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Questions and Answers
For
CRC Project Number **CM-136-18-4**
Port Fuel Injection (FI) Intake Valve Deposit (IVD) Test Development- LAC Passing Criteria Development
a project of the Gasoline Deposits Working Group of the Performance Committee

Technical Questions:

1. **During the CRC-676-PFI-IVD project, the LE9 test was evaluated at both 100-hour and 50-hour durations with the final report indicating that the 50-hour duration reduced base fuel IVD flaking and improved result consistency. Should bidders assume that the 50-hour test duration will be used for all LE9 testing conducted under this project?**

   Yes, that is the expectation.

2. **The draft test matrix indicates that ASTM D6201 testing will be conducted for comparison purposes. Does CRC require that all ASTM D6201 testing in this program be conducted by a laboratory currently approved to run ASTM D6201 certification testing, or may non-certified laboratories perform the testing provided the procedure is followed in accordance with the ASTM method?**

   Not familiar with "ASTM certified lab". If there is ASTM certified lab, then it is preferred, but not required.

3. **Due to the limited availability of the ECUs supplied by OH Technologies, which appear to be primarily allocated for ASTM D6201 certification testing, could CRC advise whether assistance may be available in facilitating access to one of these ECUs for the duration of the research project?**

   If CRC can be helpful to assist a lab to gain access to the ECU, we would like to help once the lab is selected for the program. Please illustrate that the ECU is available with reasonable efforts.

4. **Is CRC providing the fuels to the test lab, or will the test lab need to purchase the test fuels?**

   CRC will determine which fuels are to be purchased and from which vendors. The selected laboratory will be responsible for ordering the fuels as specified by CRC

5. **The draft test matrix on page 4 of the RFP indicates a proposed set of additive and fuel combinations for LE9 and ASTM D6201 testing. Should bidders assume this matrix is fixed, or may alternative combinations or test sequencing be proposed if they improve statistical robustness or reduce overall cost while meeting the project objectives?**

   The draft test matrix may be adjusted during the course of the program based on additive availability or other considerations. Bidders are encouraged to propose unit costs for individual LE9 and ASTM D6201 tests, rather than a fixed total program cost, to allow flexibility in adjusting the total scope and cost based on the final number of tests performed.

6. **Should bidders assume that the LE9 operating procedure established in CRC Report 676 will be used without modification, or is limited optimization of operating conditions within the established framework acceptable if required to improve repeatability or deposit severity?**

   CRC does not anticipate modification of the LE9 test procedure as established in CRC Report 676. However, limited optimization may be permitted at the beginning of the program if a strong technical justification is provided and approval is obtained from the CRC Test Managing Panel. Any proposed optimization and its technical rationale should be clearly described in the bidder's proposal for consideration.

7. **The Statement of Work indicates that currently available IVD certification fuels will be collected from specialty suppliers (Step 1 of the Test Plan). Should bidders assume that CRC will specify the exact certification fuels to be used in the program (e.g., Test fuel 3 from CRC Report 676), or should the selected contractor propose candidate fuels that meet the intent of current D5500/D6201 certification fuels?**

   CRC has already collected information on available certification fuels from specialty suppliers. Final fuel selection will be the responsibility of the CRC Test Managing Panel. The selected laboratory may provide technical input to support the selection process.

8. **Step 5 of the Test Plan indicates that selected fuel-additive combinations may be evaluated at an optimized treat rate to achieve significant improvement in LE9 performance. Could CRC clarify whether the intent is to optimize treat rates strictly within EPA LAC constraints, or whether treat rates above the nominal LAC level may be evaluated to establish response characteristics?**

   Treat rate optimization may be conducted at levels higher or lower than the current EPA LAC, depending on the results of initial testing.

9. **Since a primary objective of the program is to establish recommended LAC passing criteria for the LE9 platform, does CRC have an expected statistical framework for defining the pass threshold (e.g., alignment with historical D5500/D6201 certification limits or other statistical approaches), or should the contractor propose an appropriate statistical methodology as part of the study?**

   The objective of the current program is not to fully establish the statistical characteristics of the LE9 test. That effort is planned for a subsequent phase of the LE9 IVD program. The present program is intended to demonstrate that a reasonable IVD "keep-clean" performance can be achieved with mainstream additives at a treat rate that could serve as a candidate for a new EPA LAC based on the LE9 engine platform.

10. **Should bidders assume that the LE9 engine configuration, calibration, and instrumentation used in CRC Report 676 will be maintained for this study, or is the selected contractor expected to define the final hardware configuration used for testing?**

    Bidders are expected to maintain the LE9 engine configuration, calibration, and instrumentation as documented in CRC Report 676 to ensure repeatability and comparability with previously reported results.