Sequence III Surveillance Panel Meeting

Teleconference
Tuesday June 12, 2018 10:00 – 12:00 EST
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

2.0) Chairman Comments

3.0) Approval of minutes

3.1) Minutes from 5/8/2018 Meeting

4.0) IIIH Action Items

4.1) Coolant Flow Discussion and Motions – **Szappanos**

George Szappanos presented coolant flow discussion and presented motions that will later be e-balloted after discussion during the conference call.

Item 1:

A variable frequency drive (VFD) may be used instead of a 2-way valve to control pump speed and coolant flow. If necessary, a flow restrictor may be incorporated to achieve the required system pressure *in place of the 2-way valve.*

Seconded by Ed Altman
Motion passed unanimously

Item 2:

The use of the 3-way valve is optional if the *process* water flow through the main engine heat exchanger is controlled using a suitable 2-way valve. *It was requested that a secondary FCM diagram be drawn and referenced in the procedure (diagrams A and B).*

Seconded by Addison Schweitzer
Motion was tabled and will be E-balloted

Discussion: Amol Savant discussed a concern about the 3-way valve that is currently specified, the Surveillance Panel agreed that the Badger meter 3-way valve would be worded as "has been found suitable."

ACTION ITEM: Amol Savant will take as an action item to provide the information from the 3-way valve being used at Valvoline and will present a motion for the next Sequence III Surveillance Panel Meeting. Ed Altman proposed an E-ballot in place of a meeting.

Item 3:

"A schematic of a suitable flow system for the engine coolant is shown in Fig. 1."

ACTION ITEM: George Szappanos to take as an action item to measure the flow on the inlet and outlet side of the engine to prove out Item 3 allowing flexibility of the placement of the flowmeter.

Item 4 and 5:

Correct MicroMotion flow meter part numbers:

R200S418NCAMEZZZZ meter

1700I13ABMEZZZ transmitter

Edit footnote: Any other *Coriolis* meter used shall meet or exceed a mass flow accuracy of +0.75% and mass flow repeatability of +0.50%.

Amol Savant discussed if there was a significance on being air to open versus air to close on the 2-way A-Trim control valve. After some discussion, the decision to have an air to open versus air to close actuation would be up to lab discretion and safety.

ACTION ITEM:

The following footnote will be added to the e-ballot that air to open versus air to close is at lab's discretion.

4.2) IIIH EAM Update – Ankit Chaudhry and Addison Schweitzer

Ankit Chaudhry and Addison Schweitzer made the appropriate changes to the IIIH EAM that were approved by the Sequence III Surveillance Panel at the meeting on May 8. Rich plans to release revision 1 as June 2018 and enter the revisions on the revision sheets. The individual revised sheets will contain the revisions and revision date. The draft version will be on the website in the archive folder. Rich plans to have Revision 1 of the IIIH EAM posted to the TMC website late this week.

Jason Bowden confirmed that the fixed phaser fixtures are in stock at OHT, if any labs are interested, they are encouraged to contact OHT.

ACTION ITEM:

Jason Bowden will review the availability of BC5 piston rings and advise the Surveillance Panel on the remaining inventory.

Jason Bowden confirmed on the call that over 300 runs of BC5 piston rings remained in inventory

ACTION ITEM:

Todd Dvorak to take as an action item to develop an action plan on how best to introduce the next batch of piston rings.

5.0) <u>Old Business</u>

6.0) <u>New Business</u>

Proposed procedural clarification. This would be an information letter item.

12.11.2 Inspect the test records for instances of downtime (excluding the initial oil level run of the test), and record any such instances on Form 14, Downtime and Outlier Report Form, in standardized report form set. When performing the oil level adjustment at each 20 h interval, identify as downtime any time in excess of 60 min from the time when the engine ramps down until the test is back on test operating conditions. *If the test is interrupted during test conditions, downtime is accumulated until back at test conditions.*

Enter the total downtime on Form 13, Downtime Summary, in standardized report form set. If the downtime exceeds either a total of 36 h, or exceeds 24 h in the last 45 h of the test time, note on Form 1 that the test is invalid.

Discussion: Cliff Salveson discussed if a shutdown between the timing run and on test should be considered downtime.

MOTION:

Seconded by Ed Altman
Motion passes unanimously

ACTION ITEM:

Cliff Salveson to take as an action item to draft wording for inclusion in 12.11.2 to better define downtime from On Test Conditions.

7.0) Review / Update Scope and Objectives

8.0) Next Meeting

Tuesday July 24th, 2018 at 9:00 AM CDT

9.0) Meeting Adjourned

June 12th, 2018 at 10:04 AM CDT

ASTM Sequence III Surveillance Panel (22 Voting members)

date: 6-12-2018

Signature R Stockwell

	Name/Address	Phone/Fax/Email		
✓	Jorge Agudelo	jorge.agudelo@bp.com	Voting Member	Present_____
✓	Ed Altman	ed.altman@aftonchemical.com	Voting Member	Present_____
	Jeff Betz	jeff.betz@fcagroup.com	Voting Member	Present_____
✓	Jason Bowden	jhbowden@ohtech.com	Voting Member	Present_____
	Ian Elliott	IanElliott@chevron.com	Voting Member	Present_____
✓	Richard Grundza	reg@astmtmc.cmu.edu	Voting Member	Present_____
	Jeff Hsu, PE	j.hsu@shell.com	Voting Member	Present_____
	Teri Kowalski	teri.kowalski@toyota.com	Voting Member	Present_____
2 ✓	Dan Lanctot	dlanctot@tei-net.com	Voting Member	Present_____
	Patrick Lang	plang@swri.org	Voting Member	Present_____
✓	Dave Passmore	dpassmore@imtsind.com	Voting Member	Present_____
	Michael Raney	michael.p.raney@gm.com	Voting Member	Present_____
	Andrew Ritchie	andrew.ritchie@infineum.com	Voting Member	Present_____
✓	Ron Romano	rromano@ford.com	Voting Member	Present_____
9 ✓	Cliff Salvesen	clifford.r.salvesen@exxonmobil.com	Voting Member	Present_____
10 ✓	Amol Savant	acsavant@valvoline.com	Voting Member	Present_____
✓	Addison Schweitzer	addison.schweitzer@intertek.com	Voting Member	Present_____
	Greg Shank	greg.shank@volvo.com	Voting Member	Present_____
	Scott Stap	scott.stap@tgidirect.com	Voting Member	Present_____
✓	George Szappanos	george.szappanos@lubrizol.com	Voting Member	Present_____
✓	Haiying Tang	HT146@chrysler.com	Voting Member	Present_____
	Prasad Tumati	ptumati@jhaltermann.com	Voting Member	Present_____

ASTM Sequence III Surveillance Panel (22 Voting members) date:

Name/Address	Phone/Fax/Email		Signature
Ricardo Affinito	affinito@chevron.com	N-V Member	Present_____
Art Andrews	arthur.t.andrews@exxonmobil.com	N-V Member	Present_____
Robert Bacchi	robert.bacchi@basf.com	N-V Member	Present_____
✓ Doyle Boese	doyle.boese@infineum.com	N-V Member	Present_____
Adam Bowden	adbowden@ohtech.com	N-V Member	Present_____
Dwight H. Bowden	dhbowden@ohtech.com	N-V Member	Present_____
✓ Matt Bowden	mjbowden@ohtech.com	N-V Member	Present_____
Jerome A. Brys	jerome.brys@lubrizol.com	N-V Member	Present_____
Jessica Buchanan	jessica.buchanan@lubrizol.com	N-V Member	Present_____
Bill Buscher III	william.buscher@intertek.com	N-V Member	Present_____
Bob Campbell	bob.campbell@aftonchemical.com	N-V Member	Present_____
Domingo Carreon	domingo.carreon@intertek.com	N-V Member	Present_____
Jim Carter	jcarter@gageproducts.com	N-V Member	Present_____
Chris Castanien	chris.castanien@nesteoil.com	N-V Member	Present_____
Timothy L. Caudill	tlcaudill@ashland.com	N-V Member	Present_____
Martin Chadwick	martin.chadwick@intertek.com	N-V Member	Present_____
✓ Ankit Chaudhry	ankit.chaudhry@swri.org	N-V Member	Present_____
Jeff Clark	jac@astmtmc.cmu.edu	N-V Member	Present_____
✓ Sid Clark	sidney.clark@swri.org	N-V Member	Present_____
Tim Cushing	timothy.cushing@gm.com	N-V Member	Present_____
Phil Davies	daviesjp@bp.com	N-V Member	Present_____
✓ Lisa Dingwell	Lisa.Dingwell@AftonChemical.com	N-V Member	Present_____
✓ Todd Dvorak	todd.dvorak@aftonchemical.com	N-V Member	Present_____
Frank Farber	fmf@astmtmc.cmu.edu	N-V Member	Present_____
Joe Franklin	joe.franklin@intertek.com	N-V Member	Present_____
Gordon Farnsworth	gordon.farnsworth@infineum.com	N-V Member	Present_____
Rolfe Hartley	rolfehartley@gmail.com	N-V Member	Present_____
Karin E. Haumann	karin.haumann@shell.com	N-V Member	Present_____

1/27/17

Kath Caller 9 ?

ASTM Sequence III Surveillance Panel (22 Voting members) date:

Name/Address	Phone/Fax/Email		Signature
Jason Holmes	jason.holmes@basf.com	N-V Member	Present_____
Travis Kostan	travis.kostan@swri.org	N-V Member	Present_____
Walter Lerche	walt.lerche@gm.com	N-V Member	Present_____
✓ Charlie Leverett	charlie.leverett@yahoo.com	N-V Member	Present_____
Jim Linden	lindenjim@jlindenconsulting.com	N-V Member	Present_____
Scott Lindholm	scott.lindholm@shell.com	N-V Member	Present_____
Michael Lochte	Michael.lochte@swri.org	N-V Member	Present_____
Jo Martinez	JoMartinez@chevron.com	N-V Member	Present_____
James Matasic	james.matasic@lubrizol.com	N-V Member	Present_____
Mike McMillan	mmcmillan123@comcast.net	N-V Member	Present_____
✓ Kevin O'Malley	kevin.omalley@lubrizol.com	N-V Member	Present_____
Mark Overaker	mhoveraker@jhaltermann.com	N-V Member	Present_____
Christian Porter	christian.porter@aftonchemical.com	N-V Member	Present_____
Phil Rabbat	phil.rabbat@basf.com	N-V Member	Present_____
Scott Rajala	srajala@ilacorp.com	N-V Member	Present_____
Bob Salgueiro	bob.salgueiro@infineum.net	N-V Member	Present_____
Elisa Santos	elisa.santos@infineum.com	N-V Member	Present_____
Hirano Satoshi	satoshi_hirano_aa@mail.toyota.co.jp	N-V Member	Present_____
Philip R. Scinto	prs@lubrizol.com	N-V Member	Present_____
Thomas Smith	trsmith@valvoline.com	N-V Member	Present_____
Robert Stockwell	robert.stockwell@chevron.com	N-V Member	Present_____
Chris Taylor	chris.taylor@vpracingfuels.com	N-V Member	Present_____
Ben Weber	bweber1@sat.rr.com	N-V Member	Present_____
Angela Willis	angela.p.willis@gm.com	N-V Member	Present_____

Updated 20170905, 20180105 added Domingo, 20180122 removed Terry Bates, 20180130 removed Bob Olree, 20180212 removed Rutherford, 20180511 removed Heimrich, Johnson

D8111 Seq IIIH

Cooling system configuration corrections and revisions

06/05/18

Item 1 -

- Add a footnote to Table 3 for the 2-way coolant flow control valve (superscript D) stating: "A variable frequency drive (VFD) may be used instead of a 2-way valve to control pump speed and coolant flow. If necessary, a flow restrictor may be incorporated to achieve the required system pressure".
  [many test types achieve as good or better control with this method which has numerous other advantages]

TABLE 3 Control Parts for the FCM

Part Name	Supplier[A]	Part Number	Description
2-way coolant flow control valve	Badger Meter Inc.	9003GCW36SV3A29L36	2 in., 2-way air to close
Heat exchanger	Kinetic Engineering Corp.		Elanco M-71-FL heat exchanger[B]
Coolant micromotion Coriolis flow meter	Micro Motion Inc.	9003TCW36SV3AXXL36[C]	
Fuel temperature heat exchange	Laboratory determined		
3-way coolant temperature control valve	Badger Meter Inc.	9003TCW36SV3AXXL36	2 in. Globe cast 3-way wafer -NPT316/316L stainless, size 35 actuator air to close 3 psi to 15 psi 3 springs
Oil temperature control valve	Badger Meter Inc.	1002GCN36SVCSALN36	½ in. 2-way Research valve, A-trim
Drive shaft			Driveshaft w/1410 U-Joints

[A] Contact information for the suppliers is given in Appendix X3.
[B] Tube and shell heat exchanger is an acceptable alternative.
[C] This model has been found satisfactory and is recommended.[10] Any other model used shall meet or exceed a mass flow accuracy of ±0.50 % and mass flow repeatability of ±0.05 %.

Item 2 -

- Add a footnote to Table 3 for the 3-way coolant flow control valve (superscript E) stating: “the use of the 3-way valve is optional if the cooling water flow through the main engine coolant heat exchanger is controlled using a suitable 2-way valve.”
  [other test types allow this alternate configuration, and will improve the IIIH’s coolant pressure control]

TABLE 3 Control Parts for the FCM

Part Name	Supplier[A]	Part Number	Description
2-way coolant flow control valve	Badger Meter Inc.	9003GCW36SV3A29L36	2 in., 2-way air to close
Heat exchanger	Kinetic Engineering Corp.		Elanco M-71-FL heat exchanger[B]
Coolant micromotion Coriolis flow meter	Micro Motion Inc.	9003TCW36SV3AXXL36[C]	
Fuel temperature heat exchange	Laboratory determined		
3-way coolant temperature control valve	Badger Meter Inc.	9003TCW36SV3AXXL36	2 in. Globe cast 3-way wafer -NPT316/316L stainless, size 35 actuator air to close 3 psi to 15 psi 3 springs
Oil temperature control valve	Badger Meter Inc.	1002GCN36SVCSALN36	½ in. 2-way Research valve, A-trim
Drive shaft			Driveshaft w/1410 U-Joints

[A] Contact information for the suppliers is given in Appendix X3.
[B] Tube and shell heat exchanger is an acceptable alternative.
[C] This model has been found satisfactory and is recommended.[10] Any other model used shall meet or exceed a mass flow accuracy of ±0.50 % and mass flow repeatability of ±0.05 %.

Item 3 -

- modify section 6.6.2.2 (Engine Cooling System) with: “A schematic of ~~the required~~ a suitable flow system for the engine coolant is shown in Fig. 1.” to allow flexibility in the location of the components (for example, flow meter placement after vs before the engine)
  [the current configuration is a carryover from the IIIG. Flexibility will allow better use of space.]

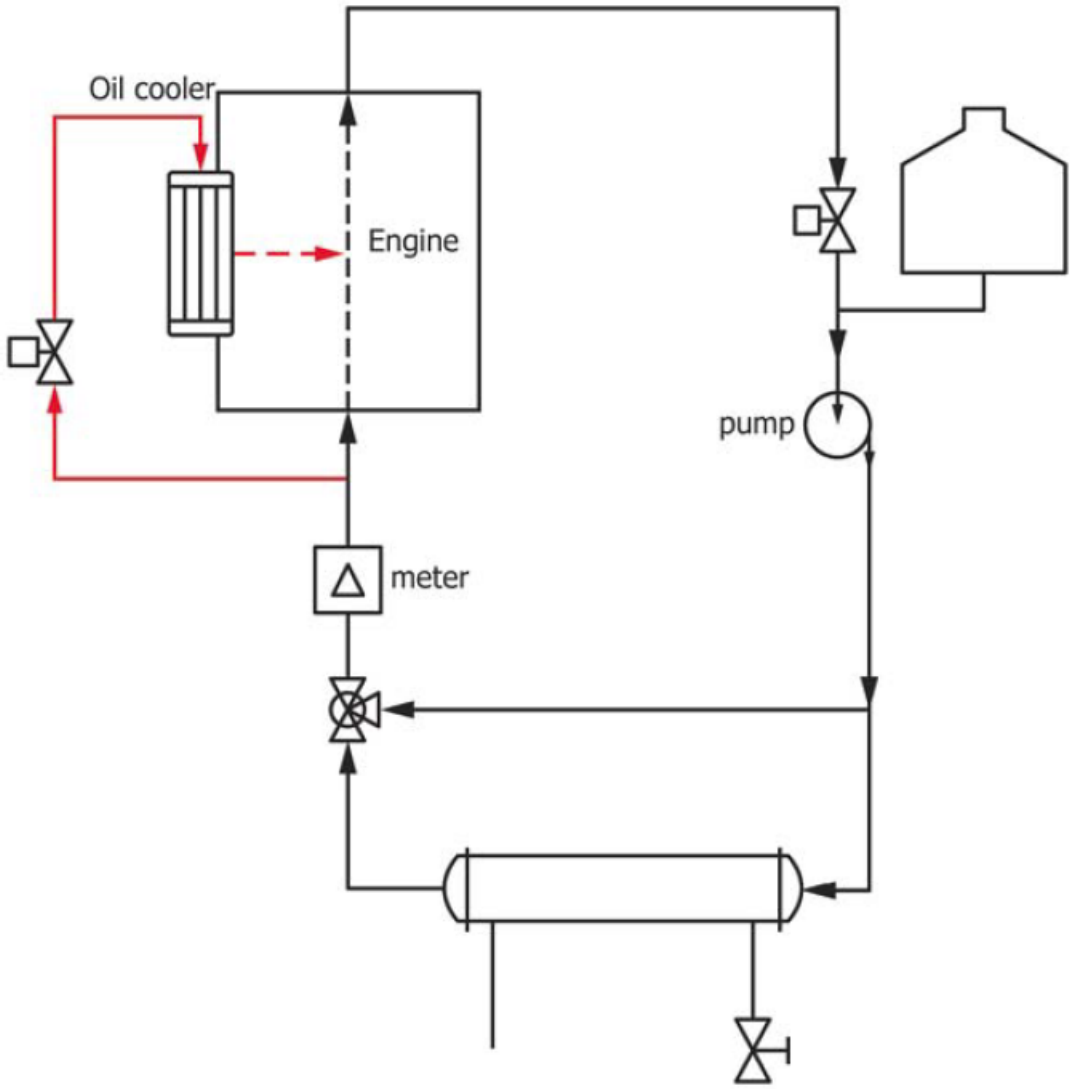

FIG. 1 Schematic of Flow System for Engine Coolant

Item 4 -

- At some point a control valve part number was pasted over the previously correct values for the recommended flow meter: R200S418NCAMEZZZZ meter, 1700I13ABMEZZZ transmitter; the table needs to be corrected with those numbers

TABLE 3 Control Parts for the FCM

Part Name	Supplier[A]	Part Number	Description
2-way coolant flow control valve	Badger Meter Inc.	9003GCW36SV3A29L36	2 in., 2-way air to close
Heat exchanger	Kinetic Engineering Corp.		Elanco M-71-FL heat exchanger[B]
Coolant micromotion Coriolis flow meter	Micro Motion Inc.	9003TCW36SV3AXXL36[C]	
Fuel temperature heat exchange	Laboratory determined		
3-way coolant temperature control valve	Badger Meter Inc.	9003TCW36SV3AXXL36	2 in. Globe cast 3-way wafer -NPT316/316L stainless, size 35 actuator air to close 3 psi to 15 psi 3 springs
Oil temperature control valve	Badger Meter Inc.	1002GCN36SVCSALN36	½ in. 2-way Research valve, A-trim
Drive shaft			Driveshaft w/1410 U-Joints

[A] Contact information for the suppliers is given in Appendix X3.
[B] Tube and shell heat exchanger is an acceptable alternative.
[C] This model has been found satisfactory and is recommended.[10] Any other model used shall meet or exceed a mass flow accuracy of ±0.50 % and mass flow repeatability of ±0.05 %.

Part number decoder: R200S418NCAMEZZZZ

Description		
Sensor type	R	R series
Model — Base model	200	2-inch (50 mm)
Model type — Base model	S	316 stainless steel
Process connections	*418*	*2-inch CL150 ASME B16.5 F316/F316L Weld neck flange*
Case options	*N*	*Standard case*
Electronics interface	*C*	*Integrally mounted Model 1700 or 2700 transmitter.*
Conduit connections	*A*	*No gland*
Approvals	*M*	*Micro Motion Standard (no approval)*
Languages	*E*	*English installation manual*
Calibration	*Z*	*0.5% mass flow calibration*
Future option 1	*Z*	*Reserved for future use*
Measurement application software	*Z*	*No measurement application software*
Factory options	*Z*	*Standard product*

Accuracy and repeatability on liquids and slurries

Performance Specification	Calibration code Y	Calibration code A
Mass flow accuracy(1)	±0.5% of rate	±0.4% of rate
Volume flow accuracy(1)	±0.05% of rate(2)	±0.4% of rate
Mass flow repeatability	±0.25% of rate	±0.2% of rate
Volume flow repeatability	±0.25% of rate	±0.2% of rate
Density accuracy	±0.01 g/cm³ (±10.0kg/m³)	±0.003 g/cm³ (±3.0kg/m³
Density repeatability	±0.005 g/cm³ (±5.0kg/m³)	±0.0015 g/cm³ (±1.5kg/m
Temperature accuracy	±1 °C ±0.5% of reading	
Temperature repeatability	±0.2 °C	

(1) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.
(2) Valid at calibration conditions.

Performance specification	All models
Mass flow accuracy(1)	±0.75% of rate
Mass flow repeatability	±0.5% of rate
Temperature accuracy	±1 °C ±0.5% of reading
Temperature repeatability	±0.2 °C

(1) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.

From meter data sheet:

Calibration

Code	Calibration option
Y	0.5% mass flow and 0.01 g/cm³ (10 kg/m³) density calibration (±0.5% volume flow)
A	0.4% mass flow and 0.003 g/cm³ (3.0 kg/m³) density calibration (±0.5% volume flow)
Z	0.5% mass flow calibration

Item 5 -

- The performance specs in the footnote don't match that of the recommended meter. Suggest the wording be changed to: "Any other meter used shall meet or exceed a mass flow accuracy of ±0.75 % and mass flow repeatability of ±0.50%". Note that the word "model" was replaced with "meter" so as to make it clear to allow other brands of meter meeting the spec.
- http://www.emerson.com/documents/automation/product-data-sheet-r-series-sensor-en-66048.pdf

[A] Contact information for the suppliers is given in Appendix X3.
[B] Tube and shell heat exchanger is an acceptable alternative.
[C] This model has been found satisfactory and is recommended.[10] Any other model used shall meet or exceed a mass flow accuracy of ±0.50 % and mass flow repeatability of ±0.05 %.