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COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

Issued: 04.29.2020

Reply to: Dan Worcester
Southwest Research Institute
6220 Culebra Rd.
San Antonio, TX 78238
Phone: 210.522.2405
Email: dworcester@swri.org

These are the unapproved minutes of the 04.23.2020 Sequence VI Conference Call.

The meeting was called to order at 115 PM Central Time by Chair Andrew Stevens.

1.0 The Agenda is Attachment 1.

2.0 Roll Call. Attendance is Attachment 2. There were no member changes.

3.0 Old Business

MOTION: Approve minutes from the 02.13.2020 conference call.
Jeff, Ben second. One waive, approved.

ACTION: Tracey noted she had not seen the minutes and waived. Effective with this set of minutes, the secretary will send an email to the attendance list providing the TMC site where the minutes are stored. Should anyone wish a digital copy, contact the secretary.

3.1 The minutes are posted at:

http://www.astmtmc.cmu.edu/ftp/docs/gas/sequencevi/minutes/VIMinutes20200213ConferenceCall.pdf

4.0 New Business

4.1 There is a ballot for alternate fuel supplier procedure.

4.2 Haltermann voted negative.

There was discussion on the steps considered for the negative vote.
See Attachment 3. The specifics for the Haltermann negative are Attachment 4. Ron's comment on the fuel analysis is Attachment 5. The information letter regarding an alternate supply source is Attachment 6.
A separate email from the Chair gave an alternate analysis criteria:

			Min.	Max.
Composition, aromatics	ASTM D5769	vol %	32.5	34.5
C6 aromatics (benzene)	ASTM D5769	vol %		1.0
C7 aromatics (toluene)	ASTM D5769	vol %	20.0	21.5
C8 aromatics	ASTM D5769	vol %	0.5	1.5
C9 aromatics	ASTM D5769	vol %	8.5	10.0
C10+ aromatics	ASTM D5769	vol %	2.0	3.0
Composition, olefins	ASTM D6550	wt%		2.0

There was discussion on blending criteria, control of the fuel blend formula, lab methods to change blends, reference validity, and the fuel approval matrix.

There was no change to the negative, and no vote was taken.
There will be another call scheduled for the GM presentation on their negative vote on the ballot.

The meeting adjourned at 13:05 PM Central Time.

Sequence VI Surveillance Panel Call Meeting Agenda
April 23, 2020 @ 2:00-4:00 EST

Webex Meeting Details Below Agenda

1. **Roll Call (start 2:05 EST)**

   1.1. SP Membership changes and additions

2. **Old Business**

2.1	Approve meeting minutes from 2/213/20 call	Andrew Stevens

3. **New Business**

3.1	Alternative Fuel Supplier Negative Vote Discussion	Rich Grundza

4. **Next Meeting**

   4.1. SP Meeting: TBD

5. **Meeting Adjourned**

ASTM SEQUENCE VI

Name	Email	Company	Attend

VOTING MEMBERS

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Dan Worcester	Dan.Worcester@swri.org	SwRI	ATTEND

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MOTION:				
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Jason Bowden				
Kevin Brodwater				
Jim Carter				
Aleise Gauer				
Rich Grundza				
Jeff Hsu				
Teri Kowalski				
Tracey King				
Dan Lanctot				
Ben Maddock				
Brianne Hockkeppel				
Andy Ritchie				
Ron Romano				
Clifford Salvesen				
Amol Savant				
Andrew Stevens				
Haiying Tang				
Prasad Tumati				
Dan Worcester				

ASTM SEQUENCE VI

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MOTION:				
Adrian Alfonso				
Jason Bowden				
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Amol Savant				
Andrew Stevens				
Haiying Tang				
Prasad Tumati				
Dan Worcester				

Balloting/Handling Negative Votes

Balloting/Handling Negative Votes

This module is designed to give you a general overview of ASTM's balloting process and provide useful tips to committee officers to assist in the proper handling of negative votes.

At the end of this module, you will be able to understand:

- the different levels of ASTM's balloting process
- the requirements for each level of balloting
- what ballot actions are appropriate for each level of balloting
- what happens with the results of the ballot and
- how to deal with the results

General Overview of the Balloting Process

ASTM International utilizes a multi level process in the development of its consensus standards. This process allows for a focused technical review by a subcommittee of experts in a specific field and provides the opportunity for a broader review by the main committee and Society at large. After the completion of the technical review by the ASTM membership, documents undergo a final procedural review by the Committee on Standards (an oversight group with representation from several committees) to assure that all procedural requirements were followed.

Subcommittee Ballot

The Subcommittee Ballot is the first and most focused level of review in the ASTM balloting process. Because the subcommittee is comprised of the most qualified technical experts in a given field, this initial level of balloting is primarily used for the initiation of new standards and major revisions to existing standards.

Subcommittee Balloting

Subcommittee ballots are authorized by Subcommittee Chairman or by a motion passed at a subcommittee meeting.

All ballots are prepared by ASTM Headquarters and remain open for a minimum of 30 days from the date of issuance.

A valid subcommittee ballot requires an affirmative vote of at least 2/3 of the affirmative and negative votes cast by voting members; with a minimum of 60% return.

All ballots received after the closing date (or as soon thereafter as a 60% return is achieved) will be considered as not having been returned and may affect a members official voting status. All statements accompanying late ballot returns will be forwarded to the subcommittee for information only.

Subcommittee Ballot Results

ASTM prepares a summary of the ballot results which is posted to the ASTM Website for member review and is provided to the subcommittee chairman and the technical contact along with any negatives and comments received. If a member submits a negative vote on a subcommittee item, the process is halted until the negative vote is technically resolved by the subcommittee.

Negative votes received on subcommittee ballots are considered by the subcommittee that initiated the item either (1) at a meeting of the subcommittee, or (2) by ballot of the subcommittee.

Comments accompanying affirmative or abstaining votes must also be considered by the subcommittee that initiated the item, but they do not stop the balloted item from moving forward.

Six Resolutions of a Negative Vote

The following resolutions are possible for subcommittee and main committee negative votes:

1. Persuasive
2. Withdrawn
3. Withdrawn with Editorial Change(s)
4. Not Related
5. Not Persuasive
6. Previously Considered

Persuasive

Negative votes are considered persuasive if there is agreement of those present that the comments are persuasive, if no motion is offered to find the negative not-persuasive, or if the 2/3 affirmative vote of the voting members required on a motion to find a negative vote not persuasive is not obtained. When a negative vote is found to be persuasive the item is withdrawn from ballot for further work and deliberation

Withdrawn with /without Editorial Change(s)

Negative voters may withdraw their vote at anytime. Many times, negative voters may be satisfied when provided additional information, clarification or with a minor editorial or formatting change. When a negative vote is withdrawn by the voter it is changed to an affirmative (or abstention vote if the voter so indicates) and requires no further consideration.

If editorial changes are involved, they should be incorporated into the revision.

Editorial changes may also be made during final review prior to publication.

Not Persuasive/Not Related

If the subcommittee does not agree with the technical statement of a negative voter, the subcommittee can initiate a not persuasive action. This not persuasive action must begin with a motion specifying the technical reasons that the subcommittee does not agree with

the negative voter. Similarly, a subcommittee may find that the technical comments submitted do not relate to the balloted item or are directed to a section of a standard that was not part of the ballot item.

Both not persuasive and not related dispositions have the following requirements:
- A motion and second for the disposition.
- A rationale specifying the reason for the action.
- An affirmative vote of at least 2/3 of the combined affirmative and negative votes cast
- For a not related action, the subcommittee shall treat the unrelated negative as an item of new business.

When subcommittee ballot negative votes are ruled not persuasive or not related they only need to be considered by the subcommittee initiating the ballot item.

Items that have passed subcommittee ballot without any negatives will automatically be forwarded to Main Committee Ballot and Society Review.

Items that have had all negatives withdrawn or found not persuasive/not related and have no other outstanding negatives will proceed to the Main Committee / Society Review ballot level.

Main Committee Ballot

Once an item has passed at the subcommittee level or has undergone sufficient review that it now warrants broader review, the item will be sent to the main committee ballot.

Initiation of Main Committee Ballots

Each main committee ballot item submittal shall include a cover letter explaining the rationale for the proposed action and a tally of the subcommittee ballot results. If this item progressed from the subcommittee to the main committee because negative votes were found non-persuasive or not-related, the ballot item submittal shall also include the name and affiliation of all negative voters, the statements accompanying negative votes, and the disposition of all negative votes including reasons.

All ballots are prepared by ASTM Headquarters and remain open for a minimum of 30 days from the date of issuance.

Concurrent Ballots

A Concurrent Ballot can be issued for minor revisions, or new standards and major revisions that have undergone at least one subcommittee ballot. Issuance of a Concurrent Ballot must have subcommittee and main committee chairman approval and include a cover letter containing a rationale for balloting concurrently and background information regarding the proposed ballot action.

Items submitted for main committee or concurrent ballot will also appear on Society Review. Reapproval of standards are issued to main committee ballot and Society Review.

Qualifications for Valid Main Committee / Concurrent Ballots

A valid Main Committee or Concurrent ballot requires an affirmative vote of at least 90% of the combined affirmative and negative votes cast by voting members; with a minimum of 60% return.

All ballots received after the closing date (or as soon thereafter as a 60% return is achieved) will be considered as not having been returned and may affect a member's official voting status. All statements accompanying late ballot returns will be forwarded to the subcommittee for information only.

ASTM Headquarters will provide a Closing Report of the ballot results to the subcommittee chairman and the technical contact with copies of all negatives and comments.

Negative votes received on main committee or concurrent ballots are to be considered by the subcommittee that initiated the item either (1) at a meeting of the subcommittee, or (2) by ballot of the subcommittee. The subcommittee chairman should complete the "Negative Vote Resolution Form" that is generated for each negative vote on a main ballot item and return it to the staff manager.

When a subcommittee has declared a negative vote from a main committee ballot, concurrent ballot or Society Review to be not persuasive or not related, this action shall be reported to the main committee together with a vote record and the reasons for the action taken by the subcommittee. Acceptance of the subcommittee recommendation by the main committee requires an affirmative vote of at least 2/3 of the combined affirmative and negative votes cast by the voting members at a meeting or by ballot.

The comments submitted with affirmative votes must also be considered by the subcommittee that initiated the item but do not prevent the item from moving forward.

Any negative voter whose negative has been found not persuasive by the vote of the subcommittee at a meeting, and then upheld by the vote of the main committee at a meeting, may request in writing a confirming ballot of the subcommittee having jurisdiction. This request shall be made to ASTM International Headquarters within 30 days after notification of the disposition of the negative.

Society Review

Society Review is conducted in tandem with main committee and concurrent ballots. The ASTM International website contains a section titled "Society Review of Main Committee Ballots" which allows each member of the Society to vote on these items. Negative votes received on Society Review of main committee ballot items are considered by the originating subcommittee in the same way main committee negative votes are handled.

The deadline date for receipt of Society Review comments or negatives will be posted on the website.

Written statements accompanying affirmative or negative votes, received by the deadline date will be considered by the subcommittee that initiated the ballot item. Written statements accompanying affirmative or negative votes, received after the deadline will be forwarded to the subcommittee for information only and the voter will be notified of this action.

Committee on Standards (COS)

Committee on Standards (COS) is a nine member standing committee of the ASTM Board that ensures due process and only rules on procedural matters. Disputes of a technical nature must be handled at the committee level in the normal course of the balloting process.

Negative voters who feel they have not received due process or that there was a procedural violation may appeal to COS within 30 days of being notified about the resolution of their negative vote. In the case of a formal appeal, both the negative voter and representatives of the committee may be present and participate in the discussion.

COS receives a monthly ballot of all Main Committee or Society Review negative votes that were considered as non-persuasive or not related.

Once the nine COS members have unanimously determined that the action on each negative vote has met the procedural requirements of the Society, the standard is approved for publication.

The Three- Step Approach to Handling Negative Votes

Communication: The most fundamental method of resolving negatives is for the subcommittee chairman or technical contact to contact the negative voter and discuss the negative in advance of the meeting. Often, simple clarification of the ballot item or an editorial clarification may result in the withdrawal of the negative. Should the negative vote be withdrawn prior to a committee meeting, the subcommittee chairman should immediately inform their staff manager. The removal of the negative vote will then enable the ballot item to proceed through the balloting process toward approval.

Consideration: The ASTM Regulations mandate that all negative votes must be considered and that due process be afforded to all negative voters. The negative voter shall be notified of the time and place where the negative votes will be considered no later than 30 days after the close of the ballot.

All points of the negative should be addressed separately based on technical merit. (This is especially helpful when the negative is lengthy.) The subcommittee chairman's report at the main meeting must include these negative votes and the subcommittee's consideration of them, including the reasons for any action taken and vote counts. At the

main meeting, the committee chairman must allow discussion before taking a vote on any motions to uphold the actions of the subcommittee.

Documentation: A majority of the problems associated with negatives during COS review stem from inadequate documentation of the committee's action(s). The Negative Vote Resolution Forms (attached to each negative vote) and minutes should fully reflect the consideration given to negative votes. When "not persuasive" or "not related" actions are taken on negative votes, it is very important that the following are documented:
- Name and affiliation of the voter
- Content of the negative vote
- Action taken on the negative vote with detailed rationale (address each portion of the negative vote)
- Vote tallies reflecting the count of affirmative, negative, or abstaining votes by voting members

It is important that the rationale for finding a negative vote "not persuasive" or "not related" addresses each portion of the negative vote and that the rationale is thoroughly recorded. The negative voters are notified as to the disposition of their negative votes.

Communication/Consideration/Documentation: Subcommittee

Lets review the three-step approach to handling negative votes on subcommittee ballots:

- Communication about negative votes should occur through meeting agendas, minutes, correspondence and direct contact between the negative voter and the subcommittee chairman or technical contact.

- Consideration of negative votes on subcommittee ballots are handled by the subcommittee initiating the ballot item at a meeting or by subcommittee ballot.

- Documentation of the subcommittee's action on negative votes, including the vote record and accompanying subcommittee reasons shall be recorded in the minutes. The negative voters shall be notified of these actions through correspondence or minutes.

Communication/Consideration/Documentation: Main Committee/Society

Lets review the three-step approach to handling negative votes on a main committee ballots/Society Review:

- Negative votes on main committee ballots/Society Review require a completed and signed Negative Vote Resolution Form to be returned to the staff manager in addition to communication through meeting agendas, minutes, correspondence and direct contact between the negative voter and the subcommittee chairman or technical contact.

- Negative votes on main committee ballots/Society Review require consideration by both the subcommittee initiating the ballot item and the main committee at a meeting or by ballot.

- Documentation of the actions on negative votes from main committee ballots/Society Review including the vote record and accompanying subcommittee reasons shall be recorded on the Negative Vote Resolution Form and in the minutes and through correspondence. The negative voters shall be notified of these actions.

Helpful Hints

- Ballot controversial sections of a document as separate ballot items.
- Use good judgment when balloting sections separately.
- Provide a clear and informative cover letter for ballot items.
- Try to contact the negative voter prior to the meeting to expedite the resolution of negative votes. Do not rely on the negative voter attending.

More Hints

- Dissect each portion of the negative vote into distinct, separate issues and address each point separately based on technical merit.
- Negative votes ruled persuasive remove the item from ballot.
- Submit editorially revised document with the Negative Vote Resolution Form to the staff manager, at the meeting if possible.

Conclusion

Please contact your committee Staff Manager if you have any questions or would like to discuss this topic in additional detail.

Negative

Ballot Number:	D02.B0 (20-03)	Close Date: APRIL 5, 2020
Item Number:	004	Revision Of D8114-2019B Test Method for Measurement of Effects of Automotive Engine Oils on Fuel Economy of Passenger Cars and Light-Duty Trucks in Sequence VIE Spark Ignition WK72145 Sequence VIE Info Letter 20-2 Seq no 7(SEE VOLUME 05.05) TECHNICAL CONTACT: Frank M Farber fmf@astmtmc.cmu.edu (412) 365-1030

Member's Name:	Indresh Mathur	
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File Attachment: 1279511_D02B0000320_4.docx

Statement:

Section **Statement**

The rational for my negative vote follows:

1. **The Alternative Fuel Approval Requirement submitted for Annex A18 is ambiguous, not well defined and is difficult to follow for someone not on the surveillance panel. In A18.1 "an alternate fuel to be approved for Sequence VI tests, the fuel supplier shall demonstrate, through chemical analyses and engine testing, that the fuel provides the same performance to the currently approved fuel". The document defines the engine test prove-out program but does not define the chemical analysis that would be required on the current fuel and the fuel from an alternate supplier. One is left wondering whether a Detailed Hydrocarbon Analysis (DHA) for the two fuels would be required and if so, what would be the criterion to show equivalency or interchangeability between the that the two fuels. If oil performance is impacted by fuel composition, then should the current and alternate fuel not have identical composition?**

1. **The Annex A18.2 outlines the program for an alternate fuel supplier to show that the fuel is suitable for a Sequence VIE test on a given set of engines. If an approved alternative fuel becomes unavailable in the middle of the test program, can the test be continued with the current fuel? Annex 18.5 in the ballot document implies that even if the fuel performance were to be equal, the fuels are not interchangeable.**

1. **Annex A18.2 says that it is OK to mix up to 10% of one fuel into another fuel. Where is the rational for this? Why not 20% or 30% or 40%? What about during the prove-out test program? Should the prove-out tests not be conducted with 100% of current fuel and 100% alternate fuel?**

1. **An independent statistician, who is not a member of the test panel, should evaluate the data to establish whether the performance of the current fuel and the alternate fuel is the same.**

1. **A18.4.1 basically implies that the pass/fail criteria for the alternate fuel, set in A18.3.1 or 18.3.2 does not necessarily have to be met for the qualification of the alternate fuel. If an alternate fuel supplier can petition the surveillance panel and get the fuel accepted, then what good is the "prove-out program"? The alternate fuel supplier qualification then becomes very subjective and dependent on the judgement of the panel members.**

1. **If two test labs using fuels from two different suppliers get different results on the same oil then how would that be handled by the panel?**

The rational for my negative vote follows:

1. **The Alternative Fuel Approval Requirement submitted for Annex A18 is ambiguous, not well defined and is difficult to follow for someone not on the surveillance panel. In A18.1 "an alternate fuel to be approved for Sequence VI tests, the fuel supplier shall demonstrate, through chemical analyses and engine testing, that the fuel provides the same performance to the currently approved fuel". The document defines the engine test prove-out program but does not define the chemical analysis that would be required on the current fuel and the fuel from an alternate supplier. One is left wondering whether a Detailed Hydrocarbon Analysis (DHA) for the two fuels would be required and if so, what would be the criterion to show equivalency or interchangeability between the that the two fuels. If oil performance is impacted by fuel composition, then should the current and alternate fuel not have identical composition?**

2. **The Annex A18.2 outlines the program for an alternate fuel supplier to show that the fuel is suitable for a Sequence VIE test on a given set of engines. If an approved alternative fuel becomes unavailable in the middle of the test program, can the test be continued with the current fuel? Annex 18.5 in the ballot document implies that even if the fuel performance were to be equal, the fuels are not interchangeable.**

3. **Annex A18.2 says that it is OK to mix up to 10% of one fuel into another fuel. Where is the rational for this? Why not 20% or 30% or 40%? What about during the prove-out test program? Should the prove-out tests not be conducted with 100% of current fuel and 100% alternate fuel?**

4. **An independent statistician, who is not a member of the test panel, should evaluate the data to establish whether the performance of the current fuel and the alternate fuel is the same.**

5. **A18.4.1 basically implies that the pass/fail criteria for the alternate fuel, set in A18.3.1 or 18.3.2 does not necessarily have to be met for the qualification of the alternate fuel. If an alternate fuel supplier can petition the surveillance panel and get the fuel accepted, then what good is the "prove-out program"? The alternate fuel supplier qualification then becomes very subjective and dependent on the judgement of the panel members.**

6. **If two test labs using fuels from two different suppliers get different results on the same oil then how would that be handled by the panel?**

Affirmative with Comment

Ballot Number: D02.B0 (20-03) Close Date: APRIL 5, 2020

Item Number: 004 Revision Of D8114-2019B Test Method for Measurement of Effects of Automotive Engine Oils on Fuel Economy of Passenger Cars and Light-Duty Trucks in Sequence VIE Spark Ignition WK72145
Sequence VIE Info Letter 20-2 Seq no 7(SEE VOLUME 05.05)
TECHNICAL CONTACT: Frank M Farber
fmf@astmtmc.cmu.edu
(412) 365-1030

Member's Name: Michael Deegan

Address: Ford

17225 Federal Drive Suite 200

ALLEN PARK MI 48101

Phone Nr: 3138058942 Fax Nr:

Email Address: mdeegan@ford.com

File Attachment:

Statement:

Section	Statement
A18.5	Update the 2nd sentance to state as follows: When switching from one fuel supplier to another....from the purchasing ~~laboratories take~~ laboratory's tank...the alternate supplier. Add another sentance after the above sentance: This Certificate of Analysis sample should be representative of the blend of fuel that will be in the laboratory's tank after the new fuel is added.

A Program of ASTM International

Test Monitoring Center

@ Carnegie Mellon University
6555 Penn Avenue, Pittsburgh, PA 15206, USA

http://astmtmc.cmu.edu
412-365-1000

Sequence VIE Information Letter 20-2
Sequence Number 7
April, 2020

TO: Sequence VI Surveillance Panel

SUBJECT: Alternate Fuel Approval Process

During the October 25, 2019 Sequence VI Surveillance Panel Conference call, the panel agreed to allow for alternate fuel approval for the fuel used for Sequence VIE tests. As a result, footnote 19 has been updated to refer to new Annex A18, which delineates the testing requirements for a fuel to be considered as a candidate for an alternate. Reference Documents have also been updated to include API 1525 as a reference.

These revised text and or section(s) have been highlighted in red and are effective with the issuance of this letter.

Aleise Gauer
Materials Engineer – Fluids & Lubricants
GM Global Propulsion Systems

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachment

c: http://www.astmtmc.cmu.edu/ftp/docs/gas/sequencevi/procedure_and_ils/VIE/il20-2_vie.pdf
Distribution: Email

Revises D8114-19a

2.3 *API Standard:*
API 1525 Bulk Oil Testing, Handling, and Storage Guidelines Documentation

[19]The sole source of supply of the fuel known to the committee at this time is Haltermann. If you are aware of alternative suppliers, please provide the information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible committee,[1] which you may attend. Annex A18 provides testing and other requirements for being considered as an alternate by the Sequence VI Surveillance Panel.

A18 Alternate Fuel Approval Requirements

A18.1 For an alternate fuel to be approved for Sequence VI tests, the fuel supplier shall demonstrate, through chemical analyses and engine testing, that the fuel provides the same performance to the currently approved fuel. The supplier shall provide a Certificate of Analysis documenting that the fuel meets the current Sequence VI fuel specification, as well as conducting a prove-out program.

A18.2 *Prove-out Program*—Complete the prove-out program using the Sequence VIE test, which is to be performed on one test stand, using a minimum of two engines and a single reference oil, 1010-1 (or subsequent approved reblends). Testing shall utilize the first four runs of the engines' life and shall be alternated between the currently approved fuel and the alternate fuel candidate, as shown in Table A18.1.

Table A18.1 Testing Order

Engine	Break-in Fuel	Run #1	Run #2	Run #3	Run #4
Engines 1, 3,…	Current Fuel	Current Fuel	Alternate Fuel	Current Fuel	Alternate Fuel
Engines 2, 4,…	Alternate Fuel	Alternate Fuel	Current Fuel	Alternate	Current Fuel

A18.3 At the completion of each engine after Engine #2, construct two Analysis of Variance (ANOVA) models using the engine hour corrected results. The response variables shall be *FEI1Yi* and *FEI2Yi*, which are the standardized results. Here Y_i is defined as:

$$Y_i = (R - M)/S \qquad \text{(A18.1)}$$

where:
Yi = standardized test result at test order *i*
R = actual reference oil test result expressed as % *FEI*,
M = reference oil target mean expressed as % *FEI*, and
S = reference oil target standard deviation, expressed as % *FEI*.

Include in the ANOVA model factors "Engine", with levels Engine1, Engine2, …, EngineN, and "Fuel", with two levels (current and alternate) . For the proposed fuel to be qualified, the following shall be true of the ANOVA model results for both the *FEI1Yi* model and the *FEI2* Yi model:

A18.3.1 The absolute difference in the least squares mean for the current fuel and the least squares mean for the alternate fuel is less than 0.75.

A18.3.2 When forming a 95 % confidence interval on the least squares mean difference between fuels, the upper and lower limits of both confidence intervals are both less than 2.5 in absolute value.

A18.4 If the criteria in both A18.3.1 and A18.3.2 are not satisfied for both *FEI1* and *FEI2*, then conduct an additional four tests on another engine, followed by another ANOVA model. Continue this process until both criteria have been satisfied for both parameters.

A18.4.1 The Surveillance Panel will approve the fuel for use following confirmation of these results. If the supplier believes, the fuel is providing equivalent performance to the current approved fuel without meeting the criteria in A18.3.1 or 18.3.2 or both, they may petition the surveillance panel for acceptance.

A18.5 *Implementation of an Alternate Fuel*-- Each laboratory can choose which approved fuel to use for individual stands, provided candidate testing is conducted on the same fuel used to calibrate the stand. When switching from one fuel supplier to another, conduct a full Certificate of Analysis on a sample of fuel consisting of no more than 10% of the current batch fuel from the current supplier from the purchasing laboratories take and at least 90% of the new batch from the alternate supplier. Ensure that the Certificate of Analysis obtained from the blended sample meets the current Sequence VI Fuel Specifications.