A Program of ASTM International

Test Monitoring Center

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

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

MEMORANDUM: 11-032

DATE: June 16, 2011

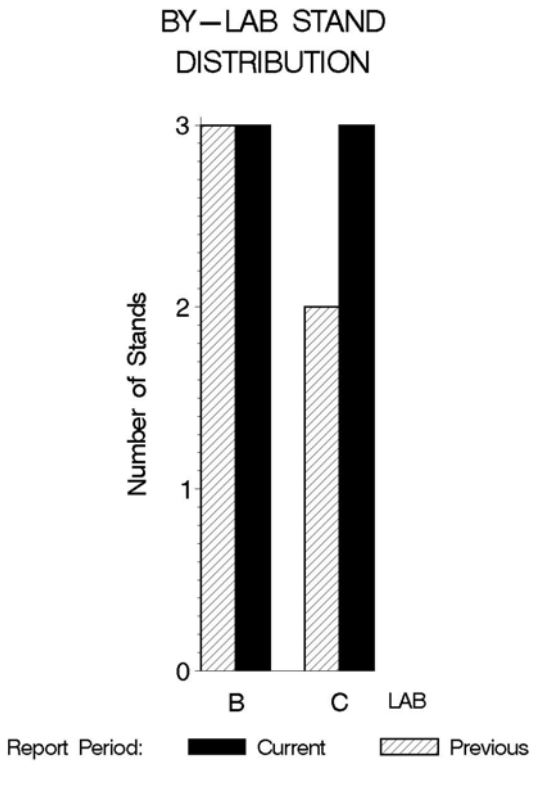
TO: Don Bell, Chairman, OSCT Surveillance Panel

FROM: Scott Parke

SUBJECT: OSCT Testing from October 1, 2010 through March 31, 2011

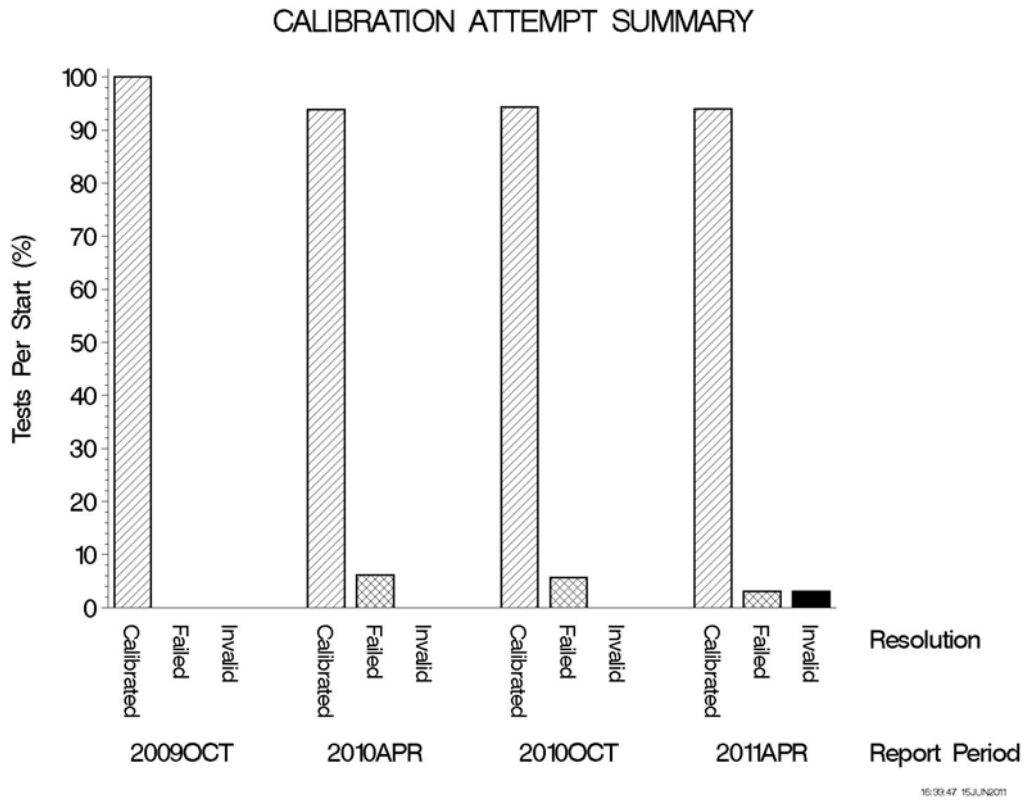
A total of 67 OSCT tests were reported to the Test Monitoring Center during the period from October 1, 2010 through March 31, 2011. Following is a summary of testing activity this period.

	Reporting Data
Number of Labs	2
Number of Stands	6



Test Distribution by Oil and Validity

		FL	NI	PA	Totals Last Period	Totals This Period
Accepted for calibration	AC	11	10	10	33	31
Rejected (low result)	OC	0	0	1	0	1
Rejected (high result)	OC	0	0	0	2	0
Invalidated information run	LI	0	1	0	0	1
Elastomer or oil approval run	NI	14	7	10	11	31
Aborted	XC	1	0	0	0	1
Unacceptable elastomer approval run	MI	0	0	0	1	0
Aborted elastomer approval run	XI	1	0	1	0	2
Total		27	18	22	47	67



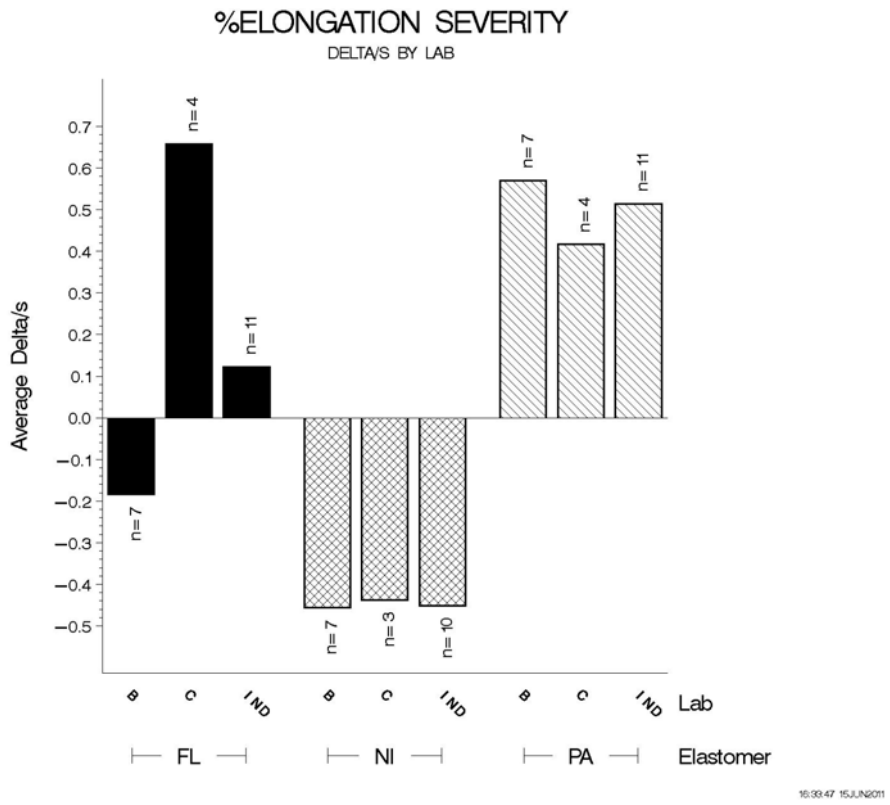
CAUSES FOR LOST TESTS:

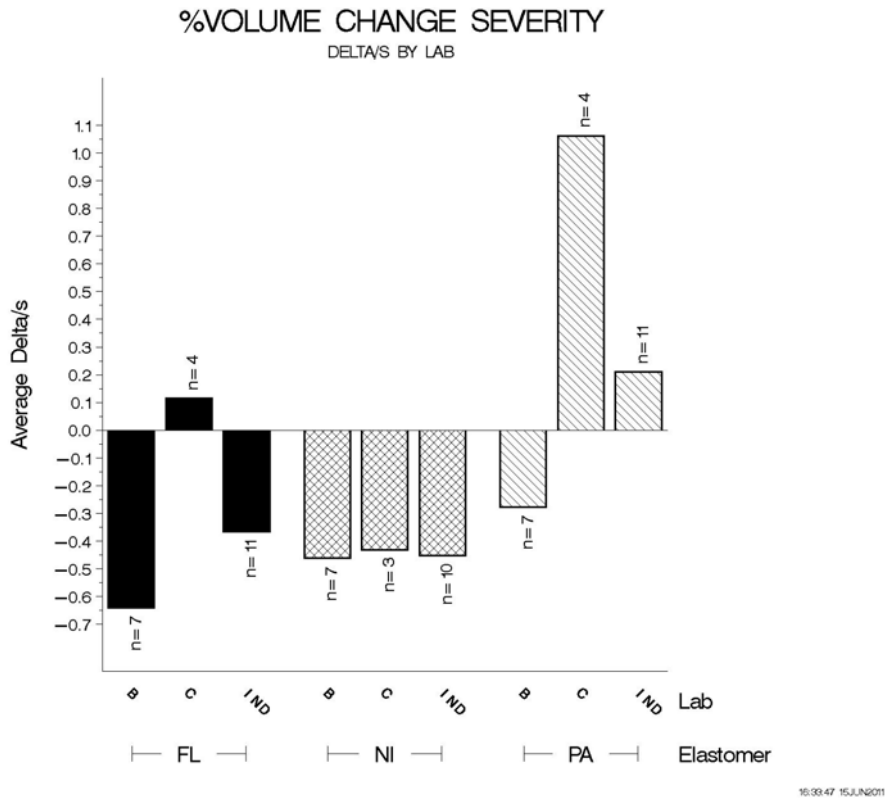
			Elastomer			Validity			Loss Rate		
Lab	Cause		FL	NI	PA	LI	XC	XI	Lost	Starts	%
C	Incorrect setup.		●					●	3	24	13%
	Incorrect setup.				●			●			
	Volume change and hardness not recorded.			●		●					
		Lost	1	1	1	1	0	2			
		Starts	27	18	22	67	67	67			
		%	4%	6%	5%	1%	0%	3%			

Lost tests are calibration attempts that were either aborted or operationally invalid.

			Average Δ/s by Lab		
Elastomer	Lab	n	PELA	PVCA	SAHA
FL	B	7	-0.184	-0.642	-0.242
	C	4	0.658	0.115	-0.625
	Industry	11	0.123	-0.366	-0.381
	Shift*	11	0.949	-0.207	-0.539
NI	B	7	-0.456	-0.463	-0.004
	C	3	-0.439	-0.432	0.568
	Industry	10	-0.451	-0.453	0.168
	Shift*	10	-2.677	-0.296	0.222
PA	B	7	0.570	-0.277	-0.029
	C	4	0.417	1.063	-0.138
	Industry	11	0.514	0.210	-0.069
	Shift*	11	11.518	0.335	-0.182

*as computed using historic pooled s

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DELTA/S BY LAB
Average Delta/s
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
−0.7
n= 7
n= 4
n= 11
n= 7
n= 3
n= 10
n= 7
n= 4
n= 11
B
C
IND
Lab
FL
NI
PA
Elastomer
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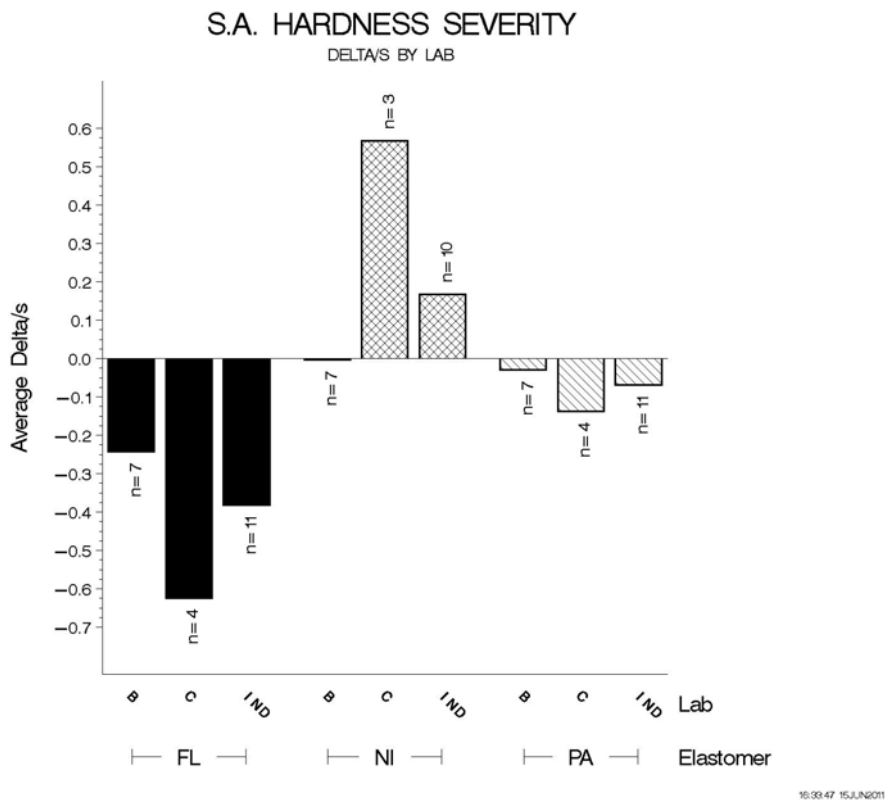
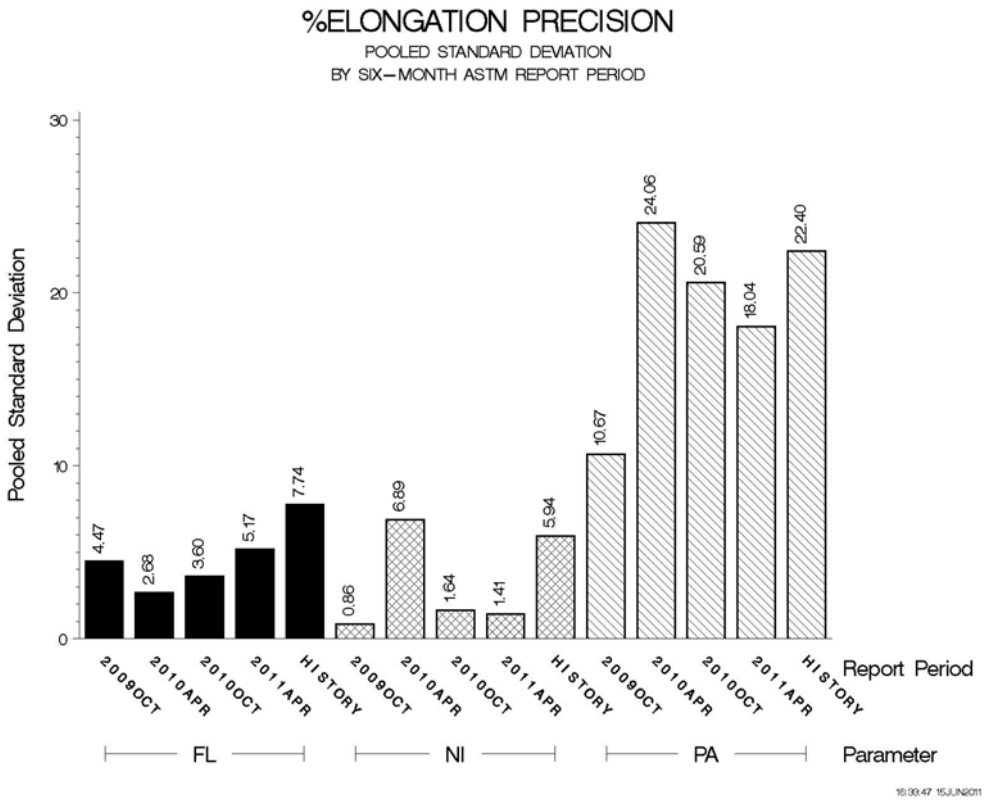

S.A. HARDNESS SEVERITY
DELTA/S BY LAB
Average Delta/s
0.6
0.5
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
−0.7
n= 7
n= 4
n= 11
n= 7
n= 3
n= 10
n= 7
n= 4
n= 11
B
C
IND
Lab
FL
NI
PA
Elastomer
16:39:47 15JUN2011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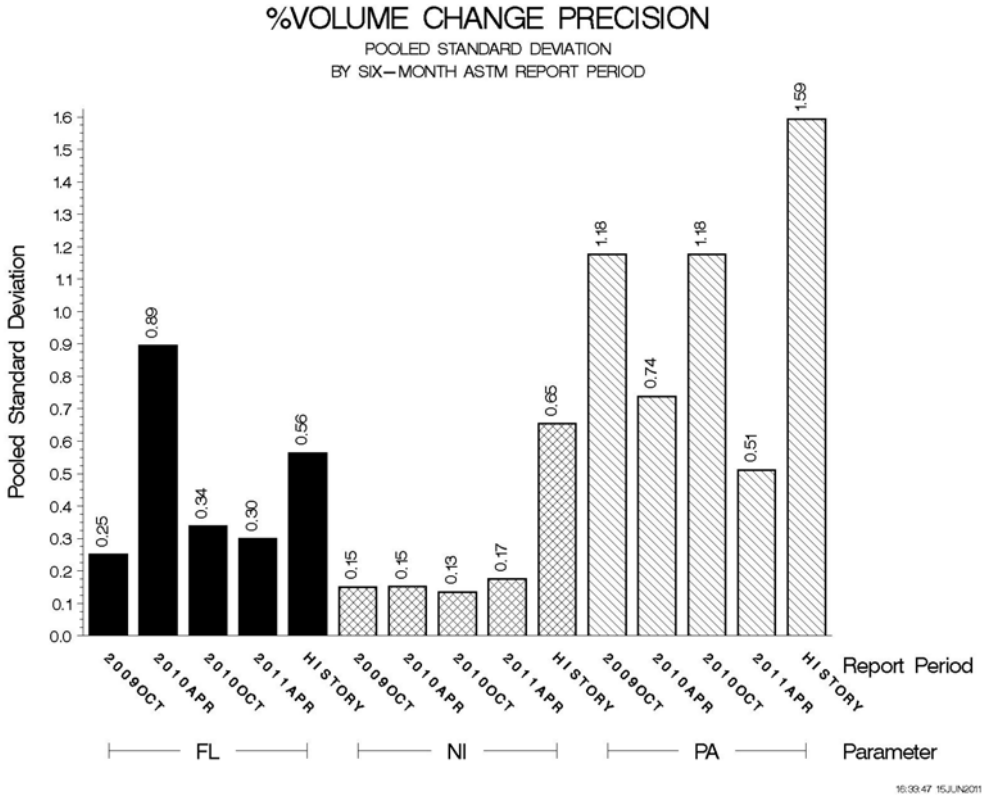
POOLED STANDARD DEVIATION
BY SIX-MONTH ASTM REPORT PERIOD
Pooled Standard Deviation
30
20
10
0
4.47
2.68
3.60
5.17
7.74
0.86
6.89
1.64
1.41
5.94
10.67
24.06
20.59
18.04
22.40
2009OCT
2010APR
2010OCT
2011APR
HISTORY
Report Period
FL
NI
PA
Parameter
16:39:47 15JUN2011


%VOLUME CHANGE PRECISION
POOLED STANDARD DEVIATION
BY SIX-MONTH ASTM REPORT PERIOD
Pooled Standard Deviation
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.25
0.89
0.34
0.30
0.56
0.15
0.15
0.13
0.17
0.65
1.18
0.74
1.18
0.51
1.59
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2010APR
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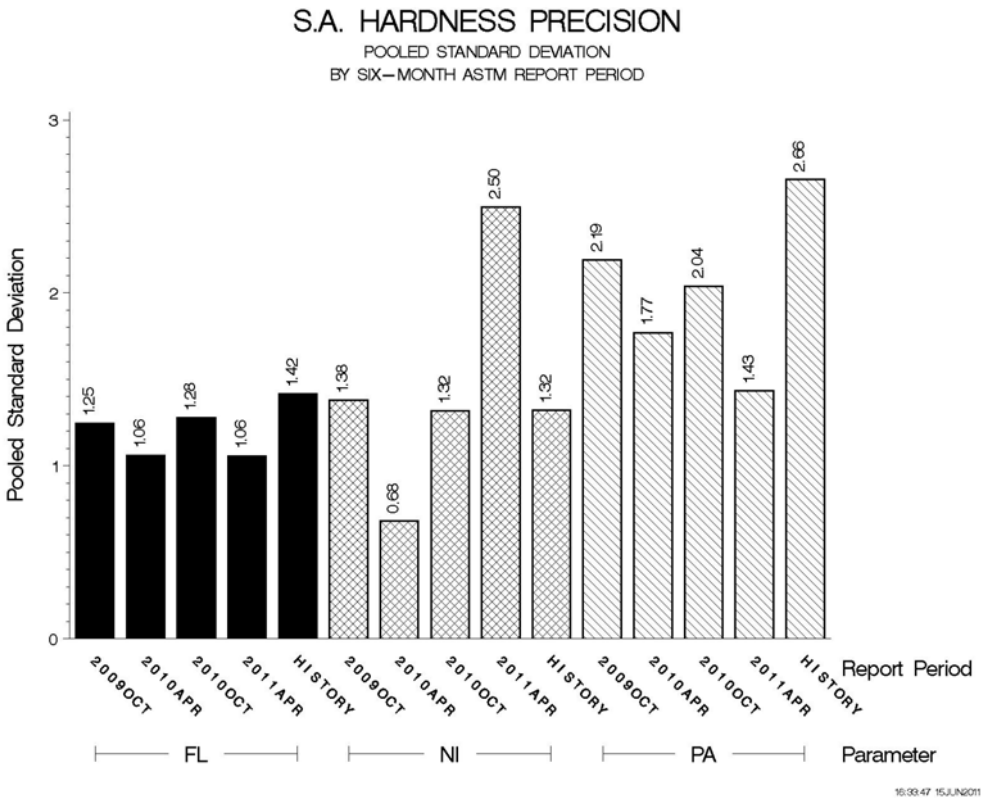
HISTORY
Report Period
FL
NI
PA
Parameter
16:39:47 15JUN2011

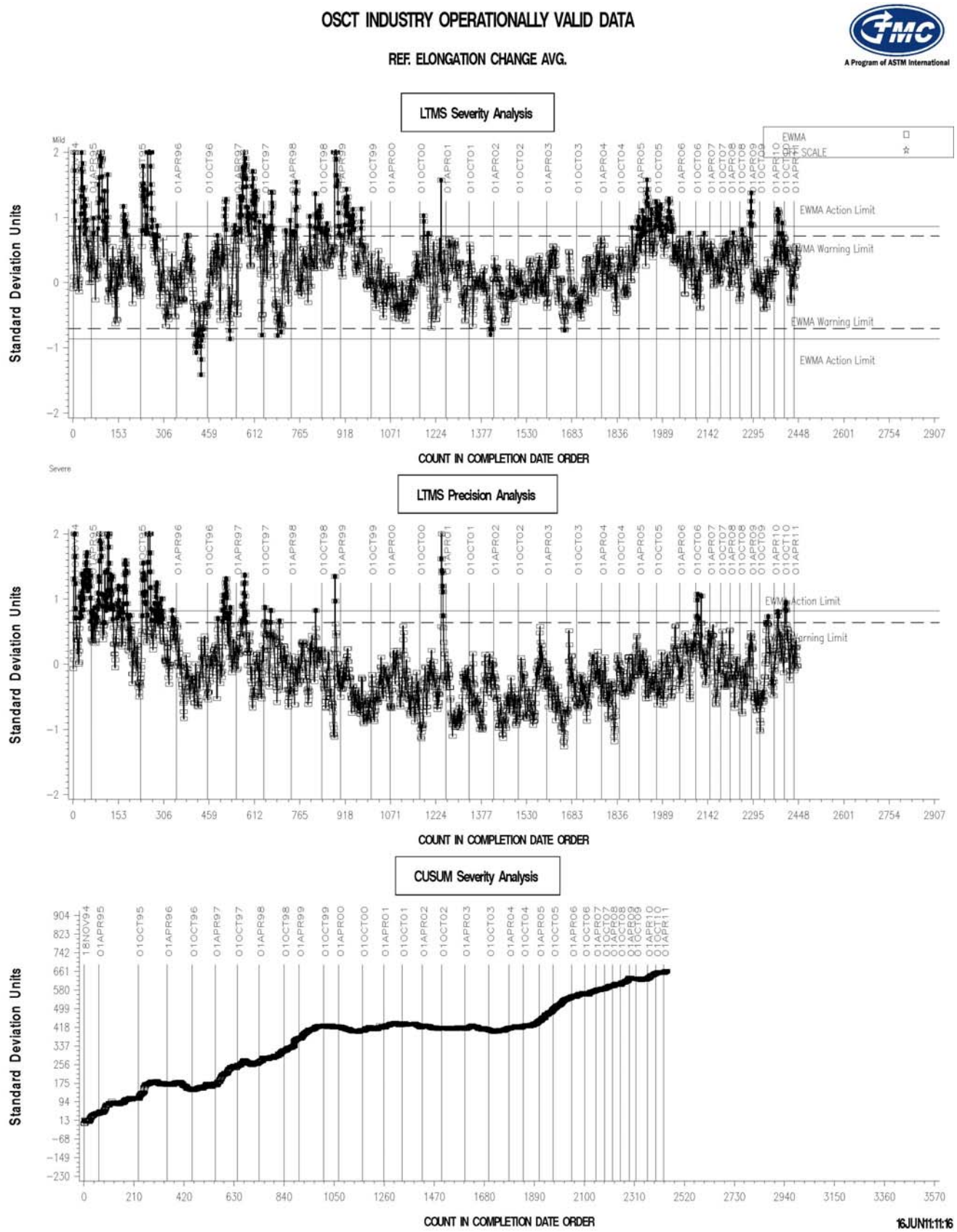


INDUSTRY CONTROL CHARTS:

The industry control charts are shown beginning on the following page. Following the standard industry charts are charts showing only the most recent 200 tests (so as to better show detail).

During this period, PELA exceeded the severity precision limit for a string of four tests at the beginning of the period as the result of a string of alternating polyacrylate and fluoroelastomer tests; polyacrylate results are consistently running high of target where fluoroelastomers are not. PVCA and SAHA remained within both the severity and precision action limits throughout this reporting period.

Following the standard industry control charts is a page showing by-elastomer control charts for all three test parameters. Showing all the charts on the same page allows comparing the various parameter/elastomer combinations. The charts are small but are readable for the purpose of discerning overall performance trends. Two of the charts thus presented, polyacrylate PELA and fluoroelastomer PVCA, indicate long-standing off target performance. Polyacrylate PELA results are generally higher than target; fluoroelastomer PVCA results are generally lower. At its last meeting, the surveillance panel briefly discussed the appropriateness of an industry correction factor to these two elastomer/parameter combinations.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REF. ELONGATION CHANGE AVG.
A Program of ASTM International
LTMS Severity Analysis
Mild
EWMA
TARGET SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
Severe
EWMA Action Limit
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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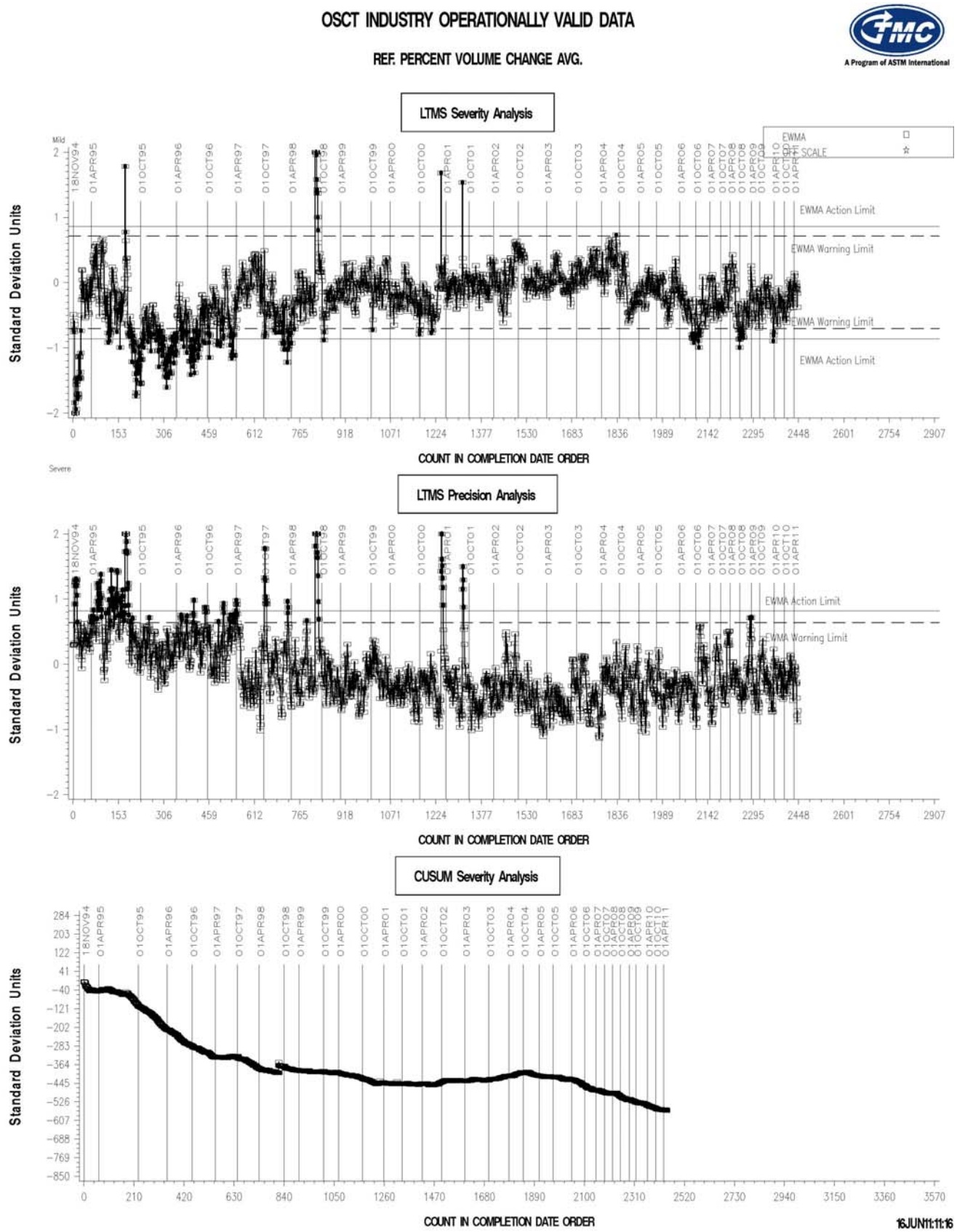
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A Program of ASTM International
LTMS Severity Analysis
Mild
Standard Deviation Units
EWMA
EWMA SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
COUNT IN COMPLETION DATE ORDER
Severe
LTMS Precision Analysis
Standard Deviation 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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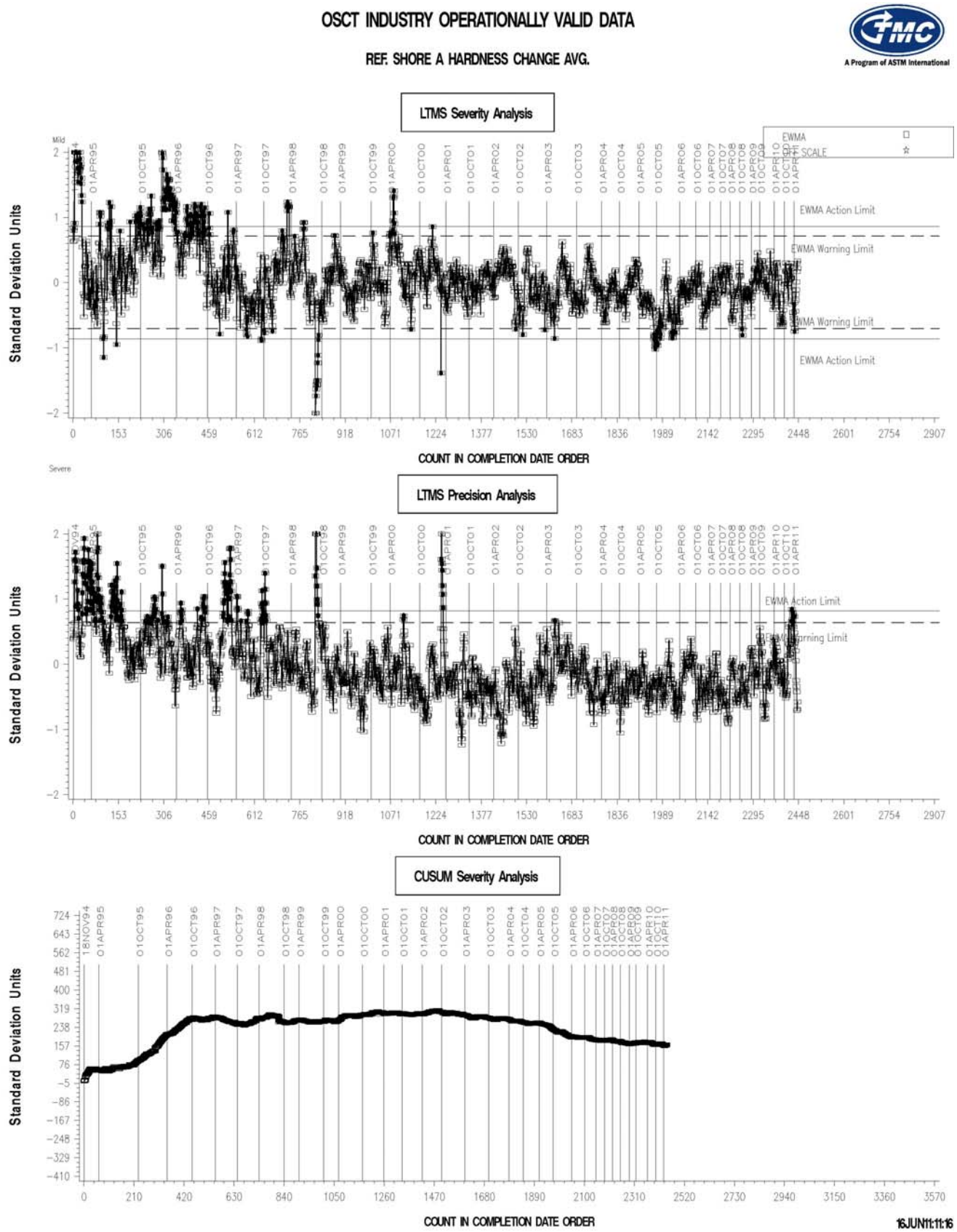
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A Program of ASTM International
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Mild
Severe
EWMA
TARGET SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
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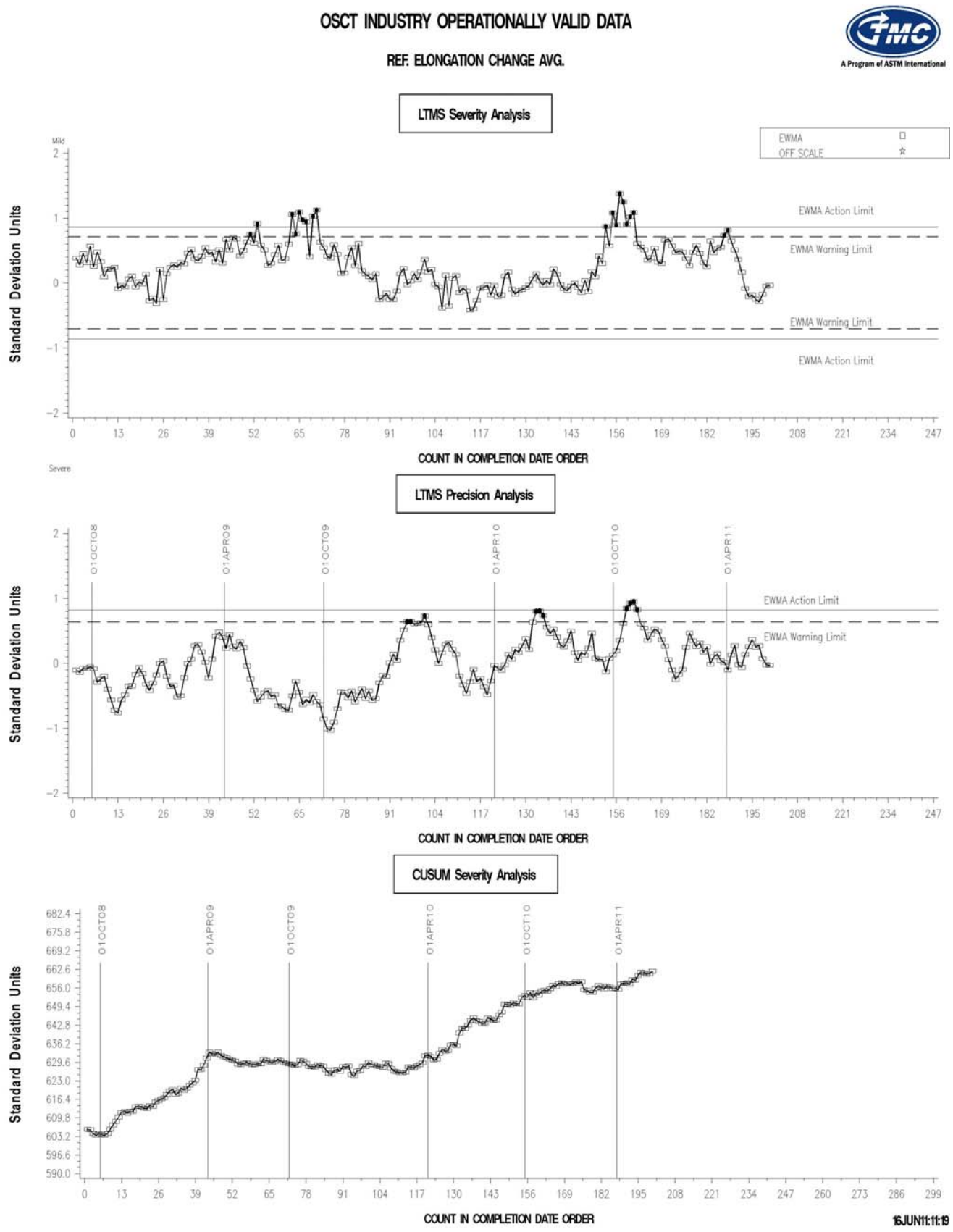
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LTMS Severity Analysis
EWMA
OFF SCALE
Mild
Standard Deviation Units
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
COUNT IN COMPLETION DATE ORDER
Severe
LTMS Precision Analysis
01OCT08
01APR09
01OCT09
01APR10
01OCT10
01APR11
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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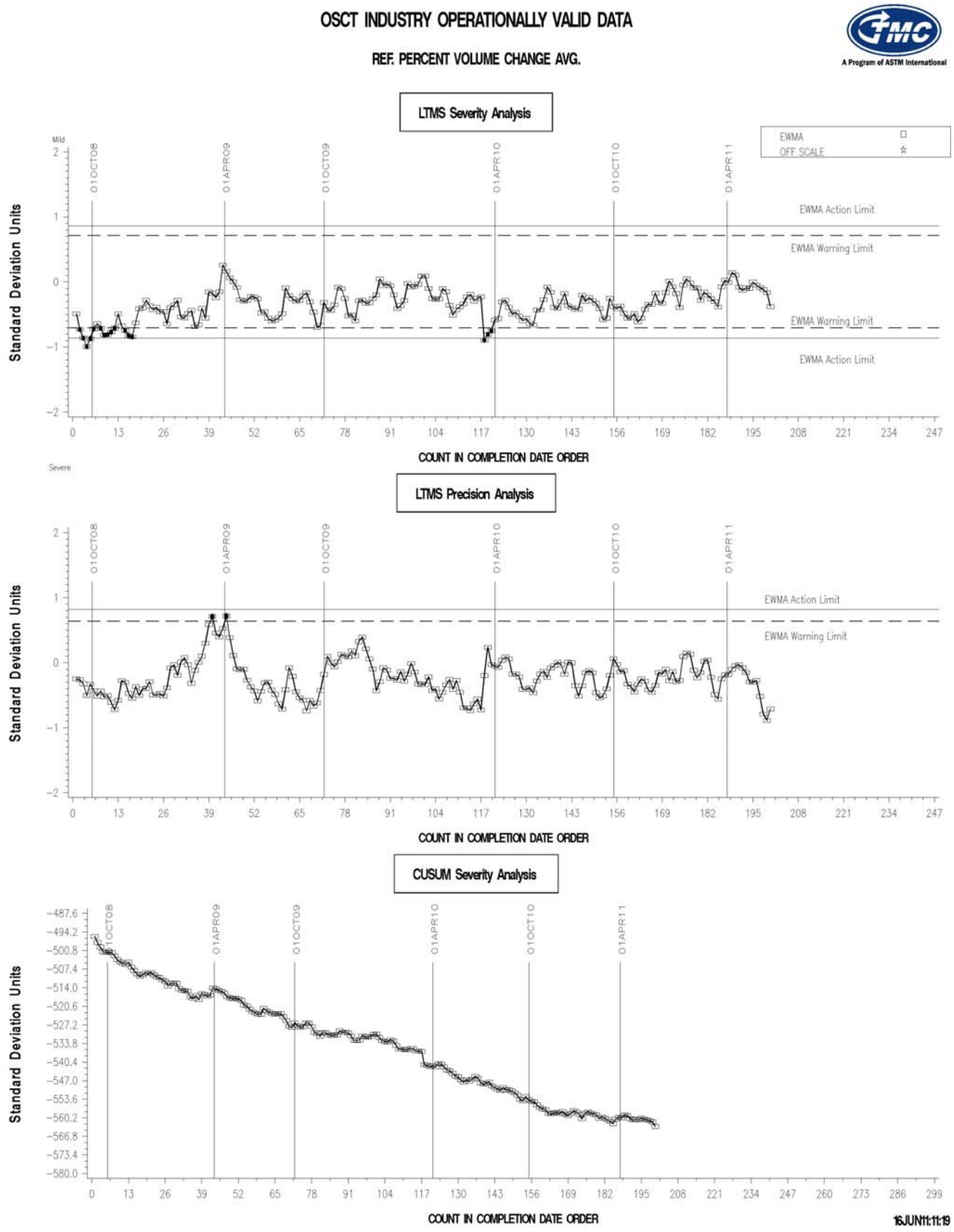
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A Program of ASTM International
LTMS Severity Analysis
Mild
EWMA
OFF SCALE
01OCT08
01APR09
01OCT09
01APR10
01OCT10
01APR11
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
Severe
EWMA Action Limit
EWMA Warning Limit
Standard Deviation Units
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Standard Deviation Units
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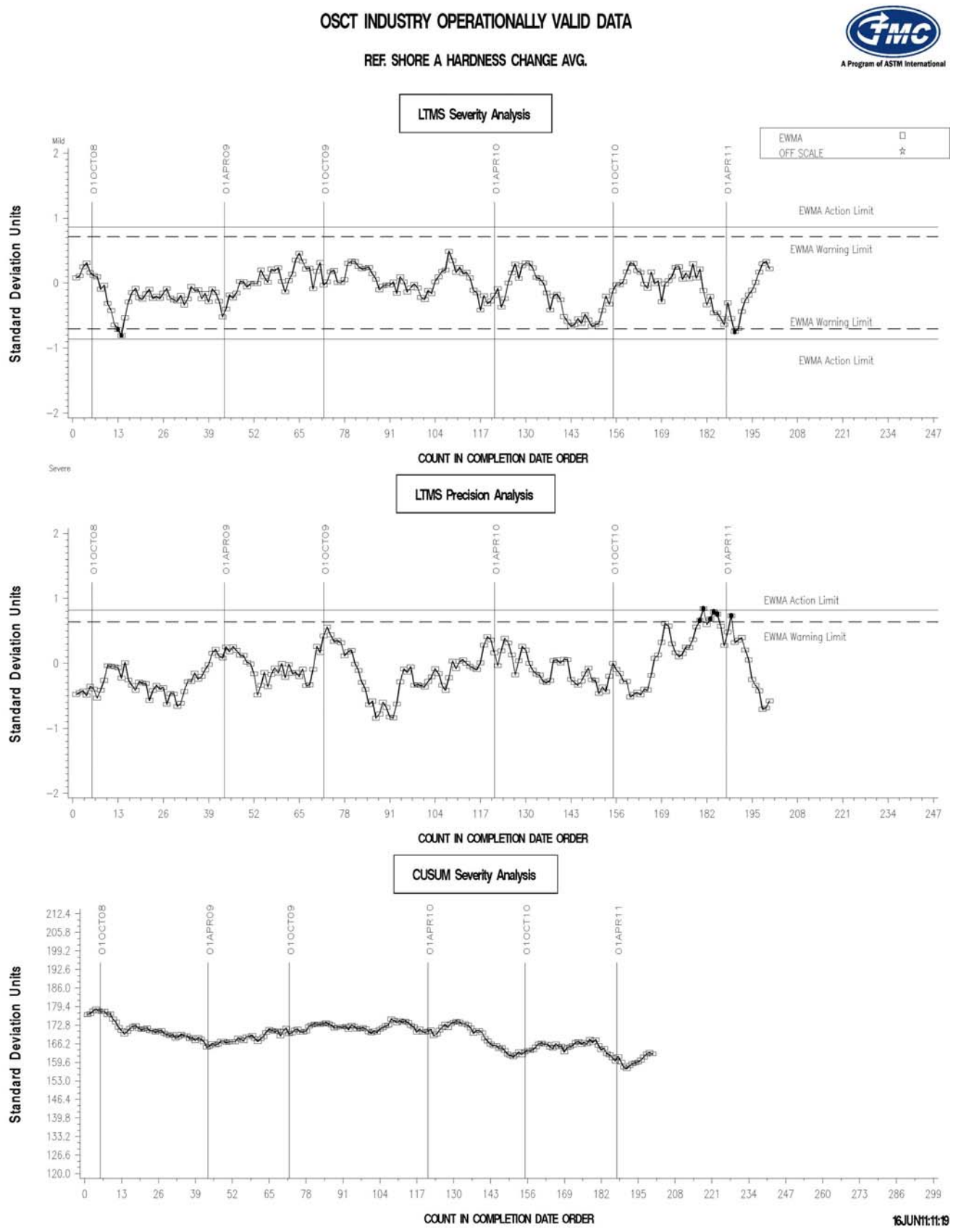
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Mild
EWMA
OFF SCALE
01OCT08
01APR09
01OCT09
01APR10
01OCT10
01APR11
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
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LTMS Precision Analysis
EWMA Action Limit
EWMA Warning Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
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OSDP FL INDUSTRY OPERATIONALLY VALID DATA
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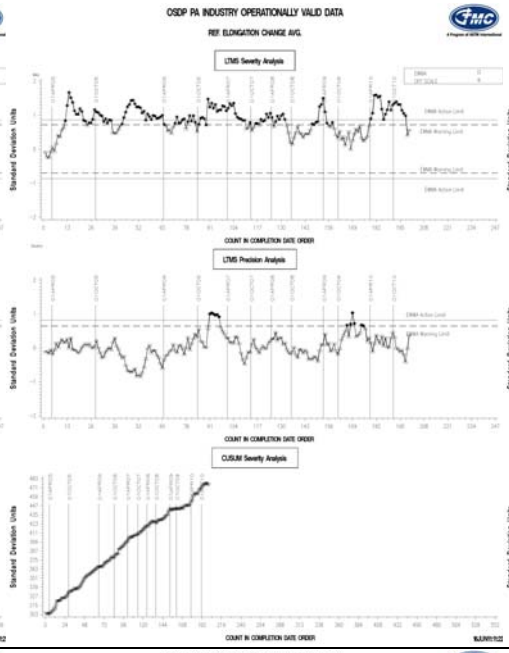
LTMS Severity Analysis
LTMS Precision Analysis
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER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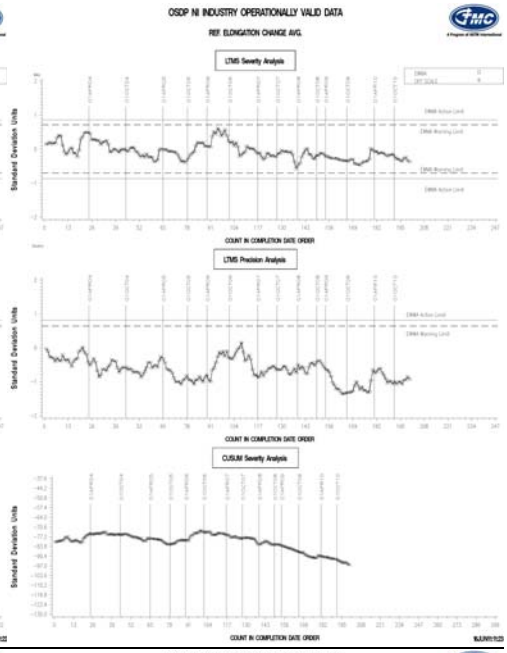
COUNT IN COMPLETION DATE ORDER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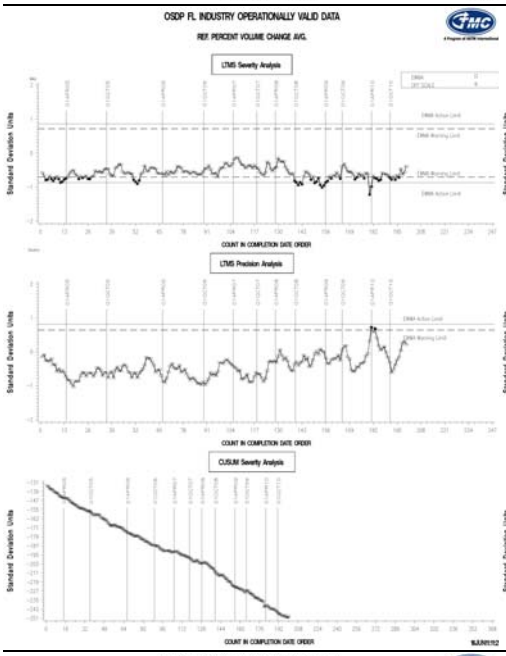
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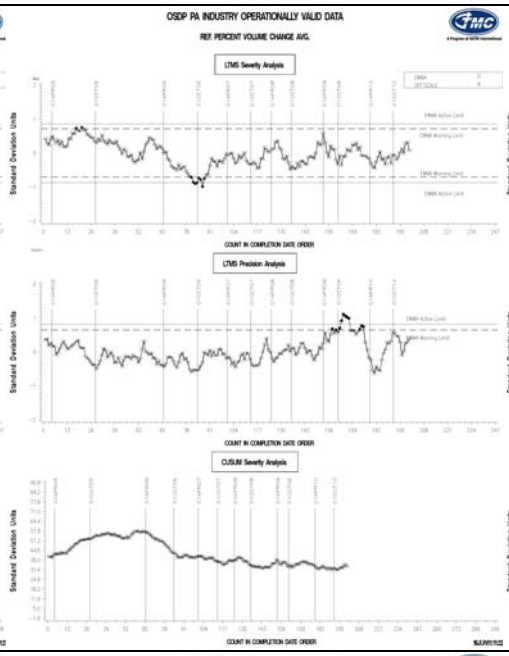
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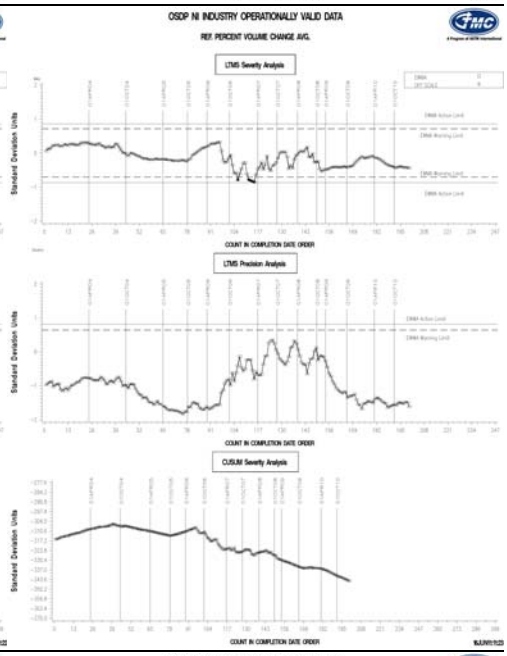
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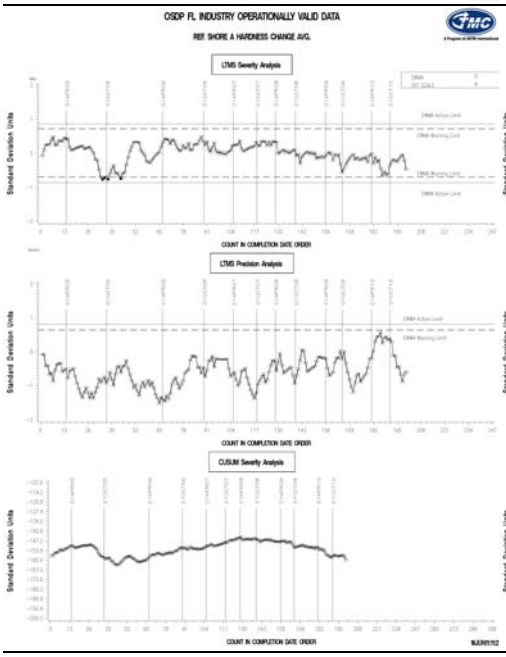
COUNT IN COMPLETION DATE ORDER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CUSUM Severity Analysis
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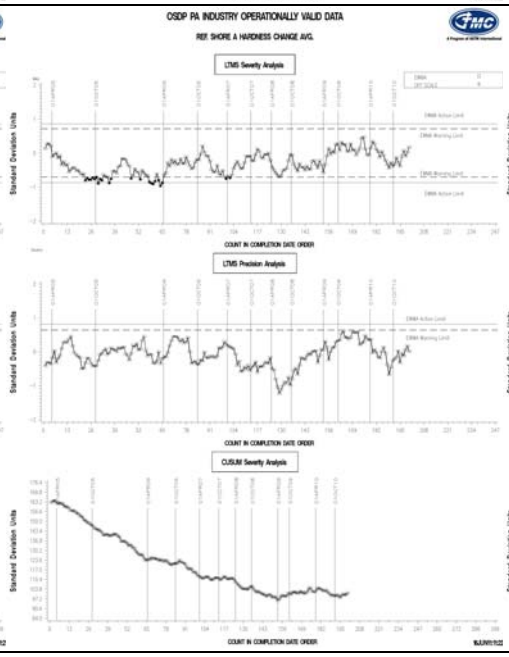
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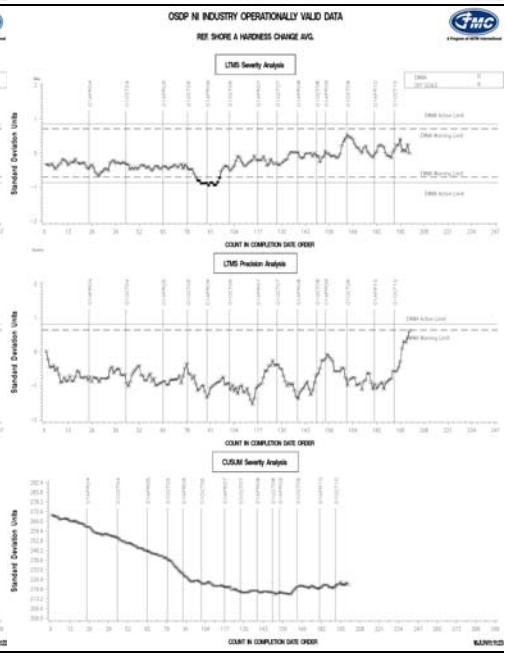
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LTMS Severity Analysis
LTMS Precision Analysis
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER

TIMELINE OF SIGNIFICANT EVENTS IN THE HISTORY OF THE OSCT TEST:

Effective Date	Information Letter	Event
	98-3	Section 5.2.4 Editorial Correction
19970324	97-1	Elastomer requirements for testing a non-reference oil.
19970701	97-2	Specimen cleaning procedure
19971201	97-3	Data dictionary and report forms revision
19980122	98-2	Backlash Settings Clarification
19980504	98-1	Seal Elastomer Shelf Life
19980504	98-1	Revised Reference Oil and Non-reference Oil Requirements
19980504	98-1	Addition of Calibration Requirements for Hardness Durometer, Balance, and Tension Testing Machine
20040930		Implemented LTMS Reference Oil Targets
20050815	05-1	Updated Test Precision
20050815	05-1	Rounding Test Results Using ASTM E 29
20051102	05-2	Initial and Final Volume Measurements
20060327	06-1	Addition of a Calibration Procedure for the Tension Testing Machine
20060327	06-1	New Reference Oil Testing Section
20060327	06-1	Editorial Changes
20060331	06-2	Specimen Spacer Width Revision
20071001	07-1	Test Temperature Data Logging an Tolerance
20080114	07-2	Percent Deviation Calculation for Test Oil Temperature Data Logging
20081007		Extend Nitrile elastomer batch NI332 shelf life from 10/10/2008 to 12/31/2008
20081007	08-1	Clarification of allowable oil temperature variations
20081007	08-2	Allow elastomer shelf life to extend beyond two years
20090904	09-1	Revised Extensometer Calibration Procedure

TMC LAB VISITS:
One OSCT lab visit was conducted during this report period. No significant procedural deviations were observed.

INFORMATION LETTERS:
No 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
160-1	33	432	85.6
161-1	28	0	0.0
168	35	117	23.2
169	74	1279	253.6
Total	170	1828	362.5

Oil 161-1 has been depleted from TMC inventory. An exact reblend is not available. Oil 169 has been proposed as a replacement. Currently, both labs are running 169 runs in parallel with every run in order to collect data until the stock of 161-1 is completely consumed.

SDP/sdp/astm0411.doc/mem11-032.sdp.doc
cc: Frank Farber
Jeff Clark
ftp://ftp.astmtmc.cmu.edu/docs/gear/osct/semiannualreports/osct-04-2011.pdf

Distribution: email