



# Test Monitoring Center


Carnegie Mellon University  
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>  
412-365-1000

MEMORANDUM: 11-060

DATE: December 1, 2011

TO: Larry Hamilton, Chairman, L-60-1 Surveillance Panel

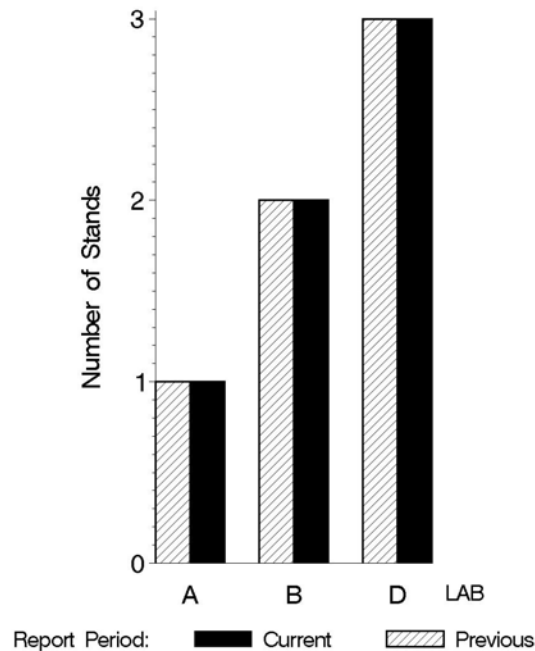
FROM: Scott Parke 

SUBJECT: L-60-1 Testing from April 1, 2011 through September 30, 2011

A total of 16 L-60-1 tests were reported to the Test Monitoring Center during the period from April 1, 2011 through September 30, 2011. Following is a summary of testing activity this period.

	Reporting Data	Calibrated on 9-30-11
Number of Labs	3	3
Number of Stands	6	6

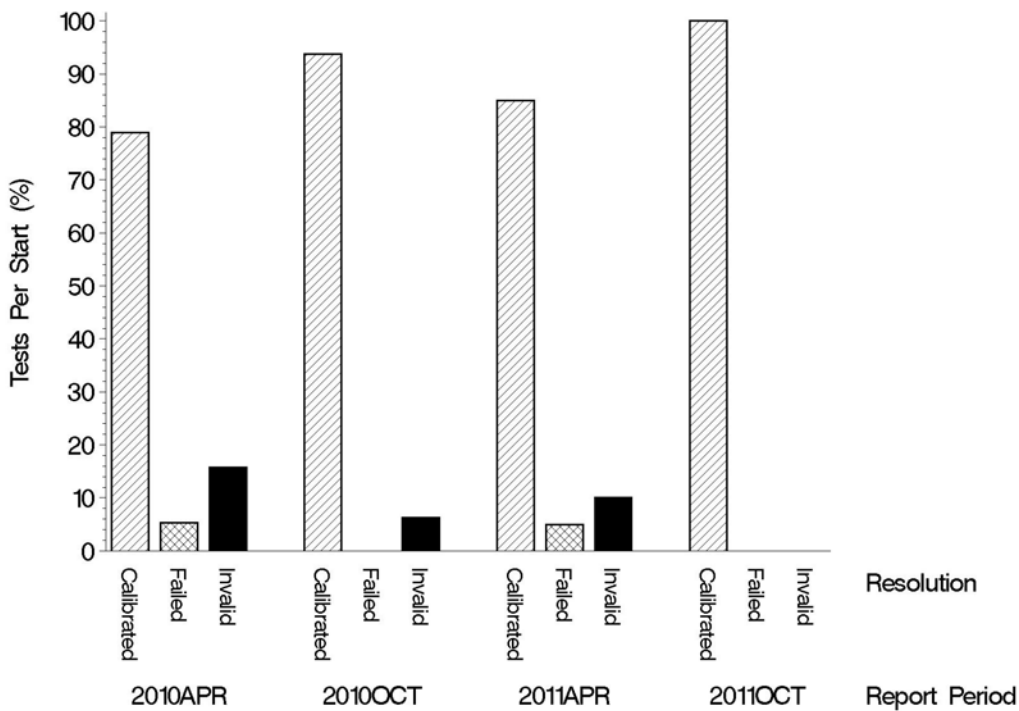
BY-LAB STAND DISTRIBUTION



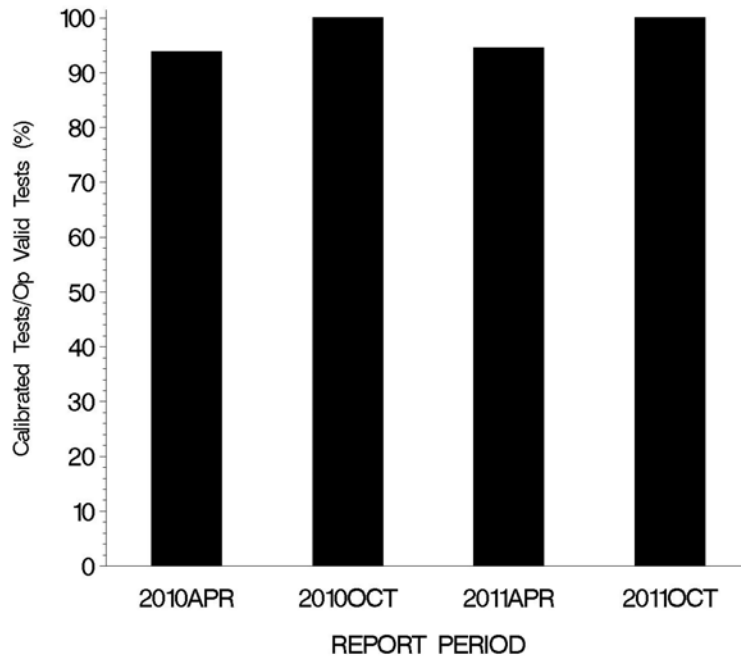
**Test Distribution by Oil and Validity**

		Totals			
		148-1	151-2	Last Period	This Period
Accepted for calibration	AC	6	10	17	16
Rejected (Mild)	OC	0	0	1	0
Rejected (Severe)	OC	0	0	0	0
Rejected (Precision)	OC	0	0	0	0
Invalidated calibration	LC	0	0	2	0
Aborted	XC	0	0	0	0
<b>Total</b>		<b>6</b>	<b>10</b>	<b>20</b>	<b>16</b>

**CALIBRATION ATTEMPT SUMMARY**



OPERATIONALLY VALID TESTS  
MEETING ACCEPTANCE CRITERIA

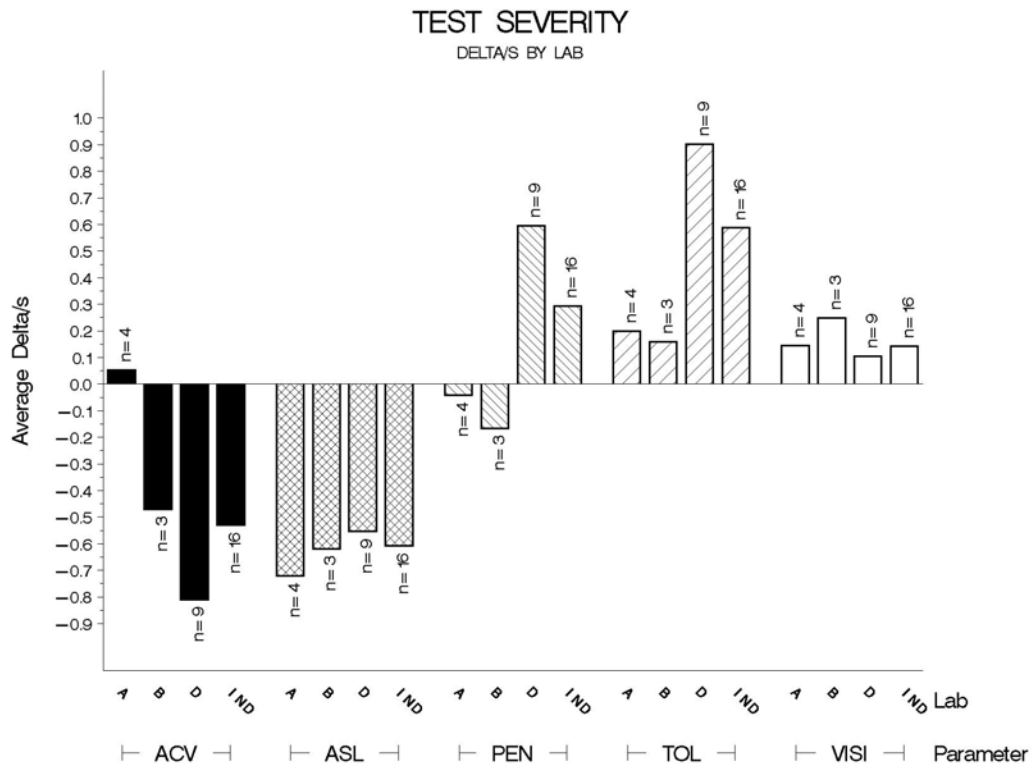


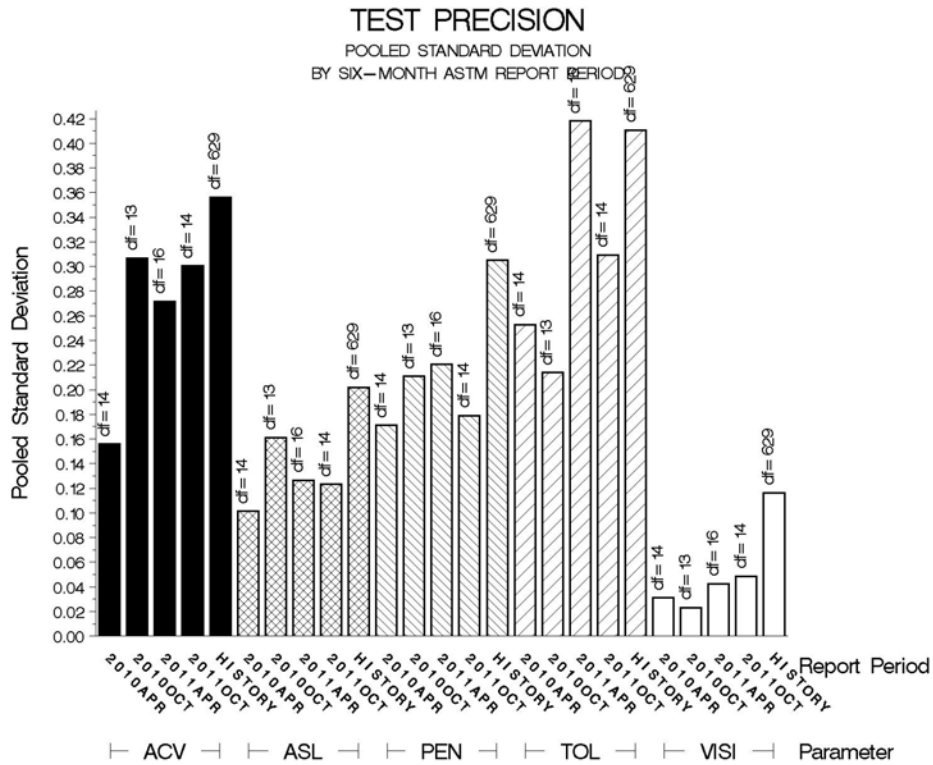
CAUSES FOR LOST TESTS:

Lab	Cause	Oil		Validity			Loss Rate		
		148-1	151-2	LC	RC	XC	Lost	Starts	%
	None.						0	16	0%
	Lost	0	0	0	0	0			
	Starts	6	10	16	16	16			
	%	0%	0%	0%	0%	0%			

Average $\Delta/s$ by Lab						
LAB	n	ACV	ASL	PEN	TOL	VISI
A	4	0.053	-0.720	-0.040	0.199	0.145
B	3	-0.471	-0.619	-0.166	0.159	0.249
D	9	-0.810	-0.554	0.596	0.903	0.105
Industry	16	-0.530	-0.608	0.294	0.587	0.142
Shift*	16	-0.462 merit	-0.061 merit	0.182%	0.442%	1.144%

\*computed using severity adjustment standard deviation





1544401 30NOV2011

INDUSTRY CONTROL CHARTS:

The industry control charts are shown beginning on the following page.

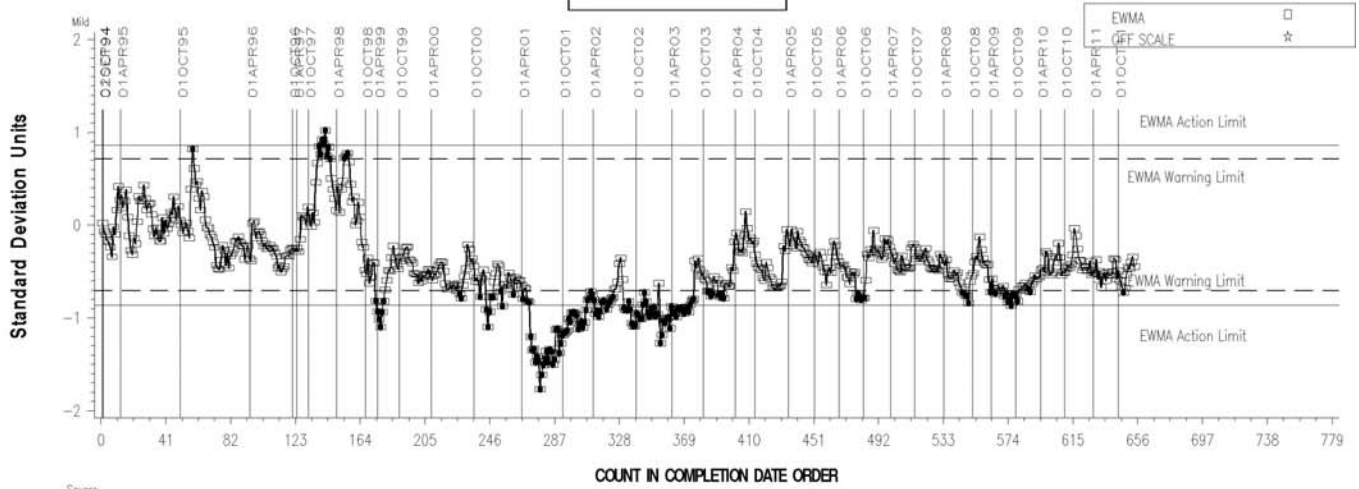
Sludge severity continues to trend severe (as it has since 2007). Toluene was also severe again this period. Varnish continued its nearly-lifelong severe trend as well but stayed within alarm limits. Precision for all parameters has been good.

L-60-1 INDUSTRY OPERATIONALLY VALID DATA

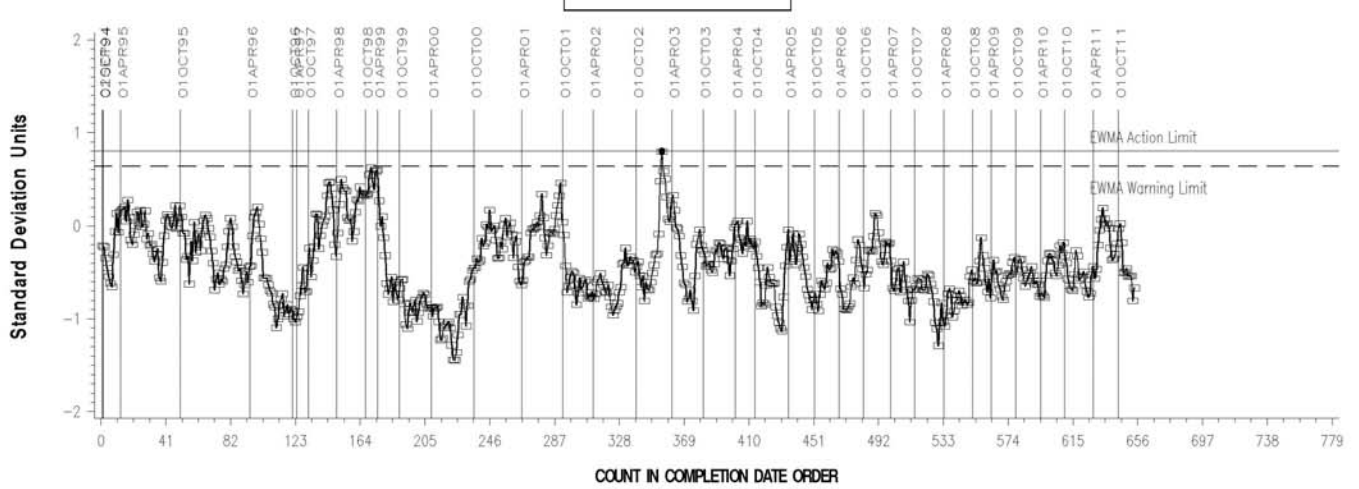
REF. FINAL AVERAGE CARBON VARNISH



LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

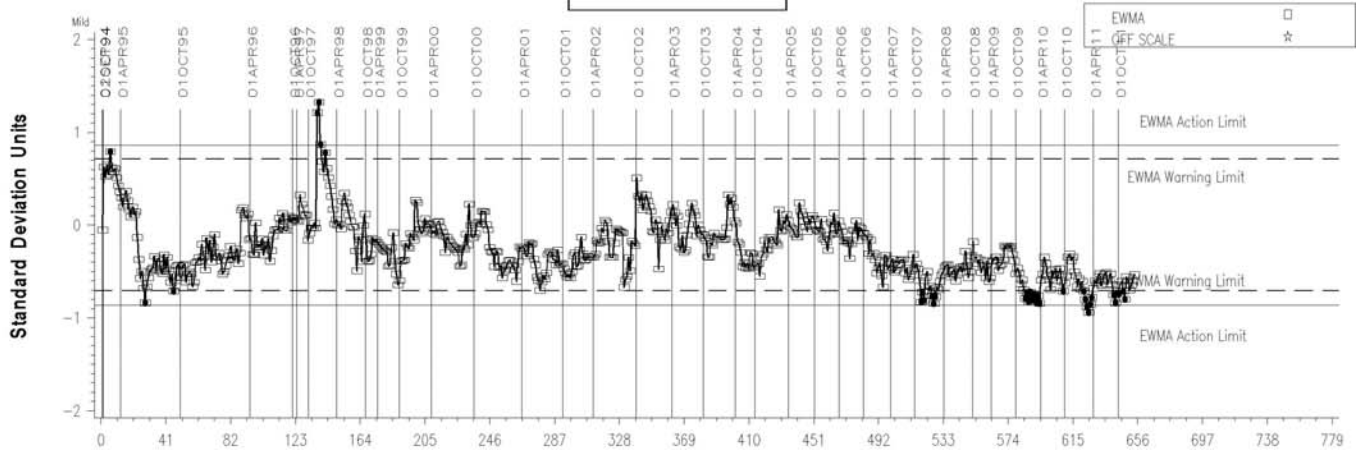


L-60-1 INDUSTRY OPERATIONALLY VALID DATA



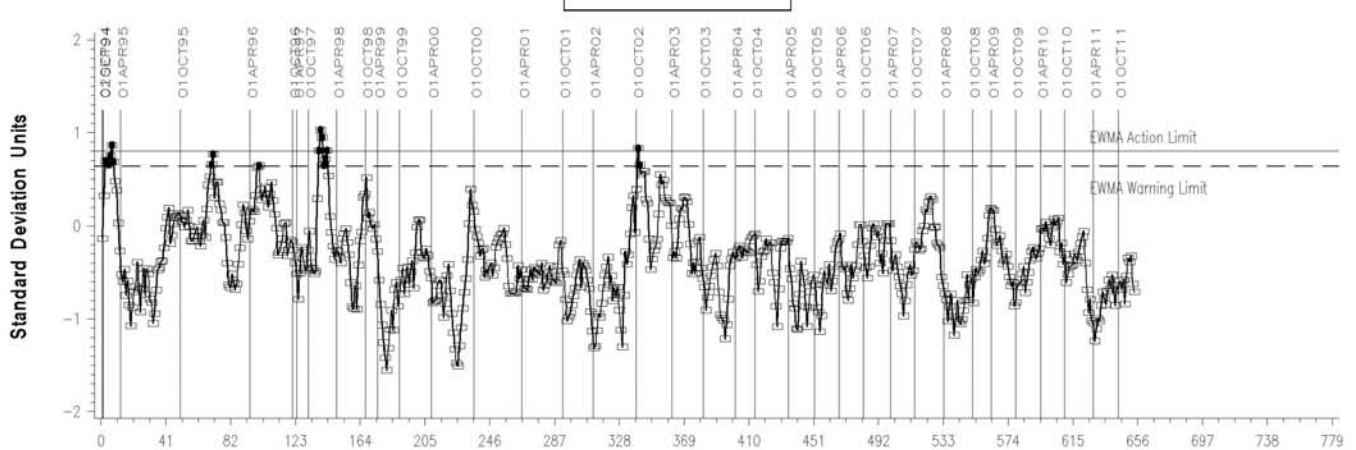
REF. FINAL AVERAGE SLUDGE

LTMS Severity Analysis



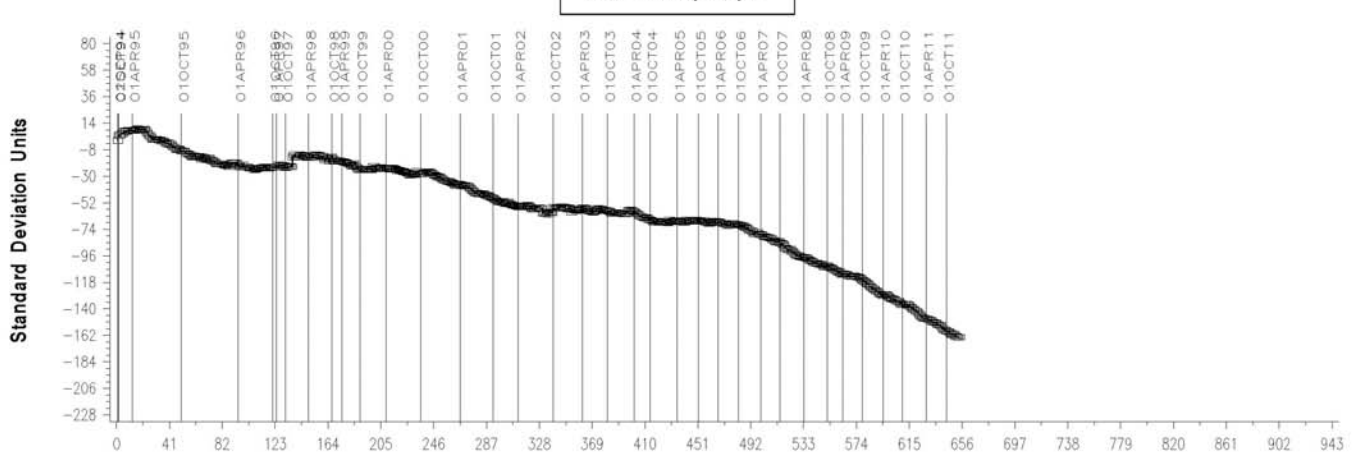
COUNT IN COMPLETION DATE ORDER

LTMS Precision Analysis



COUNT IN COMPLETION DATE ORDER

CUSUM Severity Analysis



COUNT IN COMPLETION DATE ORDER

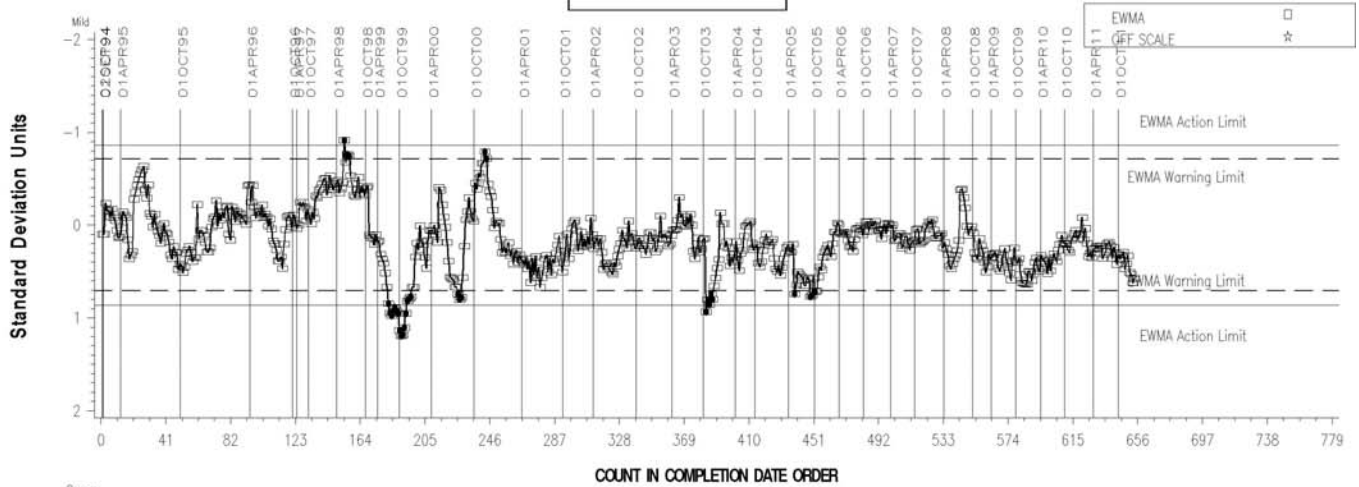


L-60-1 INDUSTRY OPERATIONALLY VALID DATA

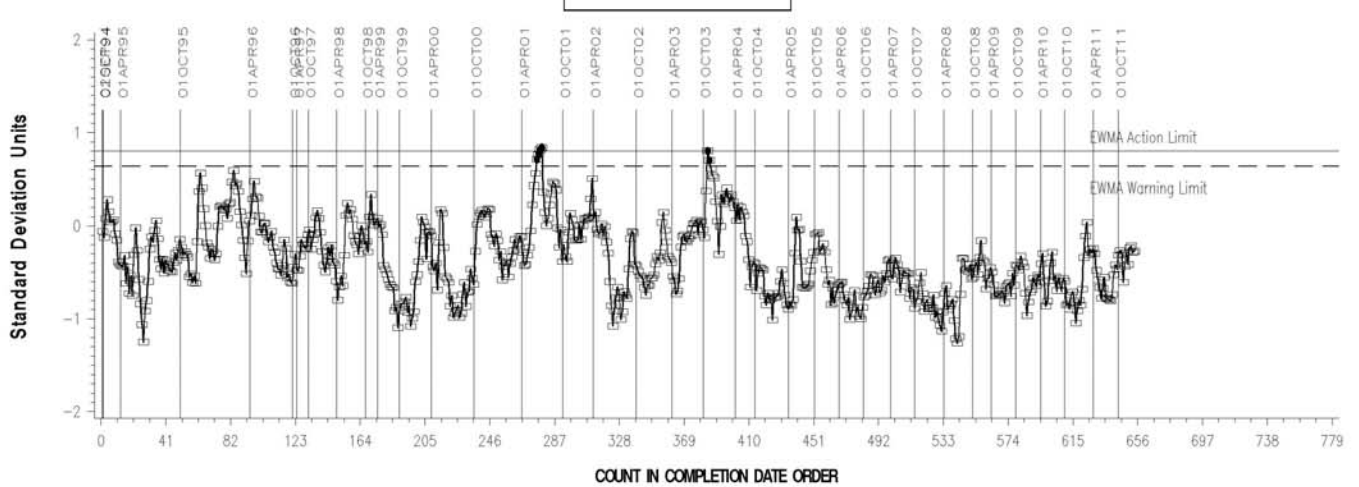
REF. FINAL PENTANE INSOLUBLES



LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

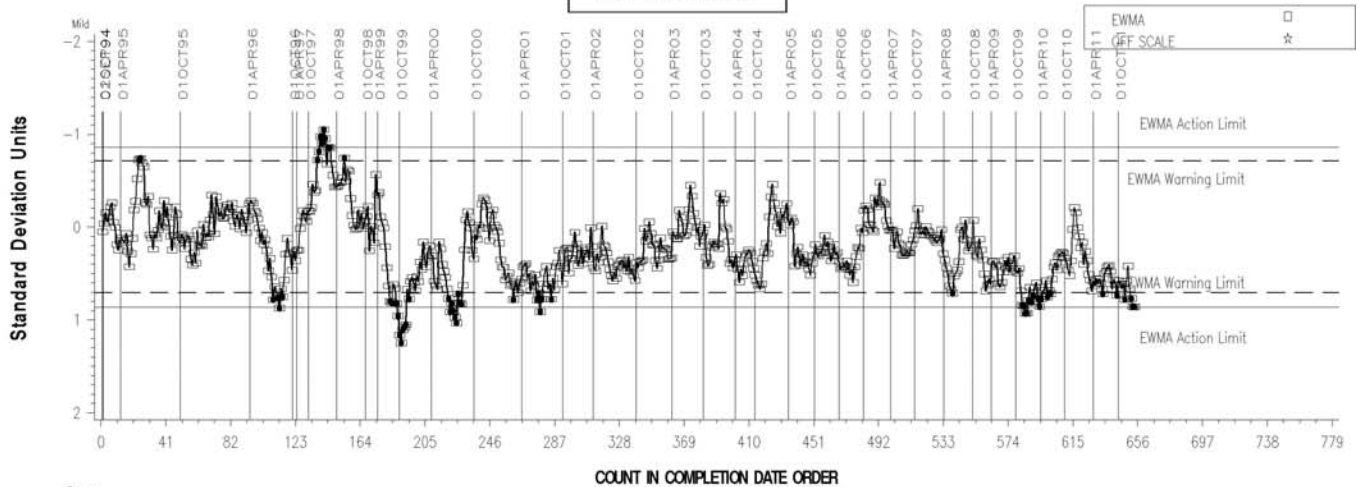


L-60-1 INDUSTRY OPERATIONALLY VALID DATA

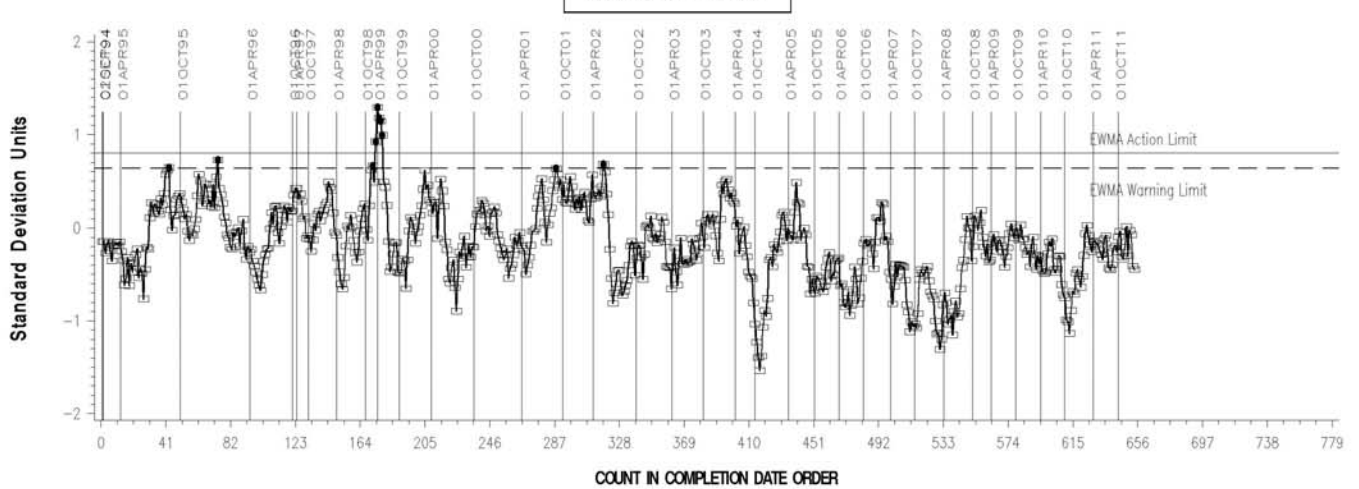
REF. FINAL TOLUENE INSOLUBLES



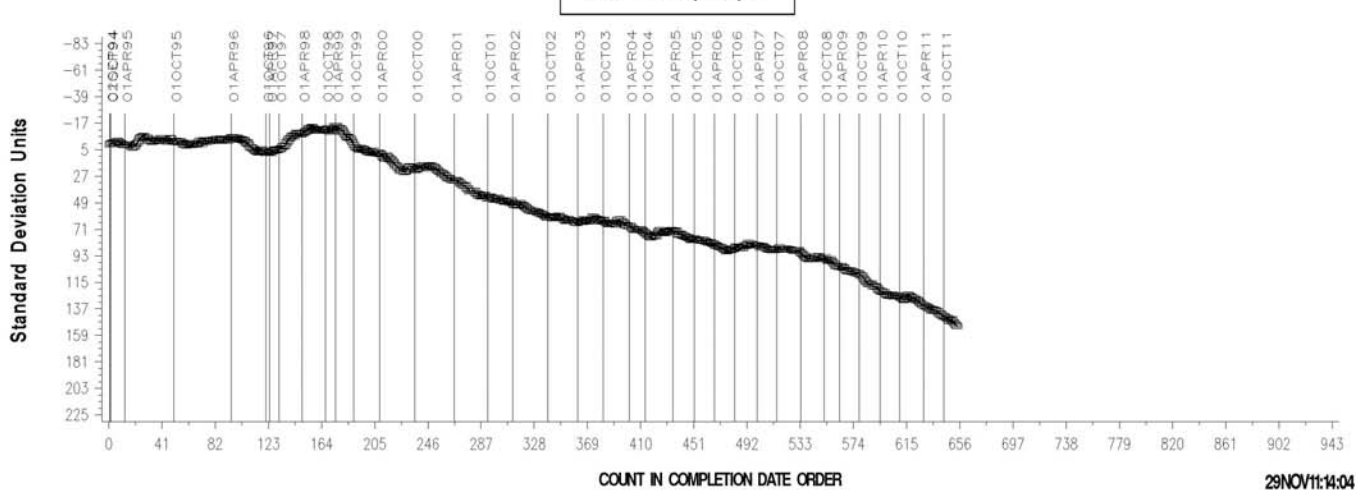
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

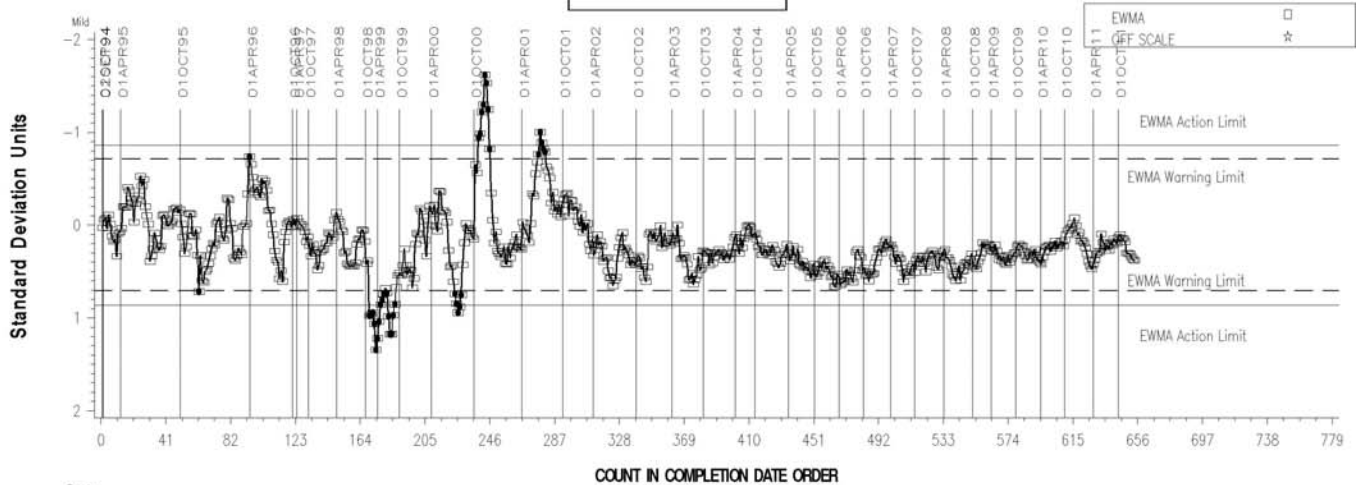


# L-60-1 INDUSTRY OPERATIONALLY VALID DATA

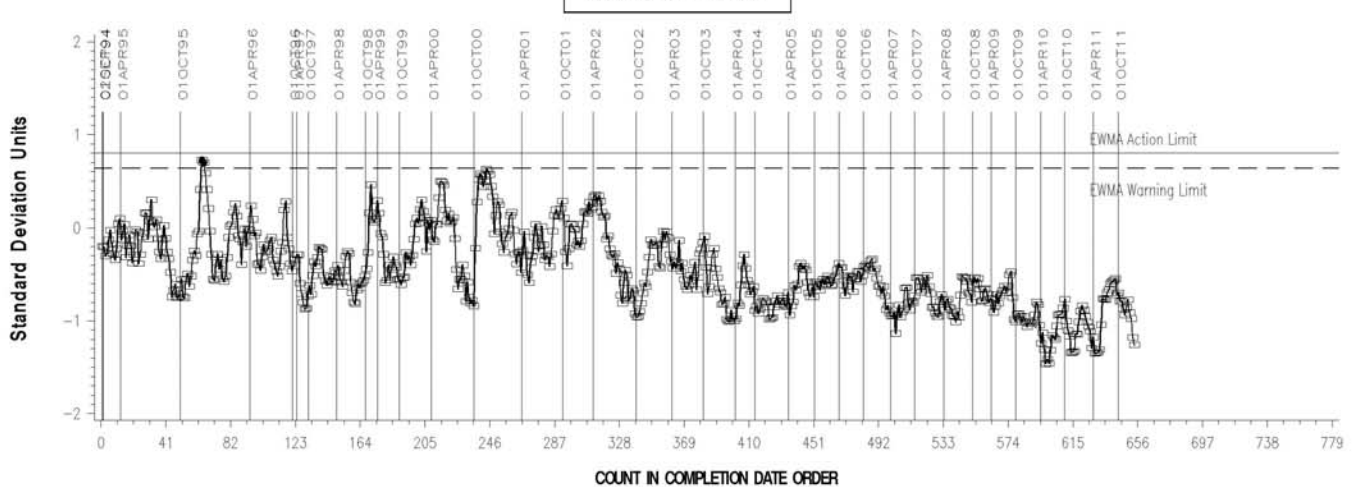


## REF. FINAL VISCOSITY INCREASE

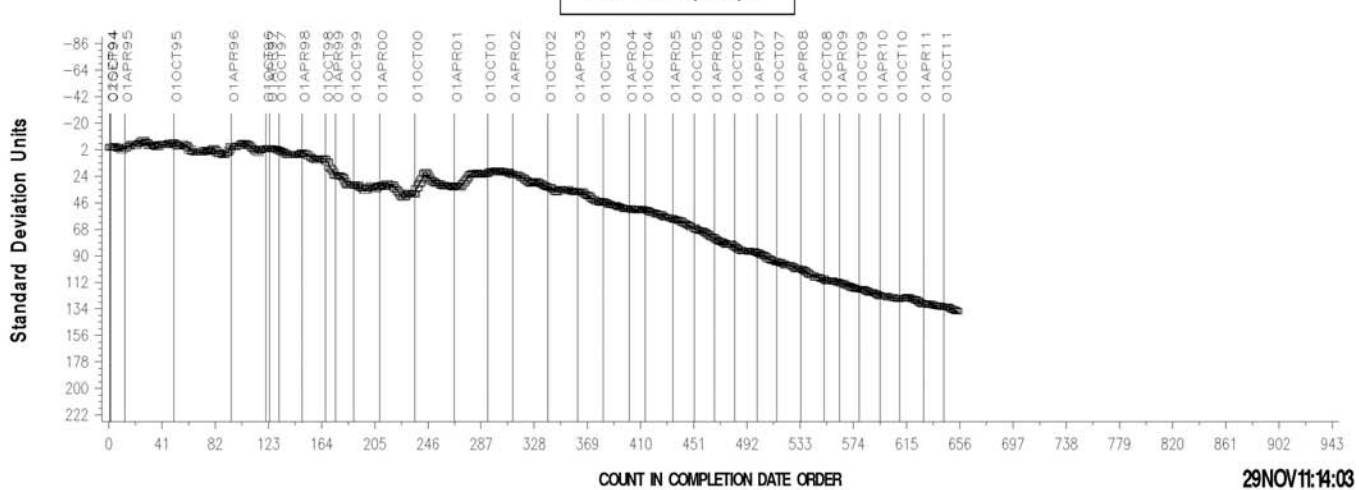
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis



TIMELINE OF SIGNIFICANT EVENTS IN THE HISTORY OF THE L-60-1 TEST:

<b>Effective Date</b>	<b>Information Letter</b>	<b>Event</b>
19950901	95-1	Test Stand Motor Speed Change
19950901	95-1	Alternator Part Number Change
19950901	95-1	Air Box Heater Part Number Correction
19951026	95-2	Alternator Load Circuit Schematic Addition
19951103	95-1	Report Forms and Dictionary Version 19950912
19951115	95-1	Transforms./Correction Factors
19960122	96-1	Severity Adjustment Calculation Method
19960430	96-2	TMC One Page Addition
19960430	96-2	TMC New Address
19960531	96-3	Perfect Seal Gasket Maker Use
19960531	96-3	Use of Modified Gear Case Housing
19960531	96-3	Report Forms and Dictionary Version 19960408
19970530	97-1	Revised Test Method Designation, Alternator Load Tolerance Revisions
19970530	97-1	Operational Validity Criteria, Zero Value Test Reporting
19970530	97-1	Report Forms and Data Dictionary, Test Reporting Clarifications(19970411)
19970530	97-1	Report Forms and Data Dictionary, Test Reporting Clarifications(19970411)
19970605	97-2	Air Flow Specification Revision and Air Supply Pressure Specification Removal
19971107	97-3	Revised Report Forms & Data Dictionary Version 19970902
19971107	97-3	Revised Precision & Bias Statement
19980612	98-1	Air Flow Calibration Requirement
19980623	98-2	Cleaning Agent Revision (Toluene)
19981123	98-3	Air Flow Calibration Requirement
19990100		Gear Problem (Manufacturer Changed Steel to Lead-Free Metallurgy)
19990101	98-3	Addition of CRC Gear Rating Workshop Training
19990215	99-1	Revised Gear Case Disassembly Procedure
19990301	99-2	Air Supply Line Note Addition
19990301	99-2	Data Logging Requirements
19990301	99-2	Strip Chart Requirements
19990301	99-2	Repeatability Term Change
19990609	99-3	Definition of Acceptable Gears for Testing Due to Severe Carbon Severity
19991016	99-4	Clarified test method for measuring Pentane and Toluene Insolubles
20000427		New Gear Batch 7-99 Introduced
20000427	00-1	Testing With Used Gears Discontinued
20020501	02-1	CRC Rating Manual 20
20020501	02-1	Report Forms and Data Dictionary
20020710	02-2	Test Gear Preparation
20020710	02-2	Shaft Oil Lip Seal
20020710	02-2	Speedi-Sleeve
20020710	02-2	Joint Radial Seal (V ring)
20020710	02-2	End of Test Oil Drain
20020710	02-2	Instrument Calibration Frequency
20021201	03-1	Revised end of test oil drain procedure
20021201	03-1	Pre-test gear preparation
20030205	03-2	Revised end of test oil drain procedure

<b>Effective Date</b>	<b>Information Letter</b>	<b>Event</b>
20030430	03-2	Heater blower air output
20030430	03-3	Revised heater blower air output verification
20030430	03-3	Digital manometer
20030506	03-3	Non-interpetable tests
20030506	03-3	Revisions to the use of warning statements
20030801	03-4	Revised heater blower air output verification
20030801	03-4	Preso low loss venturi meter and Dwyer digital manometer calibration
20040101	03-5	Cleaning solvent specification
20040401	04-1	Revised Gear Case Clening Procedure
20040401	04-1	Revised Carbon Depth Rating Guidelines
20040401	04-1	Editorial Changes to Precision Statement
20040630	04-2	Editorial Changes to Precision Statement
20040630	04-2	Air Flow Controller Calibration Standard Model Number Addition
20050225	05-1	Revised Solvent Specification
20050225	05-1	Carbon Varnish Rating Procedure
20050225	05-1	Donated Reference Oil Test Programs/Calibration period Length Adjustment
20050421	05-2	Updated Test Precision
20050421	05-2	Rounding Test Results Using ASTM E 29
20051010	05-3	Nitrile and Latex Gloves for Catalyst Handling
20060711	06-1	Revised Copper Catalyst Strip Cleaning Procedure
20060711	06-1	Editorial Revision
20061011	06-2	Phase Out of Manufacturer's Name and Updated Part Number for Lip Seal, Speedi-Sleeve Seal, and Joint Radial Seal.
20071115	07-1	Revised Downtime Wording
20090707	09-1	Revised Figure A2.1
20100510	10-1	Revised instrumentation calibration requirements and clarified validity of tests experiencing excessive oil loss.
20110912	11-2	Removal of requirement to mail paper final test report to TMC.

TMC LAB VISITS:

No L-60-1 lab visits were conducted during this report period. A ballot to address the D893 items identified by TMC inspection of the L-60-1 chem labs is currently working its way toward approval.

INFORMATION LETTERS:

Information Letter 11-2 was issued this period to remove the requirement to mail a paper final test report to TMC.

STATUS OF REFERENCE OIL SUPPLY:

At the end of this report period, the testing oil supply stood as outlined in the table below:

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
133	5	1693	105.8
148-1	9	596	37.3
151-2	9	135	8.4
<b>Total</b>	<b>23</b>	<b>2424</b>	<b>151.5</b>

While only 8.4 gallons of 151-2 remain, that does provide 135 tests at the quantity used by L-60-1. A reblend of 151-2 (151-3) was acquired by TMC in 1999 but has since been consumed in other test types. That oil was then replaced by 155 which is also nearly depleted. A 155 reblend (155-1) is on hand at TMC and will be available for L-60-1 testing should the need eventually arise.

SDP/sdp/mem11-060.sdp.doc

cc: Frank Farber

Jeff Clark

<ftp://ftp.astmtmc.cmu.edu/docs/gear/l601/semiannualreports/l601-10-2011.pdf>

Distribution: email