

Sequence III Surveillance Panel Meeting

Teleconference

Friday March 10, 2017 08:00 – 10:00 CST

WebEx sent separately

Agenda

As the host, I have not in the past and will not in the future record any ASTM meeting and there are no “authorized persons” that may record an ASTM meeting. As a reminder to everyone the recording of ASTM meetings is prohibited.

1.0) Attendance



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The votes for the 5 motions are included on the attendance roster.

2.0) Chairman Comments

2.1) Extra thanks to the task force for their efforts in understanding and minimizing test variation.

3.0) Approval of minutes

3.1) Minutes from 01/25/2017 WebEx Conference Meeting
Meeting minutes approved from 01/25/2017.

4.0) IIIH Action Items

4.1) Batch 4 piston updates (placed first since we are all anxious for information)

Jason Bowden started by stating that batch code 4 pistons have shipped to industry test labs that have placed orders for prove out testing. OHT also shipped batch code 4 pistons and rings to SwRI to run their 20 hour blowby screener. Jason confirmed that the balance of batch code 4 pistons arrived at OHT yesterday, OHT expects that shipment of this hardware could take place late next week. OHT’s current estimation is that batch code 4 pistons will be available for two years.

4.2) Task Force Summary. **Bowden**



170303 Summary of
IIIH Severity Task Fo

A total of four conference calls have taken place with the Task Force established to address the severity concern of the IIIH. Each Task Force meeting resulted in a significant number of action items. A reduced piston ring gap DOE was put together by the task force and the industry ran experimental tests with BC3 pistons and reduced piston ring gaps using production rings to ascertain if reduced blowby impacted test severity. Upon review by the stats group, blowby was not seen to have a significant impact on Ln(PVIS), WPD, PRET, or Ln(MRV). The Task Force will continue to work on open action items and keep the Sequence III Surveillance Panel informed.

4.3) SP votes on Task Force recommendations. **Stockwell**



MOTION #1:

The motion to require everyone to use fans immediately passed, but with two negatives, which would require a passing vote from B before implementation.

MOTION #1A:

Jason Bowden initiated a motion that all stands must use fans per the Seq. IIIH procedure. If a fan fails, replace when convenient, before the start of the next test. References started on or after May 1st 2017 must include the fans.

Jason Bowden/Addison Schweitzer

14 For

None Against

4 Waive

Discussion:

After some discussion, it was agreed that the loss of a fan should not invalidate the test. In the event of a fan failure, it should be replaced as soon as possible. The intent is to run the fans over the exhaust to standardize the test stand and extend the life of the wiring harness etc. Amol Savant expressed that he would be comfortable changing his negative vote to a positive if he had reference data with the fans installed. The motion was modified per the agreement and approved.

MOTION #2: Jason Bowden motioned that language be added to the Seq. IIIH procedure stating that no insulation should be used on the blowby evacuation system.

Jason Bowden/Addison Schweitzer

17 For

None Against

1 Waive

MOTION #3: Jason Bowden motioned that the schematic (shown in figure A3.1) for the canister in the blowby circuit be modified to be shown in a horizontal line.

Jason Bowden/Amol Savant

17 For

None Against

1 Waive

ACTION ITEM: George Szappanos to modify the schematic for the canister in the blowby circuit be modified to be shown in a horizontal line.

MOTION #4: Jason Bowden motioned that labs must run entire calibration period on same batch of pistons, piston rings, dealer engines, and/or FCA stored engines the stand was referenced on.

Jason Bowden/Rich Grundza (Motion tabled)

Discussion: There was much discussion of establishing the critical hardware in the IIIH test type in the test procedure. The pistons, piston rings, and engine were proposed to be a part of the critical hardware for the IIIH. Bob stated that when the FCA engines become available, a reference test would be required. The dealer engines and FCA stored engines are separate critical hardware and will require a reference to bring online. The industry should strive to transition to the FCA stored engines at around the same time. The industry would like to establish a date for introduction of the FCA stored engines due to the preservation process being a key difference in the engine's storage. The group would like to suspend the use of the FCA stored engine and utilize dealer engines for the next round of referencing. Jeff Betz confirmed that the FCA stored engines could be tracked by the serial numbers (2017 year coded). There are approximately 30 engines with 2016 year code although they were built in the same batch. The part number for the FCA stored engines are unique, the bar code on the engine is not. Bob stressed that a field would need to be added to the final reports with the part number. Jeff stressed that there is no difference between the dealer engines versus the FCA stored engines. Calibration periods could be adjusted by TMC if a redistribution of hardware was decided. A survey of the remaining dealer engines in the industry needs to be acquired and distributed to the industry for consideration. Industry test labs to keep the Surveillance Panel informed to make the transition to FCA stored engines.

ACTION ITEM:

Industry test labs agreed to establish current inventory of dealer engines for redistribution within the industry.

ACTION ITEM:

Industry test labs took as an action item to send an email copying Jeff and Haiying with regards to ordering FCA engines to resolve any remaining procurement issues.

ACTION ITEM:

The labs will determine the timing and details of engine redistribution.

Motion tabled until next meeting

4.3) SwRI blow-by experiments Chaudhry

Ankit presented the experimental data generated by SwRI with different batch codes of IIIH hardware. This experiment was run with a used engine. Variations of pistons and rings were utilized to acquire blowby over 20 hour intervals. The batch code 2 and batch code 4 pistons blowby levels were right on top of each other using batch code 3 rings whereas the batch code 3 pistons and rings displayed higher blowby. Ankit confirmed that this was a different engine due to the loss of response of the previous engine.

Robert Stockwell requested an update on completed and actively running reference tests on batch code 4 pistons and rings. Addison commented that the current reference test on batch code 4 pistons and rings was trending well with regards to blowby. The initial blowby was 51.8 LPM and the blowby trend is comparable to BC2 performance. Ed Altman commented that the reference that Afton just completed on batch code 4 pistons and rings displayed significantly lower blowby. PVIS was significantly milder on 438-1 on BC4 hardware versus BC3, but not quite as mild as BC2 hardware. Oil consumption was reduced for this test as well.



4.5) Afton presentation about surface finish and recommendations. **Miller.**

Delayed until the next meeting

5.0) **Old Business**

The demand for Seq. IIIF & G both still remain higher than the Seq. III Surveillance Panel originally estimated. OHT currently has approximately a one month inventory supply of the OHT3H-058-1 ROCKER ARM ASSY. OHT also has approximately a 4 month supply of the original lower and upper #2 flange main bearings (OH-104 & OH-105).

OHT would like to request a discussion and motion on how to introduce the reuse of the rocker arm assemblies and, if necessary, the introduction of the two new #2 main bearings.

Jason would like for an updated industry inventory for the IIIF/IIIG to be compiled to provide more accurate estimations on remaining hardware.

ACTION ITEM:

Robert Stockwell to survey the remaining inventory in the test labs for the IIIF/IIIG test types.

ACTION ITEM:

Jason Bowden would like to put together a motion for the re-use of rocker arm assembly OHT3H-058-1. IAR and SwRI committed to putting together a procedure to re-use this hardware.

Jason stated that there is approximately a 4 month supply remaining of the original lower and upper #2 flange main bearings. From Jason's knowledge, the bearing material content is the same, but the process to manufacture them is slightly different. The new bearing uses a cast Pb/Sn/Cu coating versus the old bearing that was sintered,

6.0) **New Business**

Approve the use of batch code 4 pistons and rings. Bob recommended that the system should be allowed to work. If calibration is obtained, the stand moves on calibrated with severity adjustments corresponding to the batch code 4 performance.

MOTION: Ed Altman motioned to introduce batch code 4 pistons and batch code 4 rings with a successful reference test for each stand using the level 2 ei alarm limit from the LTMS for IIIH/IIIHA/IIIHB.

Seconded by Addison Schweitzer

16 For

None Against

1 Waive

Discussion: Andy Ritchie was concerned that two reference tests should be required to reset the charts corresponding to batch code 4 severity. The intent of this motion is to keep the batch code 3 reference results in the LTSM charts for the IIIH. Doyle reminded the Surveillance Panel that the Level 2 ei alarm should be considered due to the nature of the motion regarding a batch code hardware change.

7.0) **Review / Update Scope and Objectives**

8.0) **Next Meeting**

Thursday March 30th 10:00 EST

9.0) **Meeting Adjourned**