Cummins Surveillance Panel Meeting Minutes

August 6, 2025, 13:00-14:00 CST

Participants:

Afton – Joe Hoehn, Amanda Stone

Chevron Oronite – Josephine Martinez, Ramoun Mourhatch, David Lee

Cummins – Phil Shelton

Exxon Mobil – Mike Shea

Infineum – Andrew Smith

Intertek – Garrett White, Greg Dannheim, Josh Ward

Lubrizol –Austin Brininger, Todd Dovrak, Robert Slocum

SwRI – Joe Moore, Bob Warden, Jose Starling

TEI – Dan Lanctot

TMC – Sean Moyer

Agenda:

- ISB Camshaft rejection criteria
- ISB new turbo speed sensor
- ISM Kit Availability
- ISB ICF Review
- ISBV target review

ISB Camshaft rejection criteria:

- The current reject rate is around 70-90%, resulting in around 88 total kits
- 25% of rejected cams have 1 pit, another 25% would have 1 pit on intake and 1 on exhaust lobes
    - If these cams were used, it is likely that outlier screening would catch these.
    - Using this would result in around 300 usable cams. TEI to check on specific numbers of cams already inspected that fall into those categories.
- Ordering a new batch would take a few months, re-grinding would also take time though we do not have an estimate.
    - A new batch would likely be of a similar quality with a similar rejection rate.
    - Cummins believes this is a casting issue, not machining.

    - Previous attempts to re-grind camshafts did not result in a significant number of usable cams.
- Cummins currently does not accept the cams we reject back into their system.
    - They have no interest in using cams after they have been handled by TEI or others.
- Pits outside of 5-10 degrees from the peak of the camshaft lobe may not be a problem from a tribology perspective.
    - Current TEI procedure is to reject anything with a pit within a half inch of the peak, not using degree offset.
- There is some reluctance among the panel to widen the rejection criteria, particularly without running some testing on it.
    - There is a possibility getting some ASTM funding to help labs run.
- It may be possible to add a camshaft comparison to the upcoming API funded matrix.
    - May move the number of tests from 20 to 24 or 28.

ISB New Turbo Speed Sensor:

- The speed sensor we've been using is now obsolete.
- IAR, SwRI and LZ have run with the new sensor without issue.

ISM Kit Availability:

- One of the rocker arms has been unavailable, new ones are in transit to Phil.
    - He is expecting around 100 rocker arms at 3 needed per kit.
    - They should be delivered within 2 weeks.
- TEI found some rocker arms at dealers around the country, have not been ordered.
- Adjusting screws are the next batched parts to run out, TEI has the next batch in hand.
    - The ISM LTMS does not have a reduced K option for bringing in parts.
    - The labs will likely need to do a coordinated reference to bring these in but it is far enough out that we do not have a good time estimate.

ISB ICF Review:

- We now have 5 more results from 2 of the 3 labs involved in the matrix.
- Camshaft wear has remained stable so no new correction is recommended.
- Tappet wear has shifted, a new correction is recommended that will depend on the inclusion of stand B5.
    - Stand B5 is a new stand with only 2 tests run, both runs are more mild on tappet wear than any other stand in the industry.
    - SwRI has another reference that will be submitted within the week, results are within a normal range of their other tests.

Motion: The panel moves to update the tappet ICF to +1.1153 based on the n=7 analysis which excludes the first 2 tests on stand B5. The ICF will effect all candidate tests completed 8/6/2025 or after and all reference tests completed on batch GHO hardware will be resubmitted.

Andrew Smith motions, Austin Brininger seconds

For: SwRI, LZ, Infineum, IAR, Afton, Exxon, Chevron Oronite, TMC

Against:

Waive: TEI

Motion carries.

ISBV Target Review:

- There has been a shift in severity on 822-2 around July or August 2024
    - It is still within the LTMS range but are slightly severe of target.
- It's possible the shift is due to engine age, but the stats group hasn't been able to analyze this due to that datapoint being missing in some charted tests.
    - Other tests have an engine age adjustment, adding something like this might bring results back on target.

ISBV 4 vs 6 cSt and Potential New RO:

- RO 834 at 4 cSt holds more soot than RO 822 though it is "worse" performing oil.
- There may be a statistical issue with comparing the 90-pass shear against the aged oil viscosity at low soot percentage.
    - Soot at 6 cSt may need to be investigated as a possible parameter.
- The test development task force had an action item to find a new RO for the ISBV156 test that is more representative of current technology.
    - This will need to wait until limits are set and the panel decides a new RO is needed.

Next Steps:

- Labs to add ISBV block and rebuild hours to the LTMS for the stats group to analyze.
- The panel will continue to monitor the ISBV severity shift and update targets or add adjustments as needed.
- Labs to resubmit ISB wear references for batch GHO hardware.
- Josh Ward and Andrew Smith to discuss the ISB wear camshaft issue with API and the potential of expanding the upcoming matrix.

Next Meeting: Within the next 2-3 weeks.