

## Seq. VI New Supplier Entry Procedure Task Force Minutes 5/2/2019

### Scope:

The ASTM Sequence VI Surveillance Panel requested a Task Force be formed to develop a procedure containing the requirements a new supplier shall fulfill before becoming a viable supplier.

### Objectives:

#### The Task Force will:

- Review previous analysis of data regarding fuel batches changes.
  - When and why changing fuel batches were allowed?
  - Was there a stats analysis completed to see the impact of changing fuel batches?
    - If yes, was the significance of the change comparable to what was observed between batches from Texas and Michigan?
    - Will the variability of the previously mentioned be used for the new supplier?

Fuel batches changes were not allowed until approximately 5 years ago. The fuel economy test sponsor preferred not to change batches. Approximately 5 years ago data was generated to and presented for the approval of changing batches at any time needed. Batch change effect has been analyzed multiple times finding no significant variations in result (see presentations attached to the minutes). For the most part, Haltermann fuel blended in Michigan is distributed to the labs closer to it, fuel blended in Texas is distributed to labs in Texas.

Will changing fuel from supplier A to B within a test be acceptable? The answer to this question may depend on what data shows for the new fuel, but, for other test types such as the Seq. V, mixing a new batch once the current batch has been depleted down to 10% is allowed. The Seq. VI used Baseline Before and Baseline After to calculate FE and this could help absorb the effect of changing fuels within a test.

- Review current procedure to introduce new batches of Baseline and reference oils, hardware.

SwRI presented a proposal for the introduction of new fuel/supplier:

The following test plan eliminates concerns about engine, stand, and lab severity differences by obtaining direct A/B paired comparisons.

#### - New engine

Break in and 542 ref on alternate fuel

Switch to Haltermann Solutions fuel, run 542 reference oil again (2nd run).

Engine can be used for two candidates

#### - New engine

Break in and 1010 ref on Haltermann Solutions fuel

Switch to alternate fuel, run 1010 reference oil again (2nd run)  
Engine can be used for two candidates

- New Engine

Break in and 544 ref on alternate fuel,  
Switch to Haltermann Solutions fuel, run 544 reference oil again (2nd run)  
Engine can be used for two candidates

The above gives 3 direct comparison points. Statistical power can be calculated for  $n = 3, 4, 5$ , etc. and determine the appropriate number of tests needed to detect differences of size 0.5 sigma, 1.0 sigma, etc.

Action Item: All members to review the above proposal and review the procedures to introduce new hardware and new batches of BL, compare those to the proposal above and be prepared to discuss next time.

Meeting adjourned.

- Develop a procedure containing the requirements a new supplier shall fulfill before becoming a viable supplier.
  - Could different fuels age the engines differently?
  - What is the difference between different suppliers vs. different batches?
  - How often large batches for other test types adjusted to stay in compliance?
  - Statistically, what is the most efficient way to evaluate equivalency for new suppliers?
  - Based on previous input, should it be different than introducing a new batch?
  - Outline cost responsibilities for introducing a new supplier.
- Submit TF recommendation to the Seq. VI Surveillance Panel.

## Seq. VI New Supplier Entry Procedure ATTENDANCE 20190502

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