

## Sequence IIIH Task Force to Improve Precision

1/13/2016

### summary of discussions held on 12/16, 12/22, 1/6, and 1/12

#### Review of followup test by Lab D on RO434

- continued mild result
- in depth data review comparing operational data
- no apparent relationship with any measured parameter
- CONCLUSION: the source of the variability is with a parameter either not being measured, or not being measured accurately
- ACTION: continue to search for the source of variability (in process)

#### Discussion about stand differences

- ACTION: Ed to send photos of stand and engine (done)
- ACTION: Labs to provide photos of crankcase ventilation system (done)
- CONCLUSION: Discovered differences between labs that might affect the restriction and flow of blowby gas
- ACTION: task force to revise procedure to standardize the hardware
- Ed feels that other parts of the test stand and engine should also be reviewed
- ACTION: labs to provide photos of entire stand for review by the TF (in process)

#### Discussion about engine operation difficulties

- Several labs have experienced issues with engine “de-rate” or “limp home mode”
- ACTION: need Chrysler’s help to understand problem and implement a robust solution (in process)
- ACTION: labs to capture ECU parameters by monitoring the CANbus (in process)
- ACTION: need Chrysler’s help to capture proprietary parameters related to oil pressure, oil temp, and oil pressure solenoid position (in process)

#### Discussion regarding engine build differences

- CONCLUSION: Round robin measurements of cylinder bore diameter and surface finish show minor differences; measurement resolution may prohibit a more thorough understanding
- ACTION ITEM: labs to bore/hone a block and send to Jeff Betz at Chrysler for measurement
- ACTION ITEM: review of the surface finish data suggests that new limits need to be established for Rz and Rzk to address consistently out of spec measurements

#### Discussion on engine swapping between labs

- ACTION: the group suggested that SWRI should build an engine that Afton would run which might reveal whether the severity issue is engine-build or test operation related (12/22)
- During the 1/6 Seq III SP call Afton voiced their concern that the test would not be valuable
- ACTION: on 1/8 an alternate suggestion was offered by LZ to run an engine built by Afton
- During the 1/12 TF call Afton believed that continued review of the test stands should be done first

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