



COORDINATING RESEARCH COUNCIL, INC.

3650 MANSELL ROAD, SUITE 140
ALPHARETTA, GA 30022
TEL: 678/795-0506 FAX: 678/795-0509
WWW.CRCAO.ORG

November 3, 2011

In reply, refer to:

CRC Project No. AV-15-11

Subject: CRC Request for Proposal AV-15-11, "Metals in Jet Fuel."

Dear Prospective Bidder:

The Coordinating Research Council, Inc. (CRC) invites you to submit a written proposal to provide literature survey for "Metals in Jet Fuel" as described in the attached Statement of Work, Exhibit A.

Please indicate via letter, fax, or email by **November 11, 2011** whether or not you or your organization intends to submit a written proposal for the project. CRC will answer technical questions regarding the Request for Proposal if they are submitted in writing. CRC will then return written answers to all of the bidders, along with a copy of the original questions.

The CRC technical group composed of equipment, petroleum, and government representatives will evaluate your proposal. CRC reserves the right to accept or reject any or all proposals.

The reporting requirement will be text, data and charts to CRC in accordance with Exhibit A Statement of Work. A Final Report documenting the results of the study will be published by CRC. The reporting requirement is described in more detail in the attachment entitled, "Reports" (Exhibit B).

The "Intellectual Property Rights Clause" (Exhibit C) and "Liability Clause" (Exhibit D) will be a part of the agreement, which will be executed as a result of this Request for Proposal solicitation.

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.

CRC expects to negotiate either a cost reimbursable or a fixed price contract. 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:

Mrs. Jan Tucker
Coordinating Research Council, Inc.
3650 Mansell Road, Suite 140
Alpharetta, GA 30022

Phone: 678-795-0506, Ext. 100

Fax: 678-795-0509

E-mail: jantucker@crcao.org

The deadline for receipt of your proposal is **December 3, 2011**.

Sincerely,

Jan Tucker
Committee Coordinator

EXHIBIT A

STATEMENT OF WORK

Metals in Jet Fuel (CRC Project No. AV-15-11)

Relevant Strategic Objectives & Category (near, mid, long term impact):

To know what metals already go through the engines and their effect on the engines.

To give technical reasons for the metal specifications in the ASTM D7566.

Background:

Metals in Jet fuel have always been a question regarding their influence on the fuel properties and the engines durability.

Emerging fuels specifications have restricted the metals presence to almost nothing (less than 0.1ppm) without any technical reasons about the limit. New emerging fuels / pathways can contain some metals coming from biogenic sources that include: P, Na, K, Mg, etc.

The biological metal molecules may or may not be the same as those monitored in petroleum fuels, in same or differing state (ions, salts, etc), and the variations may or may not impact the system at similar or differing concentrations.

Project Objectives:

The study should be based on available literature.

To find actual levels in jet fuels (preferably in ppm weight).

To determine possible adverse effects on engines of high level of metals,

To recommend the individual elements and levels for future emerging fuel specifications

Project Approach: Literature survey

Project Deliverables:

The survey must take into account all the metals which are present in the jet fuel when going in the engines. This means that the metals present in the sediments which could come during logistic operations must be taken into account. Even the metals present in air (Na for example) are going through the engines must be part of this survey

If data are found during the research on halogens, the information should be noted separately.

The detrimental effects on the engine parts will be noted for the metals found in Jet Fuels. The date of the noted detrimental effects must also be recorded to correlate with engine technology advancements. Solutions used to mitigate the detrimental effects must be noted.

The objective of the study is not to determine the metal impact on aviation test methods. It is not the intent of this project to determine the best test methods to measure the metal content. But, the test methods used in the literature to measure the metal content must be noted in the survey with the date and the accuracy when available.

This survey should be limited to a literature survey but either limited tests could be done if needed or recommendations must be done at the end of the survey for a test program to better determine the metal content as seen by the engine

Project Schedule: between 6 and 12 months

Utilization of Deliverables:

To give ground to metal specifications in ASTM D7566.

To determine the degree of precision which will be required to measure the metals in D7566.

EXHIBIT B

REPORTS

DRAFT AND FINAL REPORT

The contractor shall distribute for the CRC an electronic pdf-compatible copy of a draft final report after completion of the technical effort specified in the contract. The draft final 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 progress report(s).

The CRC Steering Committee shall furnish comments regarding the draft report to the contractor within one (1) month after the draft copy.

Within thirty (30) days after receipt of the approved draft copy of the annual report, the contractor shall make the requested changes and deliver to CRC thirty (30) hardcopies including a reproducible master copy of the final report. The final report shall also be submitted as an electronic copy in a Microsoft WORD and a pdf or pdf-convertible file format. The electronic copy will be made available for distribution by CRC.

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.

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 of Contractor 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.