Sequence V Surveillance Panel Meeting
December 13th, 2021 11 AM EST, via Webex

Roll Call:

Afton:	B. Maddock
BP:	J. Agudelo
ExxonMobil:	A. Meier, A. Montufar
Ford:	M. Deegan
General Motors:	M. Hopp
Haltermann:	P. Tumati
HCS Group:	I. Gabrel
Infineum:	C. Laufer, C. Leverett, A. Ritchie (Chair)
Intertek:	A. Lopez
Lubrizol:	A. Stevens
OHT:	J. Bowden
Oronite:	J. Martinez, R. Stockwell
Shell:	J. Hsu
SwRI:	D. Engstrom, T. Kostan, P. Lang
TEI:	D. Lanctot
TMC:	R. Grundza
Valvoline:	A. Savant
Willis Advanced Consulting:	A. Willis

Meeting Summary:

The negative from IL 21-04 was not found to be technically persuasive by more than 2/3 of B. Therefore, the ICF for AES stays in place. The 8 results with 1011-1 have been collected but the panel will need time to review offline before reconvening next week to set targets. There is about 100,000 gallons remaining of fuel, which will soon be transferred to ISO containers so the new batch blending can start. Test Severity Task Force will have its first meeting this week.

Open Actions:

1. From March 26th meeting: **Lab engineers** to meet to investigate severity shifts (share operational data, build data, ratings, etc.). 4 out of 5 lab inspections were recently completed by TMC and reports sent to OEM sponsor. Lab/Stand severity Task Force call scheduled for December 15th and lab engineers will make lab visits in early 2022.
2. From Sept 9th meeting: **Statisticians Group** led by Doyle Boese (Infineum) to provide update around potential ways to improve current lab-based system. Interim recommendation is to not adopt a stand-based system.
3. From Sept 9th meeting: **Haltermann** to report monthly inventory via email to V SP. Monthly updates are being provided.
4. From June 24th, 2020 meeting: **Haltermann** to look at fuel data from Sec 8.2.6 requirement and report back to panel. Initial data has now been provided (see appendix).
5. From Nov 29th meeting: **Haltermann** to include extra column in fuels data to indicate which fuel goes with which test.

Next call: Monday, December 20th, 2021 @ 11 AM EST via Webex

Meeting Details:

Agenda:
1. Outcome of Ballot D02 (21-04) Revision of D8256: AES ICF
2. Setting 1011-1 targets
3. New fuel batch update
4. Test Severity Task Force update
5. New business
6. Old business

1. Outcome of Ballot D02 (21-04) Revision of D8256: AES ICF
   The Chair announced that Amol Savant's negative from IL 21-04 was not found to be technically persuasive by more than 2/3 of B. Therefore, the ICF for AES stays in place.

2. Setting 1011-1 targets
   8 results have been reported. Rich Grundza (TMC) guided the panel through his presentation, the summary of which is copied below:

The table below summarizes the results both adjusted and unadjusted results, the means, and standard deviations, comparing to the original blend of 1011. PSV is milder by about 2 tenths compared to the original blend with a half standard deviation; similar situation with AEV. But the means for AES and RAC unadjusted are very close to target means.
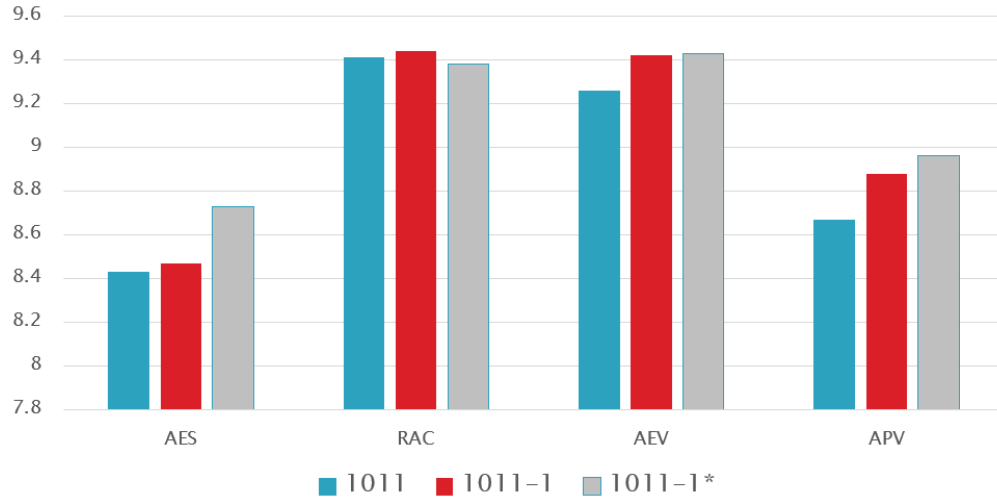
Summary of Test Results

testkey	val	ltmsdate	APPARATS	AP50	AP50 adj	AE50	AE50 adj	AES	AES adj	RAC	RACti	RAC adj
166475-VH	PC	20211027	G3	8.58	8.69	9.26	9.23	8.35	8.33	9.52	-0.73397	-0.52237
162991-VH	PC	20210923	G2	8.91	9.02	9.5	9.47	8.69	8.67	9.54	-0.7765	-0.5649
166479-VH	PC	20210923	G5	8.71	8.82	9.44	9.41	8.13	8.11	9.33	-0.4005	-0.1889
165542-VH	PC	20210923	A2	9.05	9.04	9.55	9.55	9.12	9.76	9.48	-0.6539	-0.6507
165541-VH	PC	20211010	A5	8.73	8.72	9.2	9.2	8.33	8.97	9.44	-0.5798	-0.5766
162745-VH	PC	20211012	D1	8.6	8.82	9.4	9.6	7.96	8.19	9.44	-0.5798	-0.5314
161669-VH	PC	20211023	G1	9.08	9.19	9.55	9.52	8.15	8.13	9.36	-0.4463	-0.2347
163350-VH	PC	20211121	A3	9.38	9.37	9.46	9.46	9.05	9.69	9.44	-0.57982	-0.57662
			Means	8.88	8.96	9.42	9.43	8.47	8.73	9.44	-0.59382	-0.48077
			Std dev	0.28	0.24	0.13	0.15	0.43	0.68		0.1289	0.1709
		Original	Target mean	8.67	8.67	9.26	9.26	8.43	8.43		-0.5294	-0.5294
			Target s	0.48	0.48	0.21	0.21	0.57	0.57		0.1924	0.1924

RAC in transformed (ln(10-RAC)) Units

Test Monitoring Center https://www.astmtmc.org — TMC — A Program of ASTM International

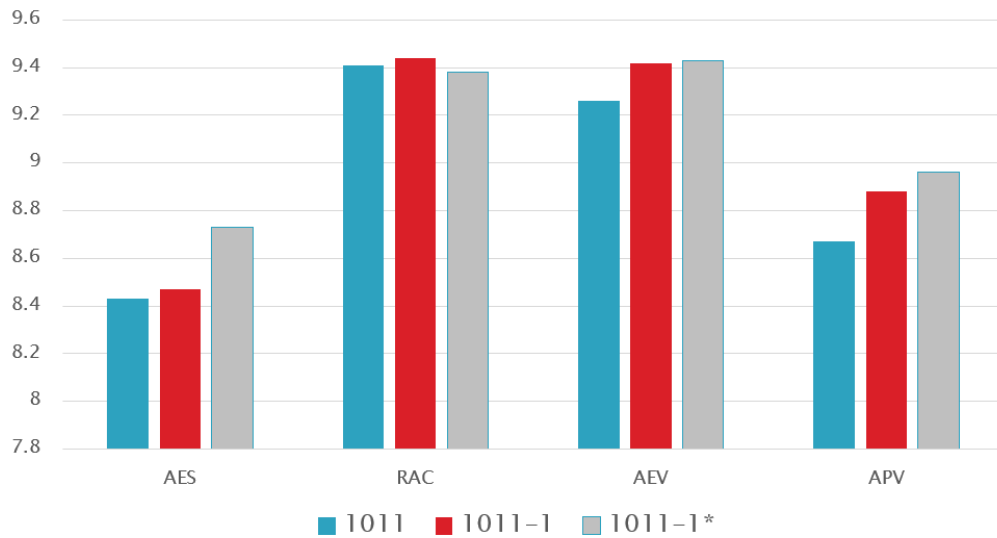The following 2 slides are graphical representations of the data above.

Comparison of Reference oil Means

RAC means calculated in transformed units (10-RAC) and converted back to original units
1011-1* Severity Adjusted Mean

Summary of Test Results

1011-1* Severity Adjusted Standard Deviation

Comments / questions from the group:
- Travis Kostan (SwRI) asked what was used to determine the means were statistically different? Rich Grundza (TMC) replied that a general linear model was employed, using current and all historical data.
- Travis asked using the current data plus all the other data going back to when? Rich confirmed that all historical data was used.
- The varnish reduction in standard deviation is concerning to Travis because it's at the top of the scale. Data is limited and if we were to apply it, it could create long term problems. Rich agreed that the standard deviations might be artificially low. Travis would like to be certain that we have a shift in mean and shift in standard deviation before changing the varnish targets, especially with a limited data size. He commented that if we're in the same ballpark, we could allow severity adjustments handle it and move forward. The sludge targets look like they can remain the same.
- Based on seeing this data, Jo Martinez (Oronite) would recommend the panel to use the 1011 target means and standard deviations for now.
- Al Lopez (Intertek) requested for more time to look at the data. AES appears the same but the varnish appears to have shifted. Looks like using a new target and the existing standard deviations would be good for now but would be supportive of more data. Rich said that in the past, we revisited targets when we have 10, 20, or 30 tests. But we've gotten to a point where we use the matrix data to determine the targets and we adjust standard deviations going forward.
- Amol Savant (Valvoline) confirmed that the group is in agreement about the AES and RAC but that we are discussing what to do with AEV and APV. He suggested going half way: use the average of the old target and new target. Travis commented that once you move targets, it's fixed. He would be in favor of looking at more data when it's available but in the meantime, suggest to not move the target. Jo agreed. Amol agreed as well.
- Travis requested for a week so the panel can have time to review the data before coming to a decision. With no objection from the panel, the Chair put this conversation on hold until next week, but stressed we do need to vote and implement the targets asap. Rich added that we will also need to address calibration periods coming up.

3. New fuel batch update

Prasad Tumati (Haltermann) updated the group that there's about 100k gallons remaining. When it reaches 75k, estimated to be early January, Haltermann will transfer the remaining fuel to ISO tanks and start blending the new batch which should take about 4 weeks.

4. Test Severity Task Force update

First Task Force meeting will be this afternoon, thanks to Charlie Leverett (Infineum) for stepping up to chair the meeting. Fuel file from TMC was circulated prior to this meeting (included in the Appendix below) that includes RVP data will be investigated by the task force. Charlie will report back to the panel next week. The engineers are a part of this group but if anyone else from the panel would like to join, please reach out to Charlie.

5. New business

None.

6. Old business
        None.

Meeting adjourned at 11:47 AM EST.

Appendix: Fuel data

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