best practices to be built off of and provide a resource for companies to inform regulators and property owners upon request.

Project Scope

The Contractor will complete a conceptual environmental or engineering study of the potential impact of disturbing depleted anode beds which will include risk management recommendations that can be used for the preparation of a best management practice on the subject. To complete the study, the Contractor will perform a thorough search and compilation of relevant documentation on anode abandonment and environmental concerns related to groundbed installations and abandonment in the form of a final report. The final report will be used to inform PARSC and future best practices.

Reporting and Payment Milestones

The Contractor will provide short monthly status reports and will be available to teleconference with PARSC during its meetings, which are generally held every 6 weeks. The applicant will also propose major project milestones when the Contractor will provide a progress report about deliverables and PTAC will make progress payments.

Deliverables

1. Status and progress reviews with PARSC
2. Draft reports at each project milestone identified
3. Final report and presentation to PARSC

Budget

The applicant will indicate the cash budget and any other resources required to complete the Project. The anticipated future best practice preparation that may follow completion of this RFP is entirely separate from this RFP scope. This Project is only concerned with gathering relevant research on anode abandonment and environmental concerns related to groundbed installations and abandonment and summarizing it in a final report.

Confidentiality and Indemnity

The Contractor will be required to sign an agreement related to the project that will contain a confidentiality clause. Disclosure of any project information will be at the discretion of PARSC. It is intended that key results and outcomes will eventually be made public. As PTAC will only facilitate PARSC decisions, the agreement will also contain an indemnity in favour of PTAC.

Intellectual Property

All intellectual property rights and publication rights for the deliverables and reports produced by the Contractor in this project (but not including Contractor models and tools) will be the property of the funding organizations in PARSC.



RFP Schedule

July 11, 2018	RFP issued
August 7, 2018	Deadline for receipt of Full Proposals by PTAC (4:00 PM MDT)
August 22, 2018	Invitation to a short list of applicants to present and discuss their full proposal with PARSC
By September 12, 2018	Meeting of shortlisted applicants with PARSC
By September 26, 2018	Selection of the best value proposal by PARSC

Selection Process

The PTAC facilitated Pipeline Abandonment Research Steering Committee, composed of industry stakeholders with relevant expertise pertaining to pipeline abandonment, makes all decisions pertaining to RFP selection. PTAC facilitates Steering Committee proceedings but is not a decision-maker.

All submitted proposals will be provided to the Steering Committee for review. The Steering Committee will determine if proposals meet the requirements herein and provide an overall ranking based on Contractor qualifications and on proposal quality. The Steering Committee will make the final decision regarding the awarded contract.

Once a selection of the best proposal according to the Steering Committee has been made, all submission contacts will be notified by email of the regarding the outcome of their individual proposal. The project final report will be shared on the PTAC website upon completion of the project.

Contents of Full Proposals

The requested full proposal should contain a detailed Project description, budget and schedule which would be used as the basis of a contract. A 5 to 10 page document addressing the following elements must be delivered electronically or by mail to PTAC by the deadline stated above:

- Scope of work
- Methodology
- Deliverables
- Schedule
- Personnel assigned to the project
- Qualifications
- Budget and costs, including information on breakdown by major scope element and allocation of personnel and applicable rates
- Milestone payment information



The page count does not include any attachment such as CVs, company description or literature references that the applicant may wish to include.

Contact Information

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Attachment 1 - PARSC Program Background

Pipeline abandonment refers to the permanent removal from service of a pipeline. Depending on a number of factors, sections of pipeline may be abandoned in place or removed.

CEPA, the National Energy Board (NEB), the Alberta Energy and Utilities Board (AEUB) and the Canadian Association of Petroleum Producers (CAPP) have collaborated on technical and environmental issues associated with pipeline abandonment, which issues were discussed in the documents referenced below. In 1996, the NEB published a review document titled "Pipeline Abandonment – A Discussion Paper on Technical and Environmental Issues". In 2007, CEPA published a report titled "Pipeline Abandonment Assumptions" which discussed technical and environmental considerations for development of pipeline abandonment strategies. A comprehensive review was undertaken by the NEB as part of the Land Matters Consultation Initiative (LMCI) which involved four discussion papers on the different topic areas, 45 meetings and workshops in 25 communities across Canada, and written submissions from 13 parties. The final LMCI report¹, published in 2009 recommended that knowledge gaps on the physical issues of pipeline abandonment be addressed. Thus, Det Norske Veritas (DNV) was commissioned to conduct a literature review regarding the current understanding worldwide with respect to the physical and technical issues associated with onshore pipeline abandonment and use the results of the literature review to critically analyze and identify gaps in current knowledge, and make recommendations as to potential future research projects that could help to fill those gaps. DNV published this Scoping Study in November 2010.

CEPA and PTAC have established the Pipeline Abandonment Research Steering Committee (PARSC) as a framework for collaboration to guide and direct innovation and applied research, technology development, demonstration, and deployment in order to address knowledge gaps summarized in the DNV Scoping Study.

Research findings from the PARSC projects will be shared on a broad scale throughout the pipeline industry, the oil and gas industry, as well as with regulators, government agencies, and other stakeholders.

¹ Online at http://publications.gc.ca/collections/collection_2010/one-neb/NE23-152-2009-eng.pdf