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Issued: December 02, 2015  
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These are the unapproved minutes of the 12.01.2015 Sequence VI Surveillance Panel call.

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The meeting was called to order at 8:00 AM Central Time by Chairman Nathan Moles.

### Agenda

The Agenda is the included as **Attachment 1**.

#### 1.0 Roll Call

The Attendance list is **Attachment 2**.

## 2.0 Approval of minutes

2.1 Approval of the minutes of the 11.24.2015 meeting.

<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencevi/minutes/VIMinutes20151124ConferenceCall.pdf>

MOTION: Approve the minutes from the 11.24.2015 conference call.

[Nathan Moles, Dan Worcester, second] Approved unanimous.

## 3.0 Action Item Review

3.1 OHT to provide update on current VIE inventory and service engine order. –OHT  
There are 43 of the -1 engine remaining. The cam gears have been received and the 144 engines are being prepared for storage.

3.2 Labs reported VID engine inventory and expected depletion date of VID engines.  
-Expected life of engines range from 2016 Q1 to 2018  
Lab1: 1 engines  
Lab2: 1 engines  
Lab3: 3 engines  
Lab4: 1 engines No change in engine count.

## 4.0 Old Business

4.1 List of items to be reviewed after the Precision Matrix  
Do we really need to run three RO tests to establish the new engine for LTMS?  
Discussion of reducing the new reference requirement to two oils, then a third oil run after a defined number of candidates.  
Discussion of using FEI 2 and FEI Sum for references to match candidate pass/fail criteria.  
Discussion of evaluating 80/20 ratio of BL before to after for FEI 1 and 10/90 for FEI 2.  
Should the acceptance bands value of 1.96 be rounded up? Due to the rounding on FEI 1 and 2 the actual pass limit is 1.91 and 1.92.  
-SP chair and test sponsor to investigate what is needed to establish VID equivalent limits for VIE  
-Discussion of changing BLB1 to BLB2 delta acceptable limits  
This will be an on-going effort.

4.2 Discussion on start of precision matrix.

Run Order	SWR1	SWR2	IAR1	IAR2	LZ	Afton	Ashland	XOM	Engine Hours	
Step	SOT Engine Hours	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	Engine Hours	
		RO1010-1	RO1010-1	RO542-2	RO544	RO542-2	RO542-2	RO1010-1		
1	RO544	1.60/1.74/3.34	RO542-2	1.36/1.83/3.19	3.00/1.86/4.86	2.77/1.70/4.47	RO544	2.12/2.14/4.26	350	
2	RO544	RO1010-1	RO1010-1	RO542-2	RO544	RO542-2	RO1010-1	RO544	550	
3	RO542-2	RO542-2	RO1010-1	RO1010-1	RO1010-1	RO544	RO542-2	RO544	750	
4	RO1010-1	RO544	RO544	RO1010-1	RO544	RO1010-1	RO542-2	RO542-2	950	
5		RO544		RO542-2	RO544				1150	
6		RO1010-1		RO542-2	RO542-2				1350	
7		RO544		RO544	RO542-2				1550	
8		RO542-2		RO544	RO1010-1				1750	
9		RO542-2		RO1010-1	RO1010-1				1950	
10		RO1010-1		RO544	RO542-2				2150	
11		RO1010-1		RO542-2					2350	
EOT Engine Hours		950	2350	950	2350	2150	950	950	950	Total Runs
Runs/Engine		4	11	4	11	10	4	4	4	52

Tests are being reported for the Precision Matrix. SwRI has reported the first test on the first stand. Afton, ExxonMobil, and IAR and Lubrizol have reported their first test results and have second tests running or completing this week. Ashland will start this week. As a reminder, these tests should be reported with no engine hour or severity adjustments applied to the results.

- 4.3 Update from task force, to investigate alternative test procedure Sequence “VIF” that would improve 0W-16. – Dan Worcester/Satoshi Hirano SwRI has reported the first run on oil 543. Their second test on 542-2 will be reported this week. IAR will start their first test after stand shakedown is completed.
- 4.4 Update from task force to investigate option to prolong usable life of the available VIE engines. –Adrian Alfonso/Bill Buscher A survey was sent to get the quantity of engines each labs needs. There will be a meeting this Thursday to answer any questions on this issue.

## **5.0 New Business**

- 5.1 Chairman will be unavailable 12/23/2015-1/19/2016 Jerry Brys will be filling in.
- 5.2 Dave Glaezner sent a request to review the process for stand calibration after the Precision Matrix. See Attachment 3. There was discussion on when the second stands would start testing depending on response on the engines running several tests. There will be further discussion on this issue.

## **6.0 Next Meeting.**

The next meeting will be 12.08.2015 conference call.

The meeting adjourned at 8:31 AM.

# Sequence VI Surveillance Panel Conference Call Agenda December 1 @ 9:00-10:00AM EST

## Call-in information is included below:

Call-in Number: 866-528-2256  
Conference Code: 3744024

### 1.0) Roll Call

*Do we have any membership changes or additions?*

### 2.0) Approval of minutes

2.1 Approve the minutes from the November 24, 2015 Sequence VI Surveillance Panel.

<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencevi/minutes/VIMinutes20151124ConferenceCall.pdf>

### 3.0) Action Item Review

3.1 OHT to provide update on current VIE inventory and service engine order. –OHT

3.2 Update of VID engine inventory and expected depletion date of VID engines.

*-Expected life of engines range from 2016 Q1*

*Lab1: 1 engines*

*Lab2: 1 engines*

*Lab3: 3 engines*

*Lab4: 1 engines*

### 4.) Old Business

4.1 List of items to be reviewed after the Precision Matrix

-Do we really need to run three RO tests to establish the new engine for LTMS?

-Discussion of reducing the new reference requirement to two oils, then a third oil run after a defined number of candidates.

-Discussion of using FEI 2 and FEI Sum for references to match candidate pass/fail criteria.

- Discussion of evaluating 80/20 ratio of BL before to after for FEI 1 and 10/90 for FEI 2.
- Should the acceptance bands value of 1.96 be rounded up? Due to the rounding on FEI 1 and 2 the actual pass limit is 1.91 and 1.92.
- SP chair and test sponsor to investigate what is needed to establish VID equivalent limits for VIE
- Discussion of changing BLB1 to BLB2 delta acceptable limits

#### 4.2 Discussion on precision matrix. –Rich Grundza/Labs

Run Order	SWRI1	SWRI2	IAR1	IAR2	LZ	Afton	Ashland	XOM	Engine Hours	
Step	SOT Engine Hours	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	150Hrs Break In	Engine Hours
1	1	RO544	RO1010-1 1.60/1.74/3.34	RO542-2	RO544 1.36/1.83/3.19	RO542-2 3.00/1.86/4.86	RO542-2 2.77/1.70/4.47	RO544	RO1010-1 2.12/2.14/4.26	350
	2	RO544	RO1010-1	RO1010-1	RO542-2	RO544	RO542-2	RO1010-1	RO544	550
	3	RO542-2	RO542-2	RO1010-1	RO1010-1	RO1010-1	RO544	RO542-2	RO544	750
	4	RO1010-1	RO544	RO544	RO1010-1	RO544	RO1010-1	RO542-2	RO542-2	950
2	5		RO544		RO542-2	RO544				1150
	6		RO1010-1		RO542-2	RO542-2				1350
	7		RO544		RO544	RO542-2				1550
	8		RO542-2		RO544	RO1010-1				1750
	9		RO542-2		RO1010-1	RO1010-1				1950
	10		RO1010-1		RO544	RO542-2				2150
	11		RO1010-1		RO542-2					2350
EOT Engine Hours		950	2350	950	2350	2150	950	950	950	Total Runs
Runs/Engine		4	11	4	11	10	4	4	4	52

4.3 Update from task force, to investigate alternative test procedure Sequence “VIF” that would improve OW-16. – Dan Worcester/Satoshi Hirano

4.4 Update from task force to investigate option to use short blocks to supplement engine inventory. –Adrian Alfonso/Bill Buscher

4.5 Chairman will be unavailable 12/23/2015-1/19/2016, Jerry Brys will be filling in.

## 5.) New Business

5.1 None

## 6.) Next Meeting

Next Tuesday (reoccurring weekly meeting)

## 7.) Meeting Adjourned

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## Sequence VI Surveillance Panel and Others

Historically labs have gained calibration by participation in Industry Precision Matrix testing.

This has occurred at the conclusion of the PM, after all the data was analyzed, engine hour correction factor(s) defined, RO targets established and an LTMS system approved.

A lab/stand combination that was in the PM was then judged to be calibrated if it met all of the calibration criteria.

The Sequence VIE Precision Matrix is a little different with all stands running four tests and some running as many as ten or eleven tests.

A stand that is running four tests will not be able to have its calibration status determined until the completion of the PM.

That may take another eight or nine weeks.

The stand may very well be in limbo for that time frame.

A lab will most certainly not want to allow the stand to sit idle.

The stand/engine combination may very well be used up and unable to run any calibrated testing.

For these reasons, it is time to start considering some sort of mechanism to allow tests run in a PM stand after that stand has completed its PM tests to be considered calibrated.

I do not know the details; however, I do believe that this has been done in the past.

Of course the stand/engine combination would be subject to all of the rules of whatever LTMS system was put in place after the conclusion of the PM.

Some of this is ACC related, some of it is for our Surveillance Panel to consider.

I believe that the SP can determine the calibration dates associated with the stands.

My intent is to open discussion on the subject.

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