A Program of ASTM International

Test Monitoring Center

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

MEMORANDUM: 12-013

DATE: May 17, 2012

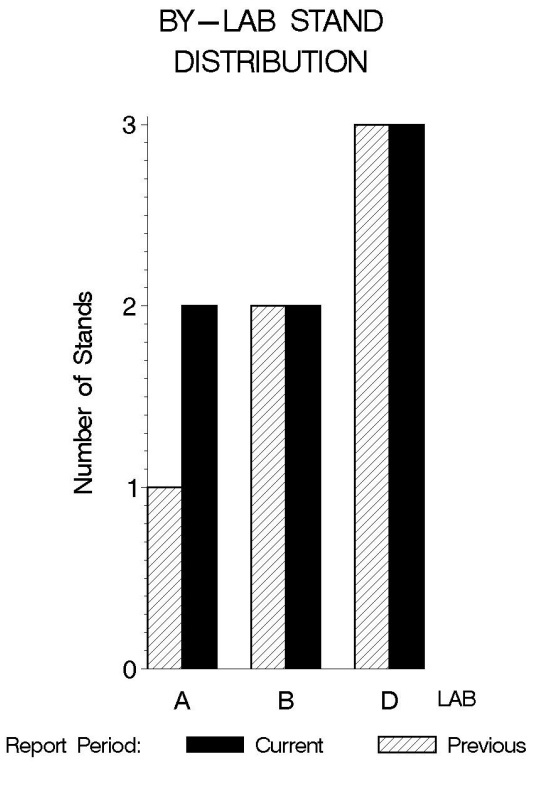
TO: Larry Hamilton, Chairman, L-60-1 Surveillance Panel

FROM: Scott Parke

SUBJECT: L-60-1 Testing from October 1, 2011 through March 31, 2012

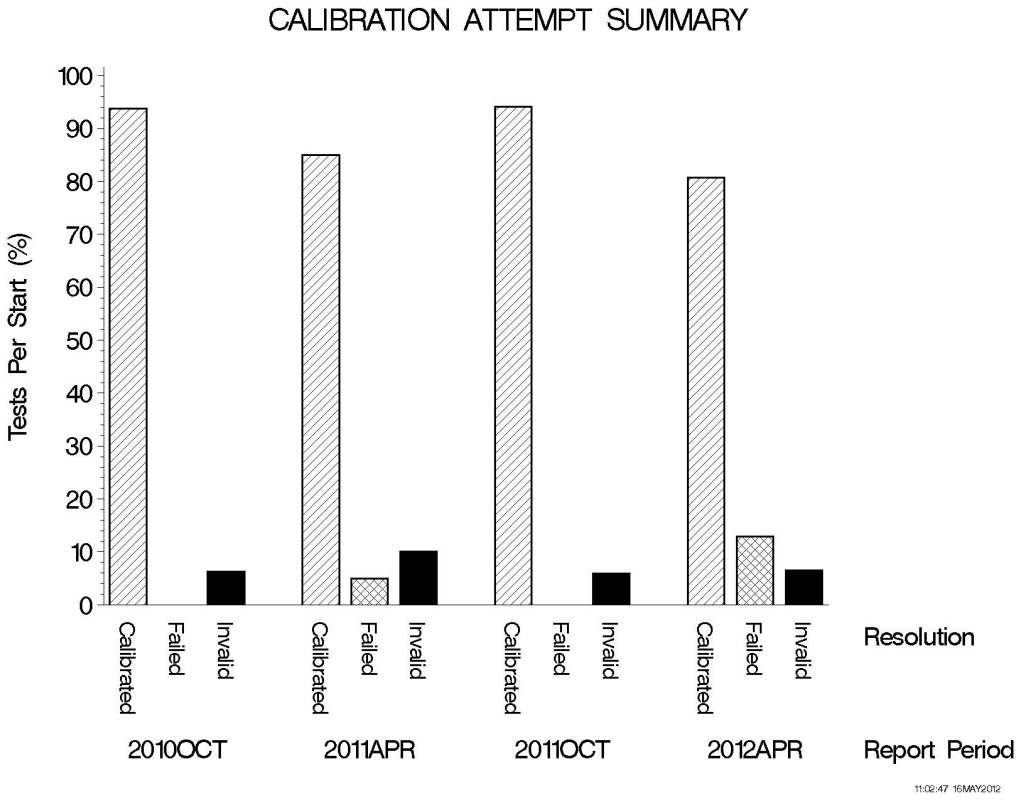
A total of 40 L-60-1 tests were reported to the Test Monitoring Center during the period from October 1, 2011 through March 31, 2012. Following is a summary of testing activity this period.

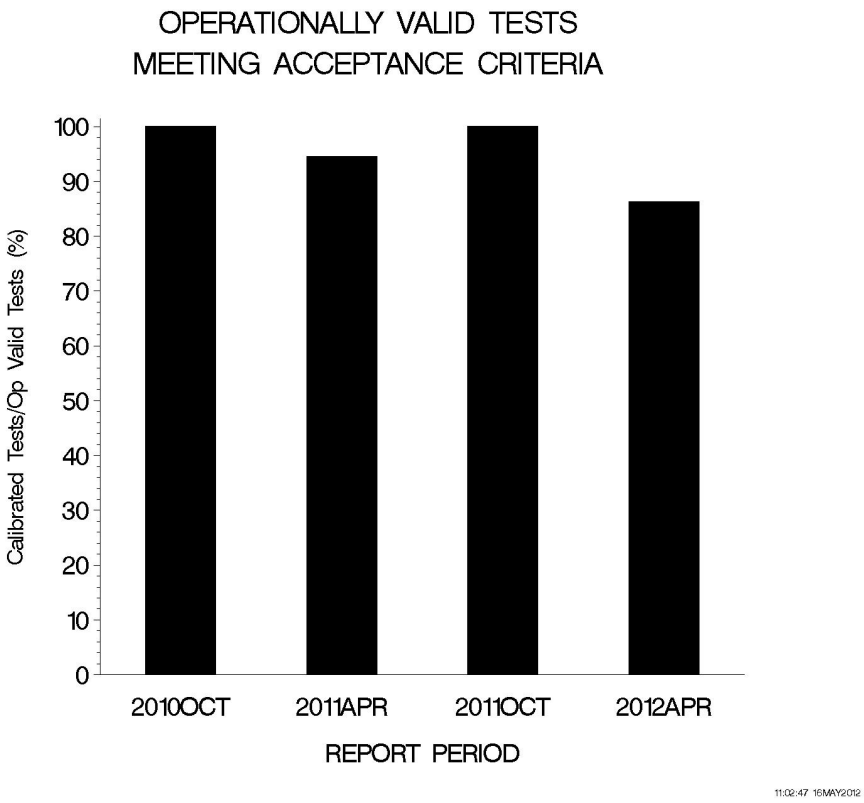
	Reporting Data	Calibrated on 3-31-12
Number of Labs	3	3
Number of Stands	7	7



Test Distribution by Oil and Validity

				Totals	
		148-1	**151-2**	Last Period	This Period
Accepted for calibration	AC	13	12	16	25
Rejected (Mild)	OC	0	0	0	0
Rejected (Severe)	OC	3	1	0	4
Rejected (Precision)	OC	0	0	0	0
Invalidated calibration	LC	0	0	0	0
Hardware approval	NI	6	3	0	9
Operationally invalid	RC	0	1	0	1
Aborted	XC	1	0	0	1
Total		23	17	16	40




OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA
Calibrated Tests/Op Valid Tests (%)
100
90
80
70
60
50
40
30
20
10
0
2010OCT
2011APR
2011OCT
2012APR
REPORT PERIOD
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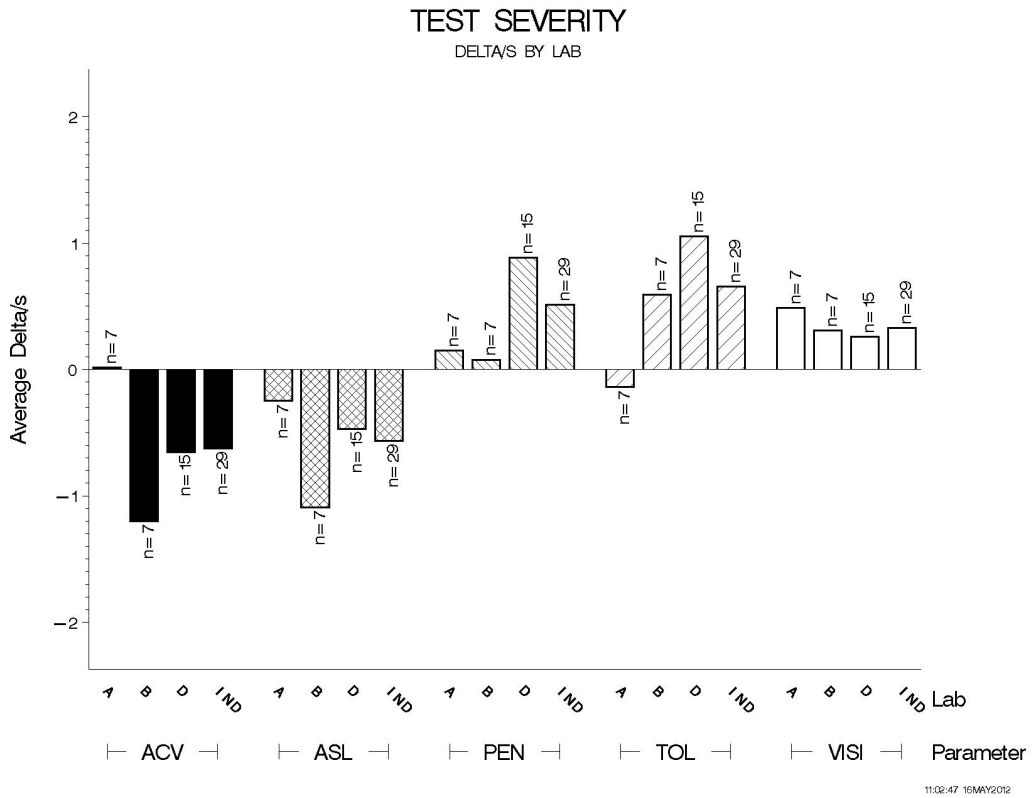
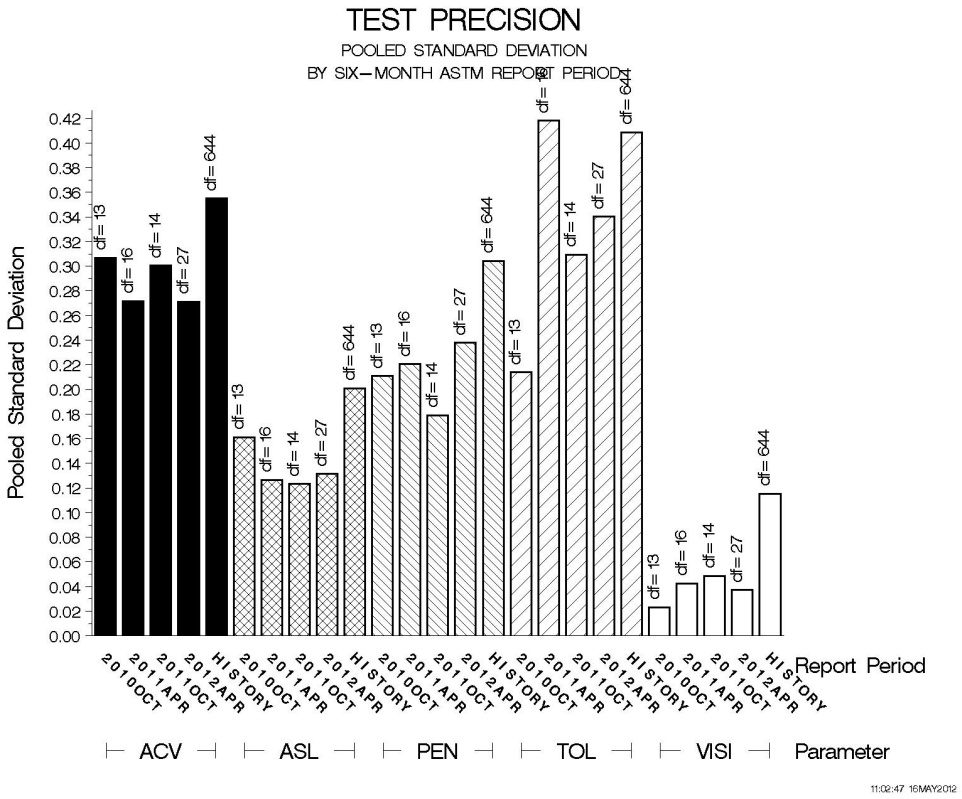
CAUSES FOR LOST TESTS:

			Oil		Validity			Loss Rate		
Lab	Cause		148-1	151-2	LC	RC	XC	Lost	Starts	%
A	Gear box assembled incorrectly.			●		●		1	11	9%
D	No airflow.		●				●	1	19	5%
		Lost	1	1	0	0	0			
		Starts	23	17	40	40	40			
		%	4%	6%	0%	0%	0%			

Average Δ/s by Lab						
LAB	n	ACV	ASL	PEN	TOL	VISI
A	7	0.015	-0.248	0.149	-0.139	0.486
B	7	-1.198	-1.089	0.078	0.592	0.308
D	15	-0.653	-0.468	0.884	1.056	0.261
Industry	29	-0.623	-0.565	0.512	0.655	0.327
Shift*	29	-0.548 merit	-0.057 merit	0.324%	0.499%	2.647%

*computed using severity adjustment standard deviation

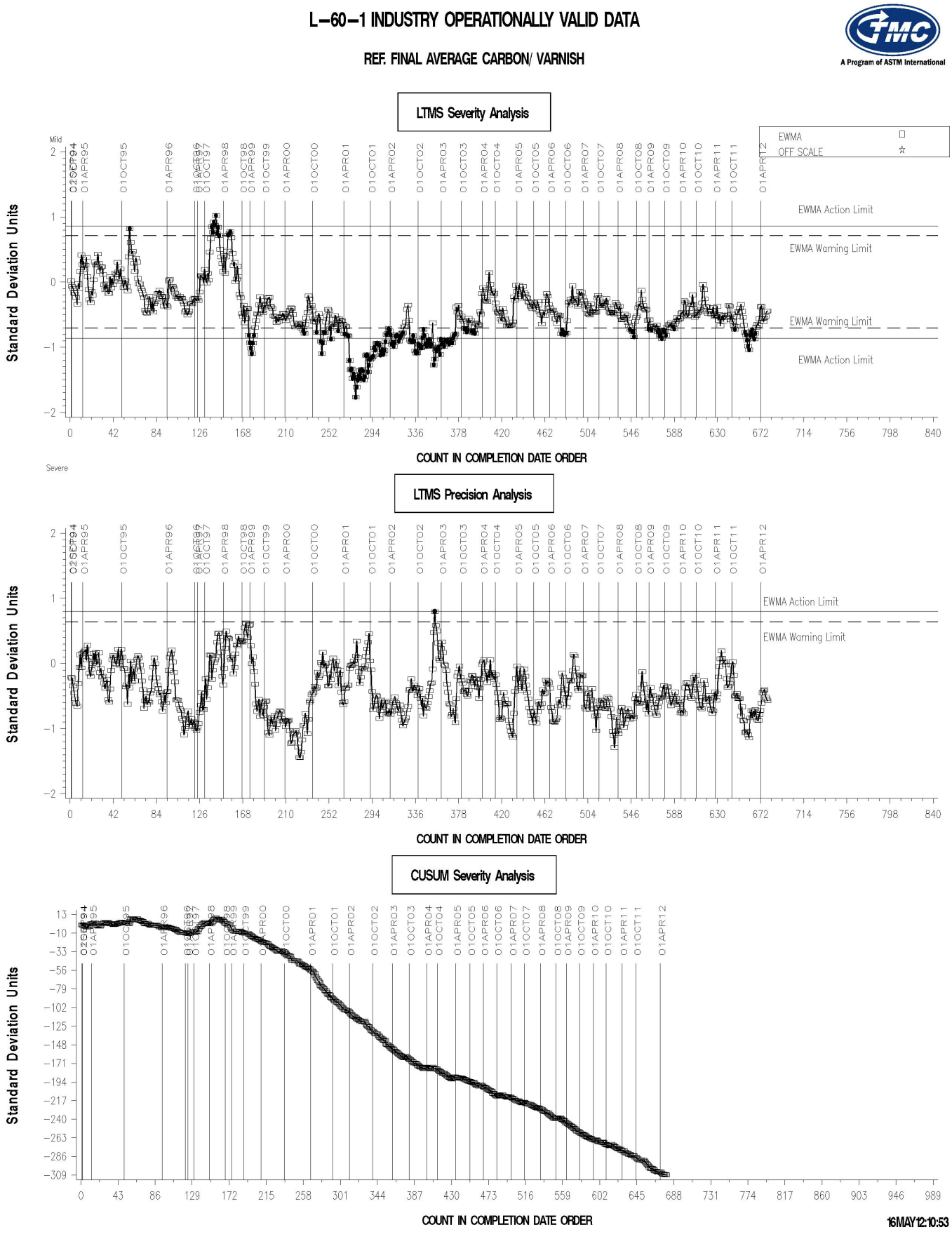




INDUSTRY CONTROL CHARTS:

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

All parameters continue to be more or less severe of target. Recent investigation as part of the new hardware introduction indicates that targets currently in use may not be representative of actual test performance. Investigation is ongoing. Precision for all parameters continues to be good.


L–60–1 INDUSTRY OPERATIONALLY VALID DATA
REF. FINAL AVERAGE CARBON/ VARNISH
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LTMS Severity Analysis
Mild
Severe
EWMA
OFF SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
EWMA Action Limit
EWMA Warning Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
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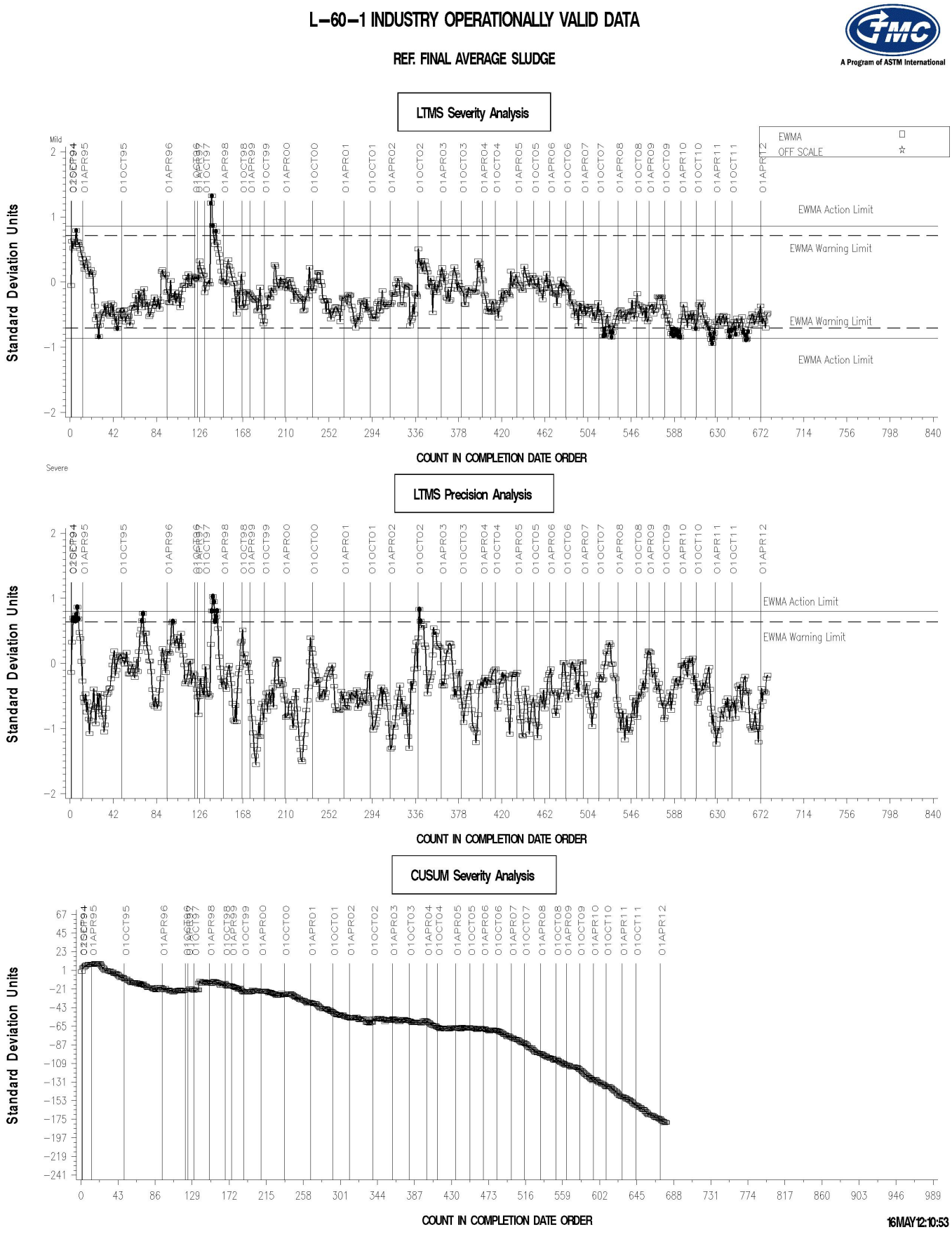
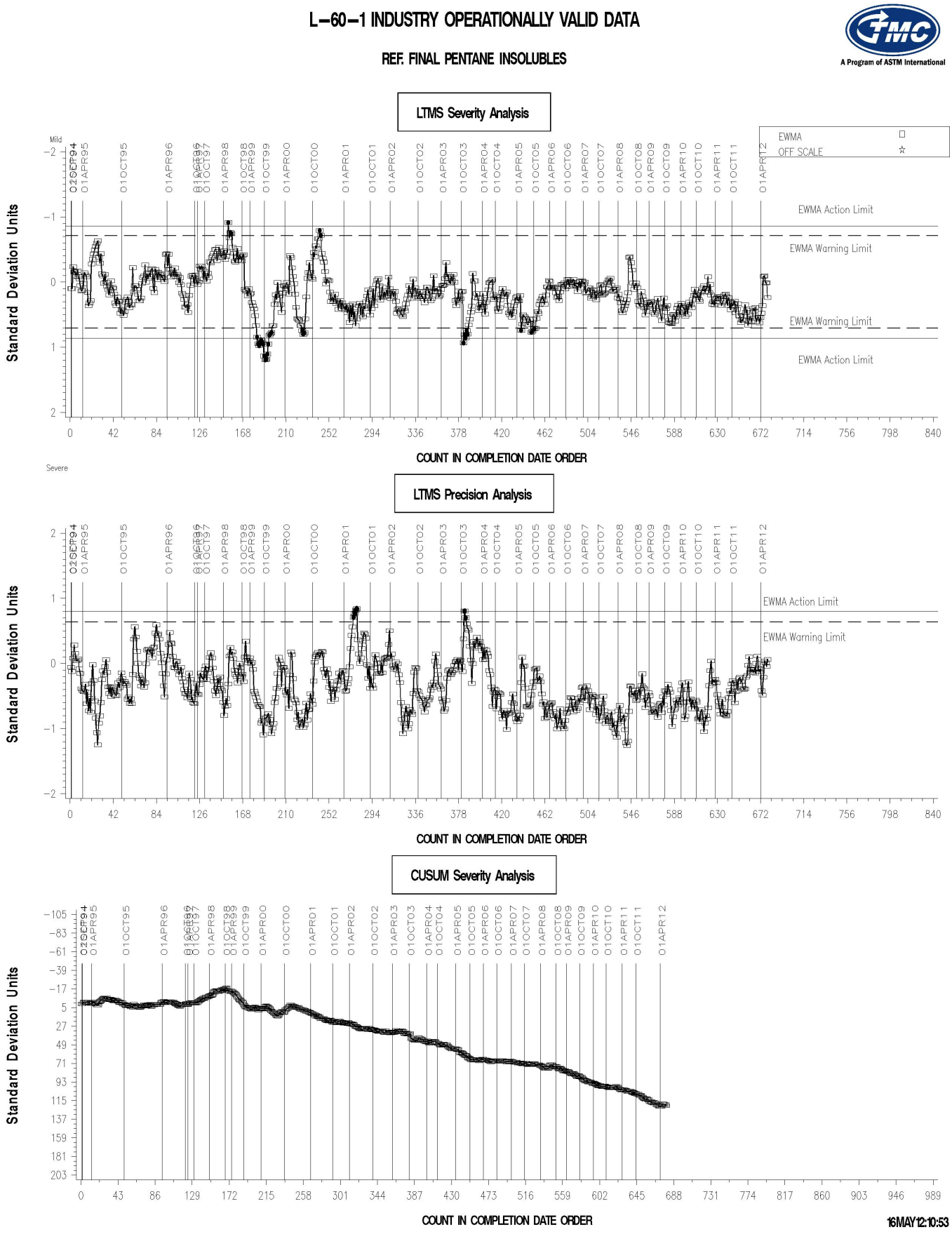

L–60–1 INDUSTRY OPERATIONALLY VALID DATA
REF. FINAL AVERAGE SLUDGE
A Program of ASTM International
LTMS Severity Analysis
Mild
Severe
Standard Deviation Units
EWMA
OFF SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
EWMA Action Limit
EWMA Warning Limit
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
COUNT IN COMPLETION DATE ORDER
16MAY12:10:53


L-60-1 INDUSTRY OPERATIONALLY VALID DATA
REF. FINAL PENTANE INSOLUBLES
A Program of ASTM International
LTMS Severity Analysis
Mild
Severe
Standard Deviation Units
EWMA
OFF SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
Standard Deviation Units
EWMA Action Limit
EWMA Warning Limit
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
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L–60–1 INDUSTRY OPERATIONALLY VALID DATA

REF. FINAL TOLUENE INSOLUBLES

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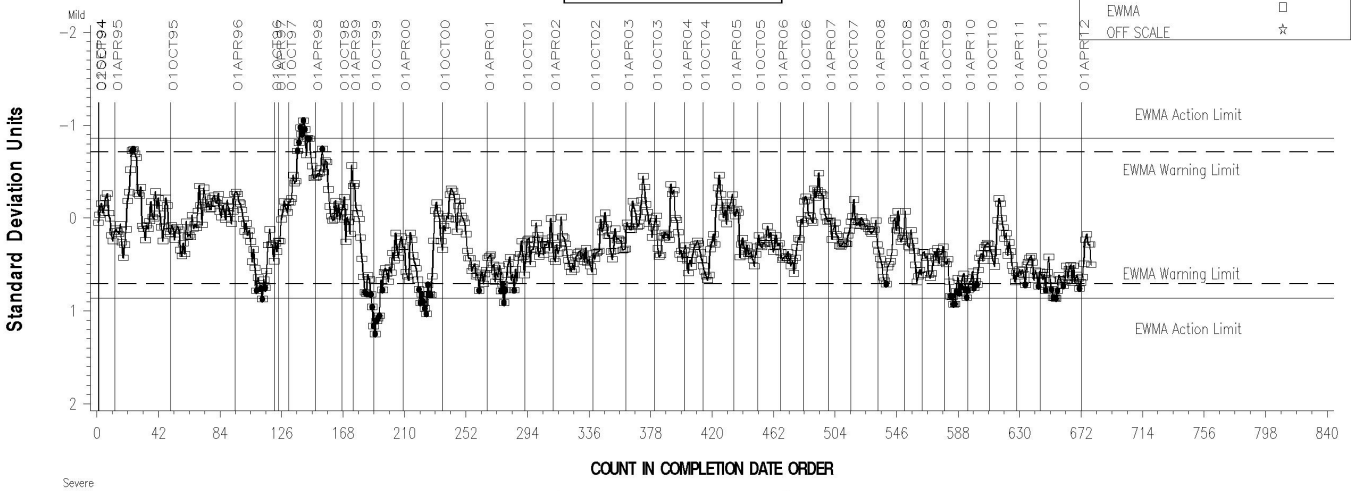
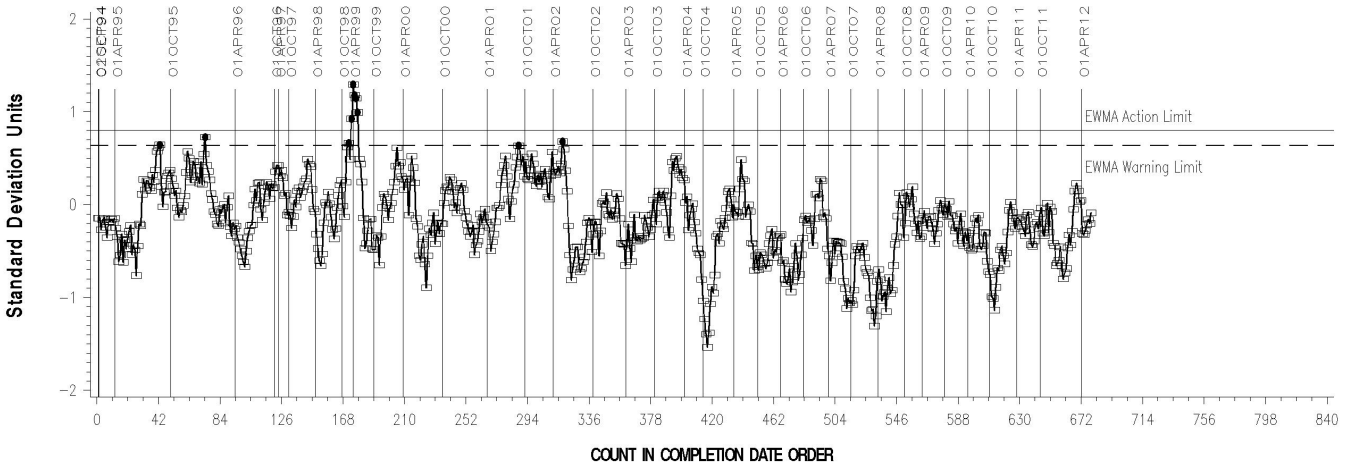
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

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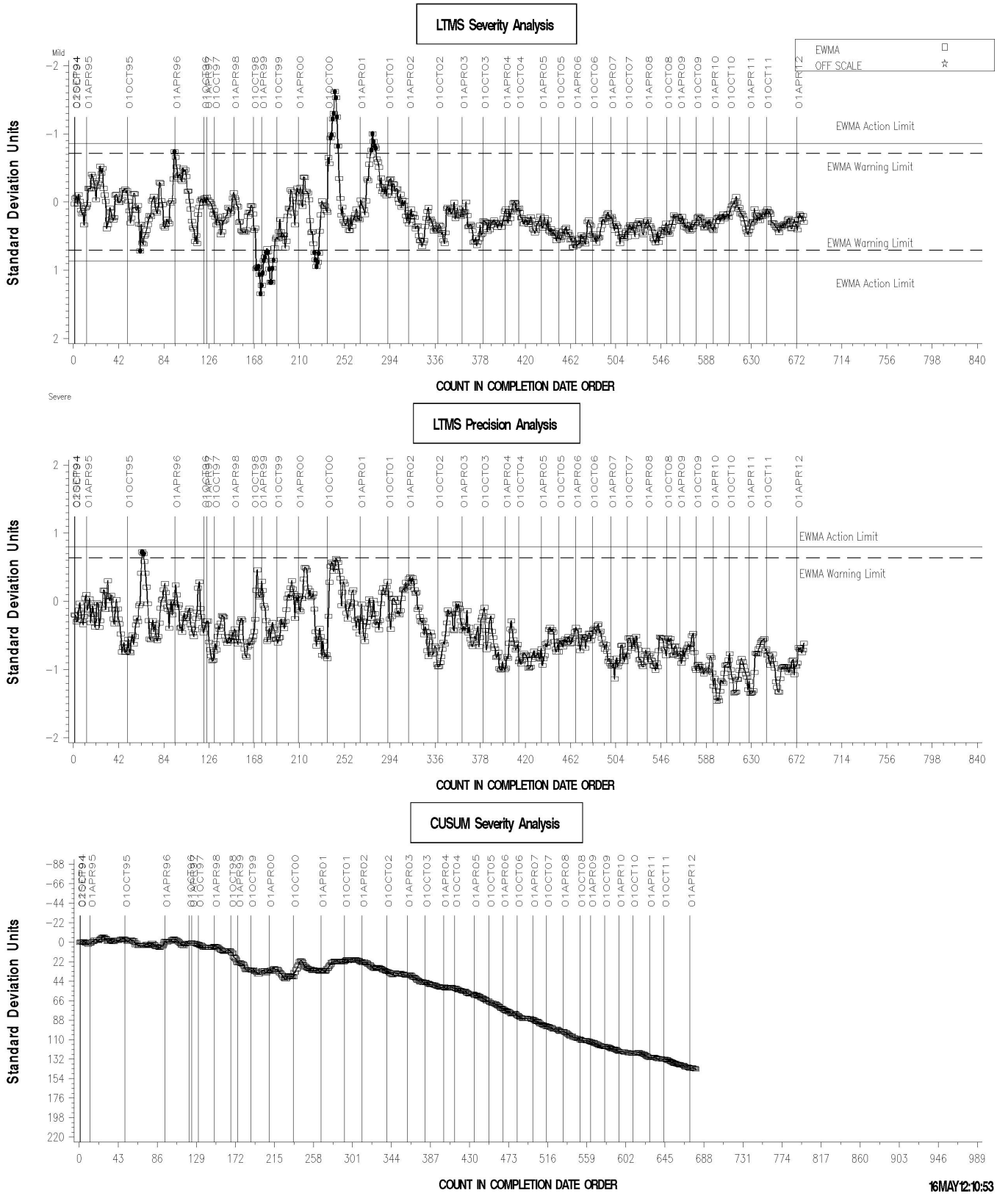
L–60–1 INDUSTRY OPERATIONALLY VALID DATA

REF. FINAL VISCOSITY INCREASE



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

Effective Date	Information Letter	Event
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 Schemtic 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

Effective Date	Information Letter	Event
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:
No L-60-1 information letters were issued this period.

STATUS OF REFERENCE OIL SUPPLY:
At the end of this report period, the testing oil supply stood as outlined in the table below:

		@ TMC	
Oil	Cans @ Labs	Cans	Gallons
133	5	1693	105.8
148-1	13	571	35.7
151-2	13	88	5.5
Total	31	2352	147.0

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 when the need arises. TMC inventory records indicate that 5.5 gallons of 151-2 remain. While this does provide oil for 88 tests, be advised that quantities that low can unexpectedly be depleted by even minor spills or transfer losses. The panel is advised to begin thinking about an introduction plan for 155-1. Five hundred and seventy one tests of oil 148-1 remain in TMC inventory; however, this is only 35.7 gallons. When the need arises, it will not be possible to obtain a reblend of this oil. The panel may also want to begin considering a possible replacement for this oil.

SDP/sdp/mem12-013.sdp.doc
cc: Frank Farber
Jeff Clark
ftp://ftp.astmtmc.cmu.edu/docs/gear/l601/semiannualreports/l601-04-2012.pdf

Distribution: email