COORDINATING RESEARCH COUNCIL, INC.
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ALPHARETTA, GA 30022
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WWW.CRCAO.ORG

October 23,0203
In reply, refer to:
CRC Project No. E-137

Dear Prospective Bidder:

The Coordinating Research Council (CRC) invites you to submit a written proposal to provide services for "Fuel Correlation to SimDis Method – Analysis and Reporting" (CRC Project No. E-137). A description of the project is presented in Exhibit A, "Statement of Work."

Please indicate your intention to bid at this link on or before **November 10, 2023** if you or your organization intends to submit a written proposal for this research program. CRC will answer technical questions regarding the Request for Proposal if they are submitted in writing at least one week before the proposal submission deadline here: Q & A Link. CRC will then return written answers to all of the bidders, along with a copy of the original questions. Questions submitted within a week of the deadline may not be answered before the proposal submission deadline.

A CRC technical group composed of industry representatives will evaluate your proposal. CRC reserves the right to accept or reject any or all proposals.

The reporting requirements will be monthly progress reports and a summary technical report at the end of the contractual period. The reporting requirements are described in more detail in the attachment entitled "Reports" (Exhibit B).

The proposal must be submitted as two separate documents. The technical approach to the problem will be described in part one, and a cost breakdown that is priced by task will be described in part two. The cost proposal document should include all costs associated with conducting the proposed program. The technical proposal shall not be longer than 10 pages in length.

CRC expects to negotiate a cost-plus fixed fee or cost reimbursement contract for the research program.

Contract language for intellectual property and liability clauses is presented in Exhibit C and in Exhibit D, respectively.

Important selection factors to be taken into account are listed in Exhibit E. CRC evaluation procedures require the technical group to complete a thorough technical evaluation before considering costs. After developing a recommendation based on technical considerations, the costs are revealed and the recommendation is modified as needed.

Electronic copies of the technical and cost proposals should be submitted to:

Amber Leland
Coordinating Research Council
5755 North Point Parkway, Suite 265
Alpharetta, GA 30022

Phone: 678-795-0506
Fax: 678-795-0509
E-mail: aleland@crcao.org

The deadline for receipt of your proposal is **November 30, 2023**

Yours truly,

Amber B. Leland
Deputy Director

EXHIBIT A

STATEMENT OF WORK
CRC Project E-137: Fuel Correlation to SimDis Method – Analysis and Reporting

Background

Since its introduction in a 2010 SAE paper (2010-01-2115), use of the Particulate Matter Index (PMI) metric in research related to fuel properties and resultant impact on vehicle emissions has become increasingly common. The concept was modified to better evaluate emissions effects of ethanol level in gasoline blends, as described in a series of CRC reports; RW-107-2 An Improved Index for Particulate Matter Emissions (PME) and RW-107-3a Validation of the New PM Index Formula. However, determination of PMI for a given fuel necessitates performing a detailed hydrocarbon analysis (DHA) which, in addition to being inherently time consuming, can lead to variable results across labs due to gas chromatogram (GC) post-processing methods. In the recent NPRM for light duty vehicle emissions (EPA, April 2023), EPA staff acknowledge the usefulness of PMI as a strategy to reduce tailpipe emissions for legacy vehicles. Given the challenges mentioned previously related to DHA-derived PMI, they suggest use of Simulated Distillation (SimDis ASTM D7096) as a time- and cost-effective method to quickly identify and regulate higher boiling point components in market gasoline fuels.

Application of SimDis for gasoline fuels is unconventional; therefore, CRC members sought to better understand how SimDis data compares to more-conventional methods for characterizing gasoline – D86, DHA, etc. Leveraging leftover fuels from previous CRC projects (E-122-2, E-133, and RW-107-3), thirteen fuel samples were submitted for SimDis D7096, D86, DHA, enhanced DHA (SSI method), updated SimDis (as described in EPA NPRM), and VUV.

Objective

Using results from the fuel analyses described in the previous section, the main objectives of this project are to 1) perform an analysis of data for the 13 fuels including DHA per ASTM D6730, SimDis data per ASTM D7096, boiling range by atmospheric distillation per ASTM D86 and PMI data based on vacuum ultraviolet (VUV) spectroscopy per ASTM D8369. Calculate PMI and PME based on both D6730 DHA and D8369 VUV.; 2) identify data gaps, correlations to: methods and/or fuel properties (e.g., PMI to SimDis boiling fractions), and emissions data from the three aforementioned CRC projects (i.e. E-122-2, E-133, and RW-107-3); 3) explore how EPA's use of SimDis and a 'distillation cut' could impact fuels in this set (e.g. would a 3% distillation cut exclude fuels that may not necessarily lead to high emissions i.e. C10+ aromatic content?); and 4) formalize the three previous objectives as well as general trends into a written report.

Work Plan

Based on the previous section, the CRC Emissions Committee seeks to learn how SimDis results relate to conventional gasoline characterization methods. The selected contractor shall perform a data analysis including (but not limited to):

- Using SimDis, DHA, D86, and VUV results, compare and contrast, including context around fuel composition
- Compositional differences and percentage unknown between the methods.
- Correlations between SImDis and atmospheric distillation boiling points and/or boiling fractions

Secondly, CRC requests the contractor to identify limitations related to the application of SimDis to gasoline fuels.

Resources

A project team made up of CRC Emissions Committee members will be available for recurring update meetings as needed.

EXHIBIT B

REPORTS

MONTHLY TECHNICAL PROGRESS REPORTS

The contractor shall submit a monthly technical progress report covering work accomplished during each calendar month of the contract performance. An electronic Microsoft® Word compatible file (<1 MB) of the monthly technical progress report shall be distributed by the contractor within ten (10) calendar days after the end of each reporting period. The report shall contain a description of overall progress, plus a separate description for each task or other logical segment of work on which effort was expended during the reporting period.

FINAL REPORT

The contractor shall submit to or distribute for CRC an electronic (Microsoft Word) copy transmittable via email) of a rough draft of a final report within thirty (30) days after completion of the technical effort specified in the contract. The report shall document, in detail, the test program and all of the work performed under the contract. The report shall include tables, graphs, diagrams, curves, sketches, photographs and drawings in sufficient detail to comprehensively explain the test program and results achieved under the contract. The report shall be complete in itself and contain no reference, directly or indirectly, to the monthly report(s).

The draft report must have appropriate editorial review corrections made by the contractor prior to submission to CRC to avoid obvious formatting, grammar, and spelling errors. The report should be written in a formal technical style employing a format that best communicates the work conducted, results observed, and conclusions derived. Standard practice typically calls for a CRC Title Page, Disclaimer Statement, Foreword/Preface, Table of Contents, List of Figures, List of Tables, List of Acronyms and Abbreviations, Executive Summary, Background, Approach (including a full description of all experimental materials and methods), Results, Conclusions, List of References, and Appendices as appropriate for the scope of the study. Reports submitted to CRC shall be written with a degree of skill and care customarily required by professionals engaged in the same trade and /or profession.

Within thirty (30) days after receipt of the approved draft copy of the final report, the contractor shall make the requested changes and deliver to CRC ten (10) hardcopies including a reproducible master copy of the final report. The final report shall also be submitted as electronic copies in a pdf and Microsoft Word file format. The final report may be prepared using the contractor's standard format, acknowledging author and sponsors. An outside CRC cover page will be provided by CRC. The electronic copy will be made available for posting on the CRC website.

EXHIBIT C

INTELLECTUAL PROPERTY RIGHTS

Title to all inventions, improvements, and data, hereinafter, collectively referred to as ("Inventions"), whether or not patentable, resulting from the performance of work under this Agreement shall be assigned to CRC. Contractor X shall promptly disclose to CRC any Invention which is made or conceived by Contractor X, its employees, agents, or representatives, either alone or jointly with others, during the term of this agreement, which result from the performance of work under this agreement, or are a result of confidential information provided to Contractor X by CRC or its Participants. Contractor X agrees to assign to CRC the entire right, title, and interest in and to any and all such Inventions, and to execute and cause its employees or representatives to execute such documents as may be required to file applications and to obtain patents covering such Inventions in CRC's name or in the name of CRC's Participants or nominees. At CRC's expense, Contractor X shall provide reasonable assistance to CRC or its designee in obtaining patents on such Inventions.

To the extent that a CRC member makes available any of its intellectual property (including but not limited to patents, patent applications, copyrighted material, trade secrets, or trademarks) to Contractor X, Contractor X shall have only a limited license to such intellectual property for the sole purpose of performing work pursuant to this Agreement and shall have no other right or license, express or implied, or by estoppel. To the extent a CRC member contributes materials, tangible items, or information for use in the project, Contractor X acknowledges that it obtains only the right to use the materials, items, or information supplied for the purposes of performing the work provided for in this Agreement, and obtains no rights to copy, distribute, disclose, make, use, sell or offer to sell such materials or items outside of the performance of this Agreement.

EXHIBIT D

LIABILITY

It is agreed and understood that _____ is acting as an independent contractor in the performance of any and all work hereunder and, as such, has control over the performance of such work. _____ agrees to indemnify and defend CRC from and against any and all liabilities, claims, and expenses incident thereto (including, for example, reasonable attorneys' fees) which CRC may hereafter incur, become responsible for or pay out as a result of death or bodily injury to any person or destruction or damage to any property, caused, in whole or in part, by _____'s performance of, or failure to perform, the work hereunder or any other act of omission in connection therewith.

EXHIBIT E

PROPOSAL EVALUATION CRITERIA

1) Merits of proposed technical approach.
2) Previous performance on related research studies.
3) Personnel available for proposed study – related experience.
4) Timeliness of study completion.
5) Cost.