REQUEST FOR PROPOSALS (RFP)

Assessment of Corrosion Control Treatment (CCT) Pipe Rig Study Data Compared to Distribution System Lead Levels (5299)

Date Posted
Monday, September 9, 2024

Due Date
Proposals must be received by 3:00 pm Mountain Time on Thursday, November 14, 2024

WRF Project Contact
Jian Zhang, PhD, PE, jzhang@waterrf.org

Project Sponsors
This project is funded by The Water Research Foundation (WRF) as part of WRF's Research Priority Program.

Project Objectives
- Assess the degree to which data generated from pipe rig studies represent full-scale distribution system conditions.
- Identify potential variables contributing and not contributing to significant disparities between pipe rig and system results compared to systems where pipe rig and full-scale results are similar.
- Provide guidance on interpreting and applying pipe rig study results to full-scale system implementation, considering their implications for costly and potentially permanent corrosion control treatment (CCT) decisions.
- Provide context for management, regulator, and public expectations of the results for recommended changes in treatment.

Budget
Applicants may request up to $150,000 in WRF funds for this project.

Background and Project Rationale
Pipe rig studies using harvested lead service lines are considered the best corrosion control study tool available. Many utilities have been conducting complex, costly, and time-consuming pipe rig studies in preparation for compliance with the Lead and Copper Rule Revisions (LCRR) and Lead and Copper Rule Implementation (LCRI) requirements. Furthermore, many more utilities are expected to conduct such studies, as both rules require the use of pipe rigs using harvested lead service lines to evaluate CCT if certain triggers are met.

WRF project 5081 has recently published 'fit-for-purpose' guidance on the drivers, design, operations, costs, and approaches for data analysis for pipe rig studies. The manual discusses advantages, disadvantages, and limitations of various pipe rig configurations, as well as statistical tools that can be used to compare one condition to another. Therefore, additional information and guidance on conducting a pipe rig study is not necessary. Rather, there is a need for further assessment of newly available pipe rig data in comparison to full-scale system data to ensure appropriate interpretation, comparison, and application of pipe rig results to the full-scale system.

As more data become available from pipe rig studies, it is becoming more common to observe significant differences in the lead levels collected from the pipe rigs compared to full-scale distribution system results. Lead levels in pipe rigs can be approximately three to six times higher than lead levels measured in full-scale systems. This can overstate the actual lead levels experienced in homes with lead service lines and confound treatment decision making. There are likely various chemical, physical, mechanical, sampling, and/or hydraulic variables between the pipe rigs and full-scale systems that contribute to these observed differences. However, water systems will only implement chemical modifications. Consequently, it is unclear how well lead reduction levels associated with a particular chemical strategy at a specific dosage derived from a pipe rig study may translate to full-scale lead reductions.

Utilities are making crucial Optimal Corrosion Control Treatment (OCCT) decisions based on pipe rig studies, and in most cases, regulatory agencies must approve study results and recommendations. Given the significant financial and operational implications of pipe rig studies and the subsequent costs of full-scale treatment changes, it is essential to critically evaluate how well these studies reflect full-scale distribution system conditions and the appropriate degree of specificity that should be applied to pipe rig study results. Recognizing the importance of any significant treatment change and the regulatory and public perception issues with decisions related to lead, making appropriate data-based, defensible decisions is critical. In addition, there needs to be an assessment as to whether that changes conclusions of the study, even if the pipe rigs indicate much higher lead levels than real life.

Research Approach

- Conduct a robust, comprehensive review and compilation of existing pipe rig, scale analysis, and coupon study data from utilities, including both completed and ongoing studies. Note that the aforementioned "robust" review is intended to include data from a variety of independent sources that would ideally represent a range of population centers across North America.
- Compile and analyze data obtained from pipe rig studies, focusing on parameters such as lead levels, pH, orthophosphate concentrations, type of fittings and pipe, and any other relevant parameters.
- Gather distribution system data from utilities, including compliance data and any other available data sets.

- Review any available data from research pipe rig studies that provide information on differences in operations, design, and typical rig sampling techniques compared to full-scale data collected using current LCR compliance sampling or samples designed to categorize water in contact with service lines.
- Perform statistical analysis to compare the data obtained from pipe rigs with distribution system data and potential impacts on data interpretation.
- Identify discrepancies between datasets and potential causes for discrepancies. Similarly, identify study aspects that reduced or minimized discrepancies.
- Assess the implications of study findings and provide guidance to inform regulatory and utility decisions.

Expected Deliverables

- Final report summarizing the findings of the comparison study, including recommendations for decision-making processes and any potential follow-up studies.
- Guidance materials for utilities on the interpretation and application of data from pipe rig studies.
- Journal article on the findings and recommendations.
- A webinar to share project outcomes with water utility professionals.

Communication Plan

Please review WRF's *Project Deliverable Guidelines* for information on preparing a communication plan. Conference presentations, webcasts, peer-reviewed publication submissions, and other forms of project information dissemination are typically encouraged.

Project Duration

The anticipated period of performance for this project is 18-months from the contract start date.

Proposal Evaluation Criteria

The following criteria will be used to evaluate proposals:

- Understanding the Problem and Responsiveness to RFP (maximum 20 points)
- Technical and Scientific Merit (maximum 30 points)
- Qualifications, Capabilities, and Management (maximum 15 points)
- Communication Plan, Deliverables, and Applicability (maximum 20 points)
- Budget and Schedule (maximum 15 points)

PROPOSAL PREPARATION INSTRUCTIONS

Proposals submitted in response to this RFP must be prepared in accordance with WRF's *Guidelines for Research Priority Program Proposals* and *Instructions for Budget Preparation*. These guidelines contain instructions for the technical aspects, financial statements, indirect costs, and administrative requirements that the applicant must follow when preparing a proposal.

Proposals that include the production of web- or software-based tools, such as websites, Excel spreadsheets, Access databases, etc., must follow the criteria outlined for web tools presented in the *Technology Deliverables Guidance*.

Eligibility to Submit Proposals
Proposals will be accepted from both U.S.-based and non-U.S.-based entities, including educational institutions, research organizations, governmental agencies, and consultants or other for-profit entities.

WRF's Board of Directors has established a *Timeliness Policy* that addresses researcher adherence to the project schedule. Researchers who are late on any ongoing WRF-sponsored studies without approved no-cost extensions are not eligible to be named participants in any proposals. Direct any questions about eligibility to the WRF project contact listed at the top of this RFP.

Administrative, Cost, and Audit Standards
WRF's research program standards for administrative, cost, and audit compliance are based upon, and comply with, Office of Management and Budget (OMB) Uniform Grants Guidance (UGG), 2 CFR Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, and 48 CFR 31.2 Contracts with Commercial Organizations. These standards are referenced in WRF's *Guidelines for Research Priority Program Proposals* and include specific guidelines outlining the requirements for indirect cost negotiation agreements, financial statements, and the Statement of Direct Labor, Fringe Benefits, and General Overhead. Inclusion of indirect costs must be substantiated by a negotiated agreement or appropriate Statement of Direct Labor, Fringe Benefits, and General Overhead. Well in advance of preparing the proposal, your research and financial staff should review the detailed instructions included in WRF's *Guidelines for Research Priority Program Proposals* and consult the *Instructions for Budget Preparation.*

Budget and Funding Information
The maximum funding available from WRF for this project is $150,000. The applicant must contribute additional resources equivalent to at least 33% of the project award. For example, if an applicant requests $100,000 from WRF, an additional $33,000 or more must be contributed by the applicant. Acceptable forms of applicant contribution include cost share, applicant in-kind, or third-party in-kind that comply with 2 CFR Part 200.306 cost sharing or matching. The applicant may elect to contribute more than 33% to the project, but the maximum WRF funding

available remains fixed at $150,000. Proposals that do not meet the minimum 33% of the project award will not be accepted. Consult the *Instructions for Budget Preparation* for more information and definitions of terms.

Period of Performance
It is WRF's policy to negotiate a reasonable schedule for each research project. Once this schedule is established, WRF and its sub-recipients have a contractual obligation to adhere to the agreed-upon schedule. Under WRF's *No-Cost Extension Policy*, a project schedule cannot be extended more than nine months beyond the original contracted schedule, regardless of the number of extensions granted.
Utility and Organization Participation

WRF encourages participation from water utilities and other organizations in WRF research. Participation can occur in a variety of ways, including direct participation, in-kind contributions, or in-kind services. To facilitate their participation, WRF has provided contact information, on the last page of this RFP, of utilities and other organizations that have indicated an interest in this research. Proposers are responsible for negotiating utility and organization participation in their particular proposals. The listed utilities and organizations are under no obligation to participate, and the proposer is not obligated to include them in their particular proposal.

Application Procedure and Deadline
Proposals are accepted exclusively online in PDF format, and they must be fully submitted before 3:00 pm Mountain Time on Thursday, November 14, 2024.

The online proposal system allows submission of your documents until the date and time stated in this RFP. To avoid the risk of the system closing before you press the submit button, do not wait until the last minute to complete your submission. Submit your proposal at https://forms.waterrf.org/cbruck/rfp-5299.

Questions to clarify the intent of this RFP and WRF's administrative, cost, and financial requirements may be addressed to the WRF project contact, Jian Zhang, PhD, PE, at 303.347.6114 or jzhang@waterrf.org. Questions related to proposal submittal through the online system may be addressed to Caroline Bruck at 303.347.6118 or cbruck@waterrf.org.

Utility and Organization Participants

The following utilities have indicated interest in possible participation in this research. This information is updated within 24 business hours after a utility or an interested organization submits a volunteer form, and this RFP will be re-posted with the new information. **(Depending on your settings, you may need to click refresh on your browser to load the latest file.)**

Bina Nayak
Water Research Project Manager
Pinellas County Utilities
6730 142nd Ave N
Largo, FL 33771
727.582.2306
bnayak@pinellas.gov