

Sequence V Surveillance Panel Meeting March 19th, 2021 11 AM EST

Roll Call:

Afton: B. Maddock, B. Campbell
Ford: M. Deegan
General Motors: B. Cosgrove, T. Cushing
Haltermann: P. Tumati
HCS Group: T. King
Infineum: D. Boese, C. Laufer, A. Ritchie (Chair)
Intertek: A. Lopez
Lubrizol: J. Brys, J. Gingerich, P. Scinto
OHT: J. Bowden
Oronite: J. Martinez, R. Stockwell
Shell: J. Hsu
SwRI: A. Chaudhry, D. Engstrom, T. Kostan, P. Lang, M. Lochte
TEI: D. Lanctot
TMC: F. Farber, D. Beck
Valvoline: A. Savant

Meeting Summary:

The panel reconvened to further discuss the motions made on March 15th. Upon further reflection and analysis, a case was made to challenge the panel's decision approving the motions made on March 15th and a motion was made to: **Rescind the TSA motion from March 15th and to retain the ICF, effective today, March 19th, 2021.** The Motion passed but not unanimously: 6 approve, 2 negative, 7 waive. Therefore, the motions made on March 15th still stand as approved and an info letter will be issued and balloted through subcommittee B through D02. Another motion was made to: **Apply TSA to references.** This motion was agreed to be held until the next meeting.

Actions:

1. Open action from [Feb 25th meeting](#): **Robert Stockwell (Oronite)** to lead task force on obtaining clarity around test validity, QIs, 2 hours of no data, etc.
2. Open action from [June 24th meeting](#): **Haltermann** to look at fuel data from Sec 8.2.6 requirement and report back to panel.

Next call: Friday, March 26th @ 1 PM EST

Meeting Details:

The following minutes will refer to the ICF and TSA motions, both approved on March 15th. As a reminder, they are as follows:

- The "ICF motion": **We accept ICF of -0.32 to be applied to all reference tests and candidates when on current fuel batches GI0321NX10 and GI0321NX10-1, effective date to be March 16th, 2021.** March 15th voting results: 8 approve, 0 negative, 8 waive.

- The "TSA motion": **Move that we accept TSA (Top Scale Adjustment) as noted below and apply them to candidates starting on or after March 16th, 2021. Final report forms will follow.**
 - For candidates, apply the following adjustment:
 - Factor = $1 - (\text{Original Result} - 8.7)$, $0 \leq \text{Factor} \leq 1$
 - New ICF = Factor x ICF
 - New SA = Factor x SA
 - Adjusted Result = Original Result + New ICF + New SA

March 15th voting results: Motion voting results: 10 approve, 0 negative, 5 waive.

The Chair announced that there was a request for the panel to reconvene and gave the floor to Bob Campbell (Afton) to describe why.

Sharing the presentation (appended "VH ICF and Top of Scale.pdf"), Bob Campbell (Afton) expressed his appreciation for everyone's time to listen to his concerns as he believes that the panel didn't make the right decisions about the TSA motion at the March 15th meeting. He explained we should be applying ICFs across the board: to both the reference oils and candidate oils. Bob also pointed out that 14 out of 32 tests had results above 8.7, and of the 16 tests with the old batch of fuel, 5 results were above 8.7. See slide copied below, highlighting the flaws of TSA as per Monday's motion.

Fundamental Flaw with AES Candidate ICF Application

ICF's should be applied to References and Candidates the same

For candidates, apply the following adjustment:

- Factor = $1 - (\text{Original Result} - 8.7)$, $0 \leq \text{Factor} \leq 1$
- New ICF = Factor x ICF
- New SA = Factor x SA
- Adjusted Result = Original Result + New ICF + New SA

Proposal treats them differently

- ▲ All reference results on new fuel get -0.32 ICF applied
 - These corrected results are then used to determine lab calibration status and also generate lab SA's
- ▲ TMC 1011 results (n=32 AC/OC in total)
 - Old Fuel ... 7.33 – 9.30, 5 results above 8.7 (n=16)
 - New Fuel ... 7.77 – 9.41, 9 results above 8.7 (n=16)

Reference result of 9.41 corrects to 9.09 ($9.41 + (-0.32)$)

Candidate result of 9.41 corrects to 9.32 ($9.41 + (1 - (9.41 - 8.7)) * -0.32$) before SA application

- ▲ the ICF (which is to correct for fuel severity) only adjusts candidate by 0.09

We can't have it both ways, reference results and candidate results need to be treated the same

- ▲ Regardless of performance level

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The next slide reminded the panel that the target for TMC 1011 is 8.43, which is very close to the “pivot” point of 8.7 in the TSA motion. Bob suggested that a more appropriate pivot point would be much higher, maybe 9.41. Bob also highlighted that there's currently no data to suggest that the pivot point starts at 8.7.

Travis Kostan (SwRI) recalled that the statisticians discussed not applying the TSA to references because reference oils didn't get up in the performance area where we needed it. But he could not disagree with Bob as we should be treating the reference oils the same as candidates. Phil Scinto (Lubrizol) added that the reason for the TSA is a flaw in a reference oil system and furthered that if we partially correct, it's better to acknowledge the flaw and apply a correction. He explained that the reference system is giving us something flawed and we have an estimate of how it's flawed and how to fix the candidate. Bob Campbell (Afton) asked to better understand what's being considered the flaw. Phil answered that it's not a flaw but rather a problem when we deal with candidates working toward a spec limit that's far away from API and GF-6 limit. Bob replied that 8.7 has nothing to do with the API limit and noted that it's a half sigma away from the 1011 reference oil. He reminded the panel that we said we would use 9.09 to determine if a stand is calibrated or not and then adjust the SA; there should not be a way to have it both ways. If the fuel bias is -0.32, we can leave it there and let the severity adjustments handle it over time. But for the lab differences, he suggested that maybe the labs need to get together to discuss this.

The Chair confirmed that Bob is changing his vote to negative. Bob clarified that he still approves of the ICF motion but does not approve of the TSA motion that treats candidates and references differently.

The Chair summarizes that the ICF motion is still approved and that an info letter will address it. The TSA motion now has a negative.

Robert Stockwell (Oronite) voiced that he would like to change his vote to negative on the ICF motion. He believes TSA is a meaningful way forward. He agrees that the labs need to get together but TSA is more important than ICF.

The Chair re-summarized our situation: we now have 2 motions, both carrying negative votes. So they both will have to be resolved through the ASTM process. He called on Frank Farber (TMC) for guidance.

Frank Farber (TMC) said he was waiting to issue the info letter due to the controversy. He can send an Information Letter out as it was approved by the panel or the panel can pull it back. He suggested that subcommittee B balloting might not be the best way to go, but it's up to the panel.

Phil Scinto (Lubrizol) noted that we cannot take away any tests that already started since Monday's motions went into effect. TSA and ICF applies to tests that started on March 16th or after. Although the candidate would be treated unfairly, Bob Campbell (Afton) agreed that rules can't be retroactively changed.

Travis Kostan (SwRI) asked where Bob Campbell (Afton) stood if the motion were amended to apply to both candidates and reference oils. Bob answered that it clears up the equity in the ICF world but he still does not see data that says the inflection point of 8.7 is correct as we have several results above that, referring to the 14/32 results that are above 8.7. We have not seen data that says after 8.7, we lose signal. He speculated that the 8.7 was chosen because it's the dexos spec limit. Phil Scinto (Lubrizol) explained that 8.7 was chosen due to the analysis, not the dexos spec limit. Phil stated that although the whole issue was raised because of dexos, the statisticians did the analysis and ran the numbers to arrive at 8.7. Travis added that the group went through several iterations. The factor didn't need to be a step factor, but rather, gradual. One proposal, he explained, started at 9 and died out slowly at 10 but it was realized that 10 is not the upper limit. Upper limit is more like 9.7, Travis clarified. Bob offered that maybe the data needs to be transformed. Doyle Boese (Infineum) said that a transformation would involve as much black art as was involved with the selection of 8.7. Phil concurred and said there should not be a transformation as he does not want to fix something and hurt something else.

The Chair asked the panel for thoughts on allowing the 2 motions carrying negatives to go forward with the ASTM process.

- Al Lopez (Intertek) thanked Bob for putting together the presentation. Having thought through our decisions since March 15th and seeing Bob's presentation, Al changed his vote to negative for the TSA motion. He recommended that we either revote on the motion now or on Monday when everyone has a change to understand this more.
- Jeff Hsu (Shell) suggested to look at the waive votes. He understood that a negative vote would hold up the process which was the reason why he waived.

Seeing the ASTM process ahead of us, Bob Campbell (Afton) asked Frank Farber (TMC) if there was a better way to resolve this. Frank said we could go ahead with the Information Letter, which would go to Subcommittee B. And on Monday, we can write another letter to

rescind it. This way, there's a short period of time where the decisions from Monday are in effect. He added that the balloting process is 30 days long.

Taking into account the negative vote on the ICF motion from Robert Stockwell (Oronite), Bob Campbell (Afton) made a motion to rescind both the TSA and ICF motions. He added we need more time for due diligence, which includes consideration of a transformation. Al Lopez (Intertek) understood from the presentation that Bob would be in favor of the ICF. Bob said he could go either way, to which Mike Deegan (Ford) observed that if we rescind ICF, we would be right back to where we started, with the labs back in jeopardy to calibrate. He prompted Robert to elaborate on his negative vote on the ICF motion. Robert recognized that we may putting the references in jeopardy but believes we got it right on Monday. He's supportive of more investigation but explained there are top of the scale issues that are being impacted. Al Lopez (Interek) pointed out that maybe we waited too long to apply a fuel correction; had we applied it a couple years ago when we started the batch, maybe we wouldn't be here because the SA would be more accurate and premium oils at the top of the scale wouldn't be a problem. He added that we've had several oils above 9 in AES and given this history, does not understand why there's a sudden top of the scale problem. Phil Scinto (Lubrizol) said this interpretation is not correct and will take it offline.

The Chair pulled Frank Farber (TMC) back in as this group needs to understand the timings. Frank offered 2 options: 1) we rescind everything done on March 15th with a 2nd info letter or 2) we write a 2nd info letter to retain the ICF motion for reference oils but not the TSA motion.

Bob Campbell (Afton) made a motion to: **Rescind the TSA motion from March 15th and to retain the ICF, effective today, March 19th, 2021.** Seconded by Al Lopez (Intertek).

The Motion passed but not unanimously: 6 approve, 2 negative, 7 waive

Afton	Bob Campbell	Approve
Intertek	Al Lopez	Approve
Valvoline	Amol Savant	Waive
SwRI	Ankit Chaudry	Waive
Afton	Ben Maddock	Approve
GM	Brad Cosgrove	Approve
TEI	Dan Lanctot	Waive
TMC	Frank Farber	Waive
OHT	Jason Bowden	Waive
Shell	Jeff Hsu	Waive
Lubrizol	Jerry Brys	Negative
Oronite	Robert Stockwell	Negative
Ford	Mike Deegan	Approve
Haltermann	Prasad Tumati	Waive
Infineum	Caroline Laufer	Approve

Since there were 2 negatives, Frank Farber (TMC) explained, this would have to go through subcommittee B balloting before it could be issued. Bob Campbell (Afton) said there's no doubt his argument is persuasive as we're treating references and candidates differently. Robert Stockwell (Oronite) replied that 16 data points is a lot and that one could argue that TSA could affect the more recent 1011 results as well.

To clarify, Amol Savant (Valvoline) wanted to confirm his understanding that the negatives from today's vote would not be retroactively applied to Monday. The Chair agreed and confirmed that the ICF still applies. Jerry Brys (Lubrizol) confirmed yes, until it's addressed in

subcommittee B. Jerry noted that there was no vote to rescind the ICF motion. Amol remarked this was true unless Robert Stockwell (Oronite) wanted to make that motion. Robert explained that the reason to do so would be due to the impact to TSA. He withdrew his negative vote to the ICF motion but announced he does not like it. He believes both motions are intertwined. He explained that ICF is good for the labs with where we are today and we'll see how this progresses. Al Lopez (Intertek) commented that he did not see how ICF is intertwined with TSA for oils that are in the range of 9s. ICF is a fuel correction to apply to both references and candidates. Mike Deegan (Ford) agreed with Al's assessment.

After the above discussion, Frank Farber (TMC) summarized:

- Re: the motions made on March 15th: the actions on March 15th of approving the ICF and TSA motions stand and the info letter than spawned from said actions will be distributed. This info letter will be balloted through subcommittee B through D02. Once the ballot is issued, we have to wait 30 days for voting. Once closed, if there's a negative, then subcommittee B will have to resolve it, which usually entails giving it back to the SP or giving the person casting the negative vote time to make the case to the Subcommittee B members.
- Re: the motion made today to rescind the TSA motion but retain the ICF motion: the panel needs to tell Frank if they want to go forward with an info letter.

Bob Campbell (Afton) expressed concerns that we should issue an info letter sooner rather than later because in the meantime, candidates will be overcorrected. Pat Lang (SwRI) motioned to: **Apply TSA to references.** (Motion to apply TSA to candidates was already passed on March 15th). Seconded by Robert Stockwell (Oronite). Bob noted how similar this feels to what was done on March 15th and suggested that we pause the meeting as Frank needs to issue the info letter. We will just need to reiterate that people need to pay attention to the interim data. Frank confirmed he will ballot the info letter. Mike Deegan (Ford) agreed with this approach. Bob asked if it's ok to hold this motion. Pat was willing to hold the motion until the next meeting. This will allow more time for labs to better understand what TSA would do to their references.

Frank confirmed that all tests started until B will be grandfathered in. Jerry Brys (Lubrizol) concurred.

The Chair closed out the meeting, acknowledging the good intentions and discussions from the group. Meeting was adjourned at 12:23 PM EST.

Appended: "VH ICF and Top of Scale.pdf"



VH ICF and Top of
Scale.pdf

Slide 1:



VH ICF and Top of the Scale Concerns

3/19/2021

Passion for Solutions®


Slide 2:

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Fundamental Flaw with AES Candidate ICF Application

- ICF's should be applied to References and Candidates the same
 - For candidates, apply the following adjustment:
 - Factor = $1 - (\text{Original Result} - 8.7)$, $0 \leq \text{Factor} \leq 1$
 - New ICF = Factor x ICF
 - New SA = Factor x SA
 - Adjusted Result = Original Result + New ICF + New SA
- Proposal treats them differently
 - All reference results on new fuel get -0.32 ICF applied
 - These corrected results are then used to determine lab calibration status and also generate lab SA's
 - TMC 1011 results (n=32 AC/OC in total)
 - Old Fuel ... 7.33 – 9.30, 5 results above 8.7 (n=16)
 - New Fuel ... 7.77 – 9.41, 9 results above 8.7 (n=16)
- Reference result of 9.41 corrects to 9.09 ($9.41 + (-0.32)$)
- Candidate result of 9.41 corrects to 9.32 ($9.41 + (1 - (9.41 - 8.7)) * -0.32$) before SA application
 - the ICF (which is to correct for fuel severity) only adjusts candidate by 0.09
- We can't have it both ways, reference results and candidate results need to be treated the same
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TMC 1011 – AES

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- ▲ Target = 8.43
 - ▲ Std. Dev. = 0.57
 - ▲ ~ Its performance is actually very close to 8.7

- ▲ 8.7 chosen as the “Pivot”, meaning we don’t trust the ICF or SA’s from the LTMS system above this value
 - ▲ 8.7 is ~0.5 std. dev. away from TMC 1011 target

- ▲ Do we really not trust data > 0.5 sigma of our high reference oil target?

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Practical, not theoretical Example

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- ▲ Assume Lab SA before ICF applied = -0.55 (a very real value)
- ▲ First column is historic reporting
 - ▲ Original result – SA = Final
 - 9.25 corrects to 8.7

- ▲ Second column is new reporting
 - ▲ Original result + corrected ICF + corrected SA = Final
 - $9.05 + (.65 * -.32) + (.65 * -.23)$
 - 9.05 corrects to 8.7

Critical Parameters		
	AES, Merits	Updated AES, Merits
Original Result	9.25	9.05
Transformed Result		
Industry Correction Factor	0	-0.32
Corrected Transformed Result		
Severity Adjustment	-0.55	-0.23
Final Transformed Result		
Top Scale Adjustment		0.65
Final Original Unit Result	8.70	8.69

- ▲ There is NO data to suggest there is a 0.2 merit bias at this level

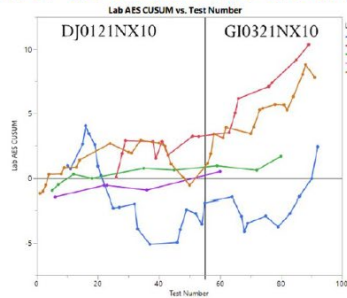
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Suggestions

- Do nothing (as it was last week), let SA's manage differences
- Retain ICF but remove Top of Scale and associated "factor" adjustments
- Change pivot from 8.7 to something closer to upper range of TMC 1011, maybe 9.41 since we've been ok using values at this level to determine lab calibration status and SA's
- Since labs seem to have different severities, perhaps the labs have some work to do before we do anything



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Stand SA Justification

- Appendix data from Stats report show stand differences in AES and RAC, so stand-based system should be explored
 - No bearing on ICF or Top of Scale however
- Clear stand differences in AES and RAC

AES

# Parameter Estimates				
Term	Estimate	Std Error	t Ratio	Prob > t
Intercept	2.7432769	0.080412	30.23	<.0001*
IND[340]	-1.19497	0.091913	-12.18	<.0001*
IND[331]	0.402534	0.178145	2.27	0.0267*
IND[1009]	0.301953	0.127622	2.36	0.0100*
IND[1009-1]	0.0528926	0.189186	0.31	0.7539
LTMSLAB A	-0.783652	0.19145	-4.09	0.0001*
LTMSLAB B	0.2522668	0.117018	2.20	0.0310*
LTMSLAB D	0.124695	0.124617	1.00	0.3194
LTMSLAB E	-0.023559	0.194055	-0.02	0.9826
LTMSLAB A LTMSAPP1	-0.376329	0.145648	-2.58	0.0114*
LTMSLAB A LTMSAPP2	0.3634179	0.155063	2.33	0.0171*
LTMSLAB A LTMSAPP3	0.3634888	0.150113	2.42	0.0173*
LTMSLAB A LTMSAPP4	0.3480053	0.192346	1.81	0.0733
LTMSLAB B LTMSAPP1	0.2452884	0.212974	1.15	0.2509
LTMSLAB B LTMSAPP2	0.2979164	0.160655	1.85	0.0647
LTMSLAB C LTMSAPP1	0.118532	0.13666	1.01	0.3132
LTMSLAB C LTMSAPP2	-0.180141	0.136865	-1.30	0.1979
LTMSLAB C LTMSAPP3	-0.170056	0.200613	-0.81	0.4196
LTMSLAB C LTMSAPP4	0.0273287	0.160674	0.16	0.8742
FUELBTD(DJ0121NX10)	-0.47511	0.048677	-3.53	0.0006*

# Effect Tests					
Source	Nparm	DF	Squares	F Ratio	Prob > F
IND	4	4	92.641414	94.9403	<.0001*
LTMSLAB	4	4	1.442837	1.4789	0.2444
LTMSAPP LTMSLAB	10	10	5.271792	2.1634	0.0262*
FUELBTD	1	1	3.035244	12.4453	0.0006*

RAC

# Summary of Fit				
R Square	0.880502			
Adjusted R Square	0.864427			
Root Mean Square Error	0.216744			
Mean of Response	0.088184			
Observations (Excl. Missing)	119			

# Parameter Estimates				
Term	Estimate	Std Error	t Ratio	Prob > t
Intercept	0.0318643	0.041045	0.78	0.4383
IND[340]	0.7455089	0.043373	17.43	<.0001*
IND[331]	0.0717238	0.088209	0.84	0.4018
IND[1009]	-0.021119	0.051043	-0.26	0.7944
IND[1009-1]	0.101463	0.390249	0.26	0.7977
LTMSLAB A	-0.050662	0.081742	-0.61	0.5396
LTMSLAB B	-0.118614	0.055972	-2.12	0.0366*
LTMSLAB C	0.0664735	0.093806	0.72	0.4698
LTMSLAB D	0.1487138	0.088935	1.69	0.0943
LTMSLAB E	0.0827319	0.088837	1.18	0.2404
LTMSLAB A LTMSAPP1	-0.136289	0.024554	-5.54	<.0001*
LTMSLAB A LTMSAPP2	0.1237341	0.071608	1.73	0.0880
LTMSLAB B LTMSAPP1	0.0192666	0.026002	0.74	0.4590
LTMSLAB B LTMSAPP2	-0.147910	0.131581	-1.12	0.2610
LTMSLAB C LTMSAPP1	0.1014634	0.076444	1.33	0.1800
LTMSLAB C LTMSAPP2	0.002781	0.088347	0.12	0.9048
LTMSLAB C LTMSAPP3	0.1200665	0.050564	2.39	0.0191*
LTMSLAB C LTMSAPP4	-0.040335	0.130137	-0.31	0.7584
LTMSLAB D LTMSAPP1	-0.019108	0.080182	-0.24	0.8144
FUELBTD(GI0321NX10)	0.0280004	0.023742	1.19	0.2398

# Effect Tests					
Source	Nparm	DF	Squares	F Ratio	Prob > F
IND	4	4	41.195382	184.2477	<.0001*
LTMSLAB	4	4	0.411000	1.8112	0.1479
LTMSAPP LTMSLAB	10	10	1.10626	1.9722	0.0443*
FUELBTD	1	1	0.078064	1.3968	0.2398

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