SEQUENCE IX SURVELLANCE PANEL Minutes

Date: 13 Jun 19

ATTENDEES	
SWRI	Khaled Rais, Christine Eickstead, Pat Lang
INTERTEK	Al Lopez, Jason Soto, Martin Chadwick
TMC	Rich Grundza
LUBRIZOL	George Szappanos
APL	Christian Muller, Tim Hadaway
INFINEUM	Doyle Boese, Andy Ritchie
FORD	Ron Romano
ORONITE	Robert Stockwell, Josephine Martinez
AFTON	Christian Porter, Todd Dvorak

Item 1	Reference Oil 224 Introduction Update, Max Events Adjustment

Martin Chadwick presented the Stat group's presentation on RO 224 targets and limits and the max-event-per-iteration adjustment.

The Stat group made the following recommendations:

Recommendations

1. Adopt N=67 RO 224 targets.

IND	Mean	s
224	2.0445 (3.68)	0.3775

2. Adjust candidates by applying the $(\text{Max Events} + 0.5)^{0.5}$ transform and using the existing AVPIE SA.

3. Evaluate reference acceptance for Max Events:
$(\text{Max Events} + 0.5)^{0.5} - (\text{AVPIE} + 0.5)^{0.5} \leq 1.3199^*$

4. Update RO 221 standard deviation (0.3609) and Severity Adjustment standard deviation (0.2856) to 0.3775.

A motion was made to adopt all of these recommendations as a set together with the following results:

Motion: Ron Romano (Ford)

Second: Christian Muller (APL)

Approve: Pat Lang (SwRI), Rich Grundza (TMC), Christian Muller (APL), Al Lopez (Intertek), Andy Ritchie (Infineum), George Szappanos (Lubrizol), Ron Romano (Ford), Robert Stockwell (Orontie), Christian Porter (Afton)

Disapprove: None

Waive: None

Action (SwRI): A message will be sent to the entire SP to announce that the motion passed, and give a two week window for any concerns to be raised.

| Item 2 | Data Processing / Calculation Verification |

George asked how we should address this item. The group had previously done calculation verifications via a round robin during test development. Should we have a data file on the TMC website with the calculations so labs can verify that they are processing the data correctly?

Rich suggested having a yearly round robin with a different data set each time to verify data processing. Results would be posted on TMC website.

Will discuss further on next call.

Action (SwRI, IAR): Get the data used for the last data processing round robin posted to the TMC website.

| Item 3 | Piston Introduction |

As previously discussed, each lab will run four tests using the two reference oils with the new pistons (rings will be introduced later). Based on the results of these runs, we will determine if a full matrix is needed.

Are you sure it is 4? I thought we agreed to share oil 220 break-in data and then run the two reference tests as normal.

| Item 4 | Form Changes |

Rich has circulated some changes to the forms to implement items we included in the procedure. These will go out for Beta testing in the next few days, and labs will have two weeks to implement the changes or raise concerns.

The change is inclusion of piston batch to form 16.

| Item 5 | Failed References / Retired Engines |

Discussion of whether or not failed references should be charted if the engine is retired due to the reference result.

General consensus is that these references should not be charted. The LTMS is designed to remove engines from the system that are past their life; charting these data points does not serve a purpose and will skew the data.

Rich: When a references fails and the lab intends to retire that engine, the lab should add a comment to the reference report to that effect. Rich will designate the reference "MC" in the LTMS and it will not be charted.