A Program of ASTM International

Test Monitoring Center

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412-365-1000

MEMORANDUM: 15-047

DATE: November 24, 2015

TO: Don Bell, Chairman, OSCT Surveillance Panel

FROM: Scott Parke

SUBJECT: OSCT Reference oil testing from April 1, 2015 through September 30, 2015

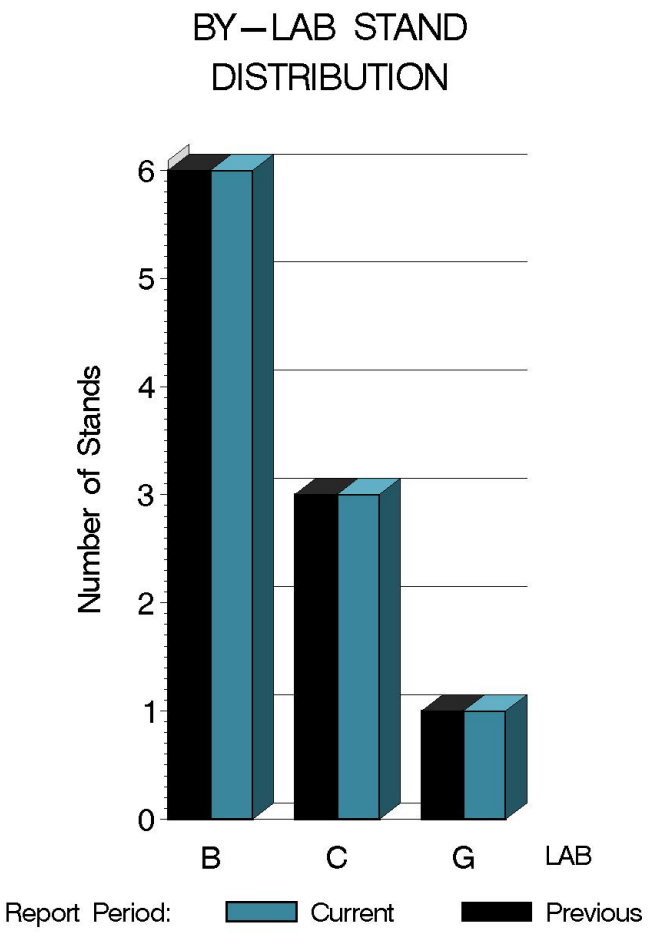
Please find attached a summary of reference oil testing activity this period.

SDP/sdp/mem15-047.sdp.doc
cc: Frank Farber
Jeff Clark
OSCT Surveillance Panel
ftp://ftp.astmtmc.cmu.edu/docs/gear/osct/semiannualreports/osct-10-2015.pdf

Distribution: email

OSCT (D5662)

	Reporting Data	Calibrated on 9-30-15
Number of Labs	3	3
Number of Stands	10	10

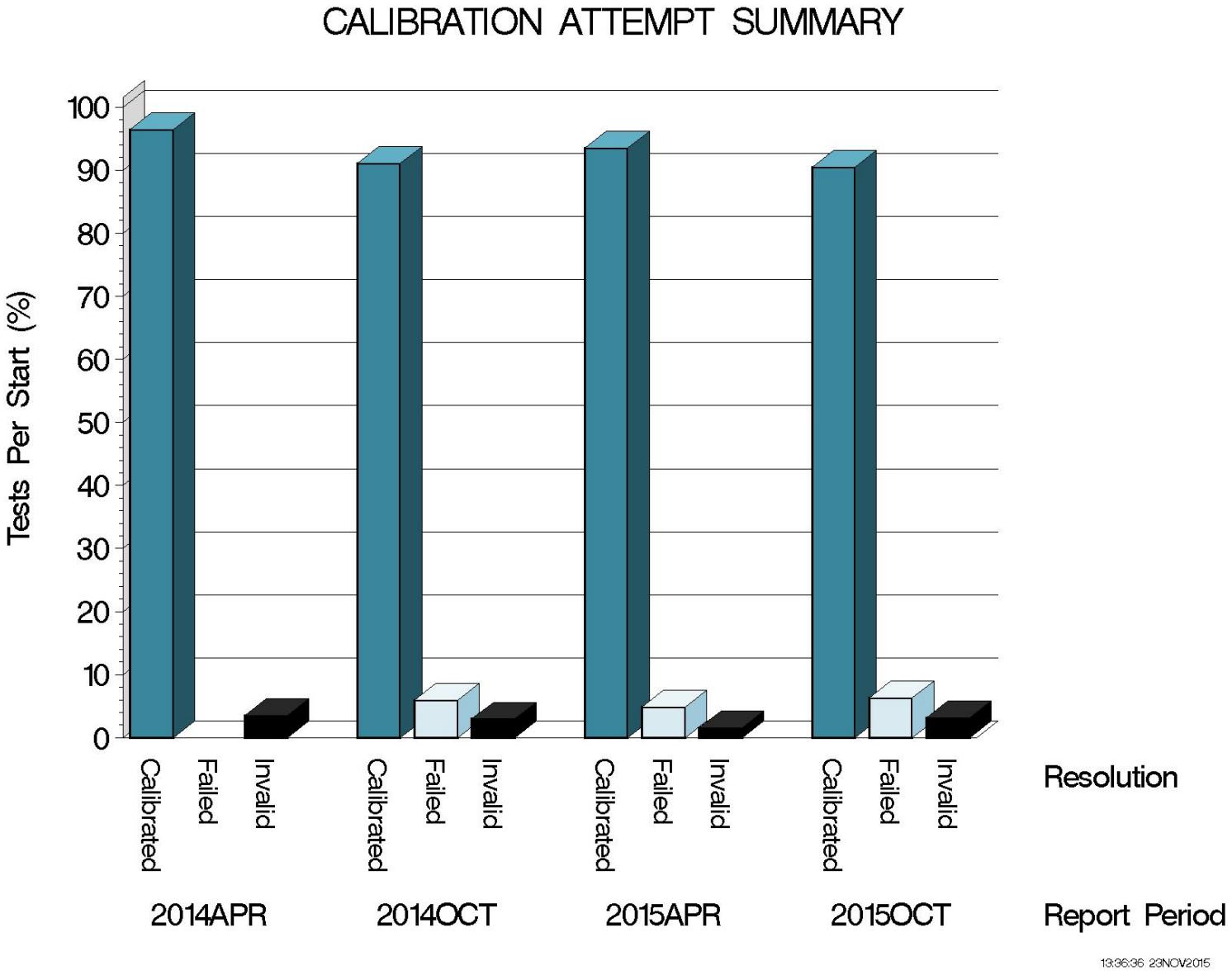


OSCT (D5662)

Test Distribution by Elastomer and Validity

					Totals	
		FL	NI	PA	Last Period	This Period
Accepted for calibration	AC	19	17	21	58	57
Rejected (low result)	OC	1	0	1	1	2
Rejected (high result)	OC	0	0	0	1	0
Rejected (combination)	OC	1	0	1	1	2
Invalidated	RC	0	1	1	1	2
Aborted	XC	0	0	0	0	0
Elastomer approval run	NI	17	2	1	40	20
Unacceptable approval run	MI	0	0	0	8	0
Total		38	20	25	110	83

OSCT (D5662)


CALIBRATION ATTEMPT SUMMARY
Tests Per Start (%)
100
90
80
70
60
50
40
30
20
10
0
Calibrated
Failed
Invalid
Calibrated
Failed
Invalid
Calibrated
Failed
Invalid
Calibrated
Failed
Invalid
Resolution
2014APR
2014OCT
2015APR
2015OCT
Report Period
13:36:36 23NOV2015

OSCT (D5662)

CAUSES FOR LOST TESTS

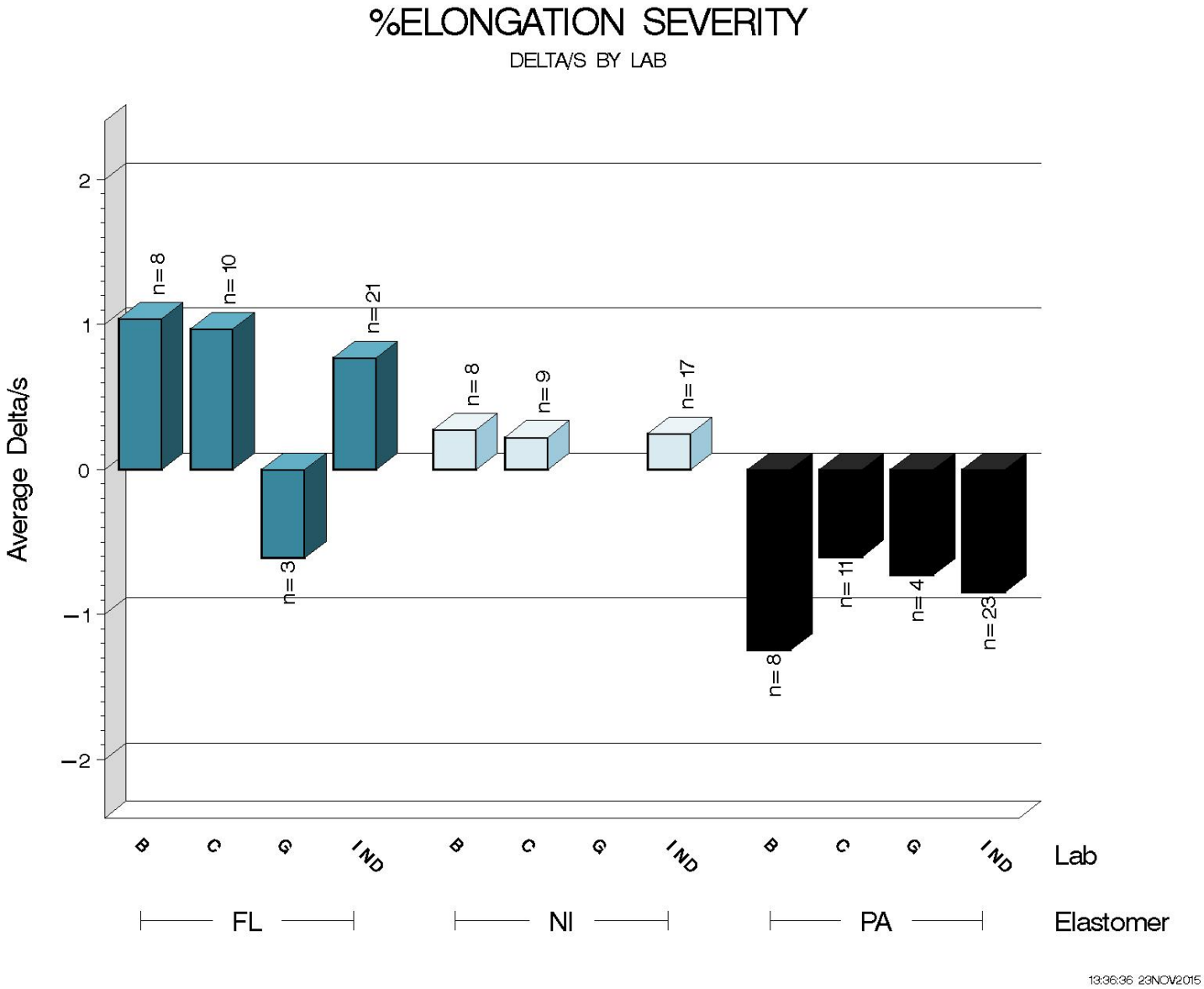
		Oil			Validity			Loss Rate		
Lab	Cause	FL	NI	PA	LC	RC	XC	Lost	Starts	%
B	Wrong oil used.		●			●		2	32	6%
				●						
	Lost	0	1	1	0	2	0			
	Starts	38	20	25	83	83	83			
	%	0%	5%	4%	0%	2%	0%			

OSCT (D5662)

Average Δ/s by Lab					
Elastomer	**Lab**	**n**	**PELA**	**PVCA**	**SAHA**
FL	B	8	1.037	0.193	-0.815
	C	10	0.969	-0.193	0.036
	G	3	-0.611	-0.932	0.314
	Industry	21	0.769	-0.152	-0.248
	Shift*	21	5.779%	-0.082%	-0.343 pts.
NI	B	8	0.273	0.120	-0.332
	C	9	0.222	-0.112	0.202
	Industry	17	0.246	-0.002	-0.049
	Shift*	17	1.355%	-0.001%	-0.062 pts.
PA	B	8	-1.247	-0.165	1.044
	C	11	-0.603	0.678	0.326
	G	4	-0.731	-1.764	1.556
	Industry	23	-0.849	-0.040	0.790
	Shift*	23	-18.244%	-0.078%	2.006 pts.

*computed using historic pooled s

OSCT (D5662)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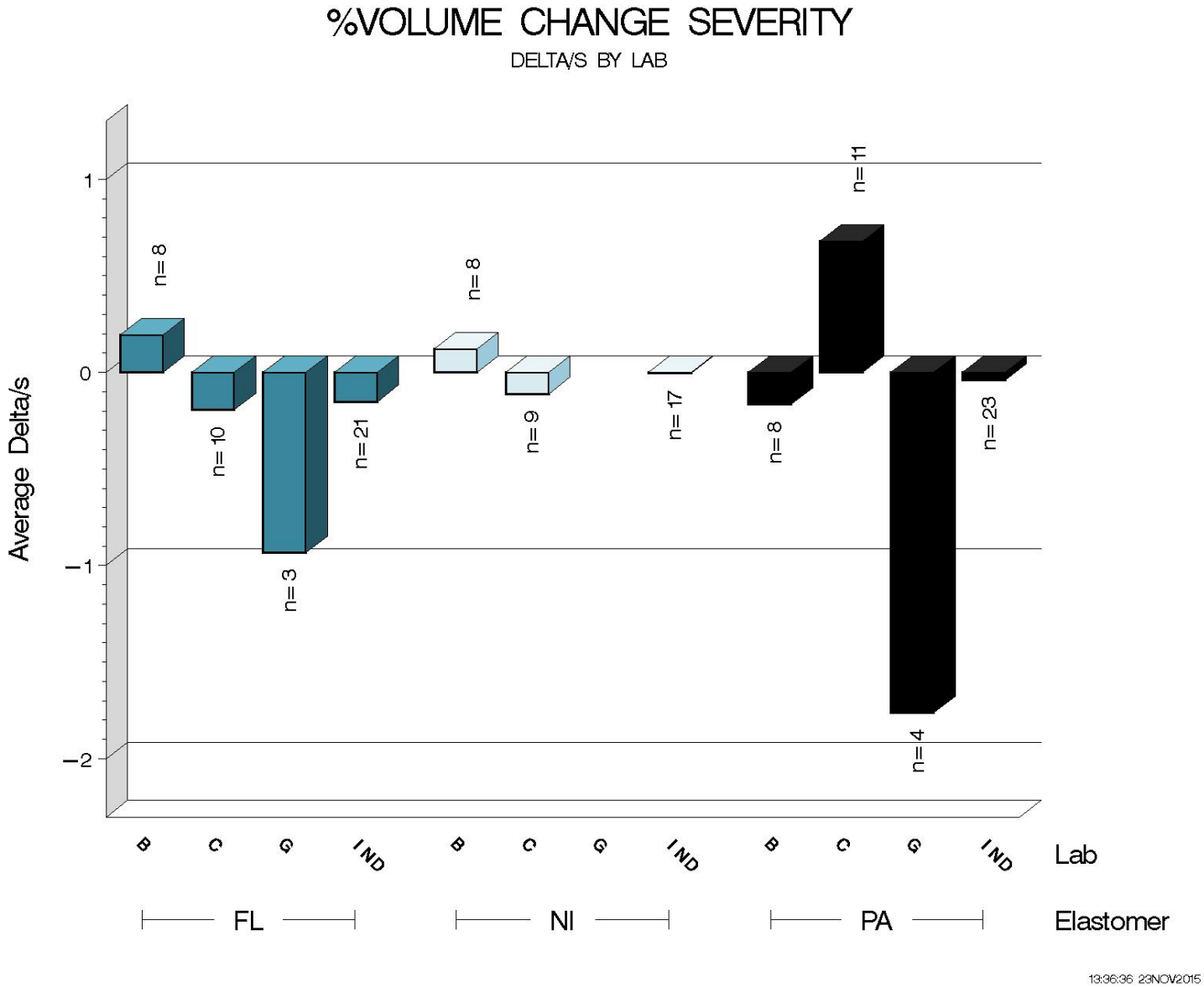
DELTA/S BY LAB
Average Delta/s
2
1
0
−1
−2
n= 8
n= 10
n= 3
n= 21
n= 8
n= 9
n= 17
n= 8
n= 11
n= 4
n= 23
B
C
G
IND
B
C
G
IND
B
C
G
IND
Lab
FL
NI
PA
Elastomer
13:36:36 23NOV2015

OSCT (D5662)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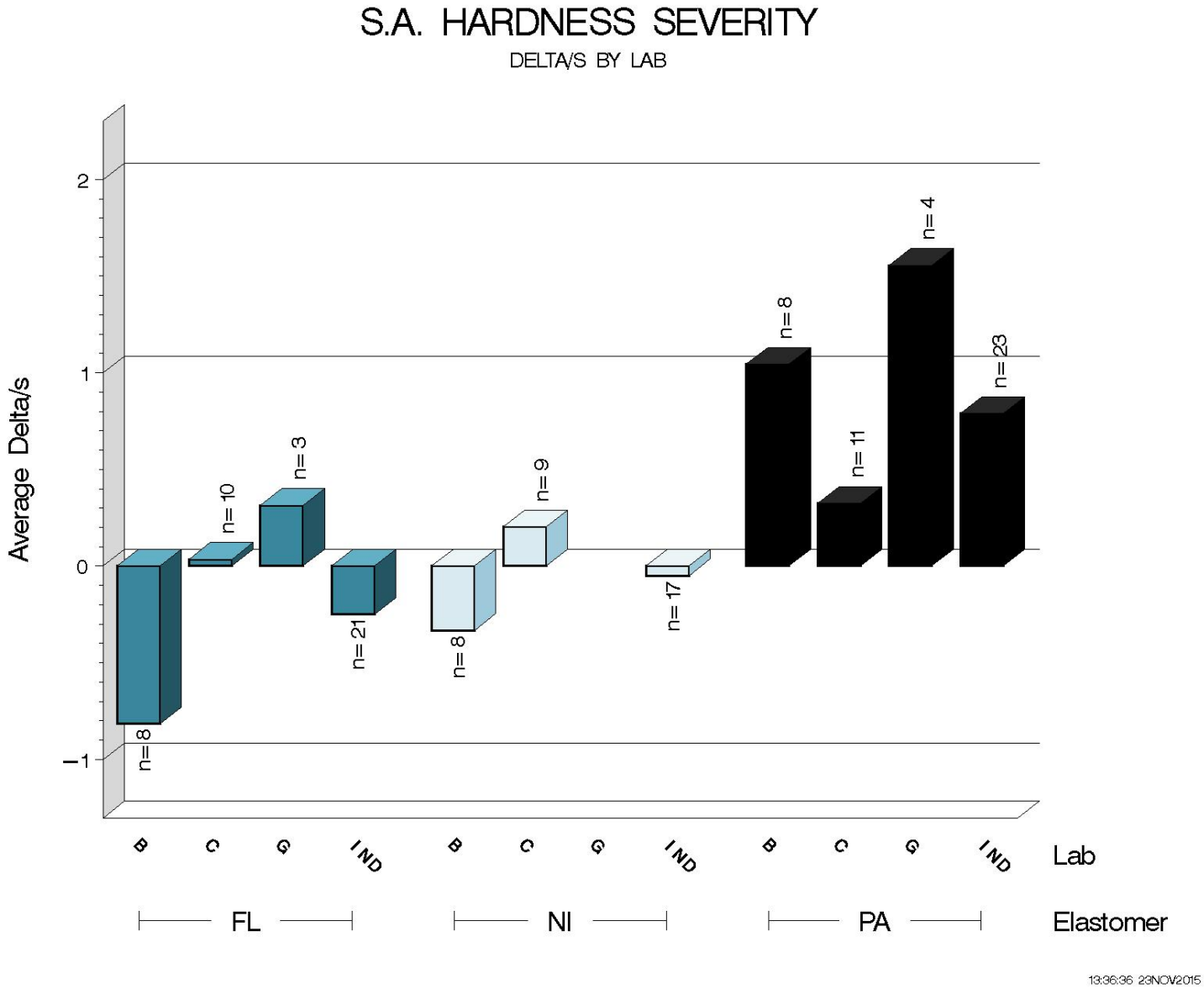
DELTA/S BY LAB
Average Delta/s
1
0
-1
-2
n= 8
n= 10
n= 3
n= 21
n= 8
n= 9
n= 17
n= 8
n= 11
n= 4
n= 23
B
C
G
IND
Lab
FL
NI
PA
Elastomer
13:36:36 23NOV2015

OSCT (D5662)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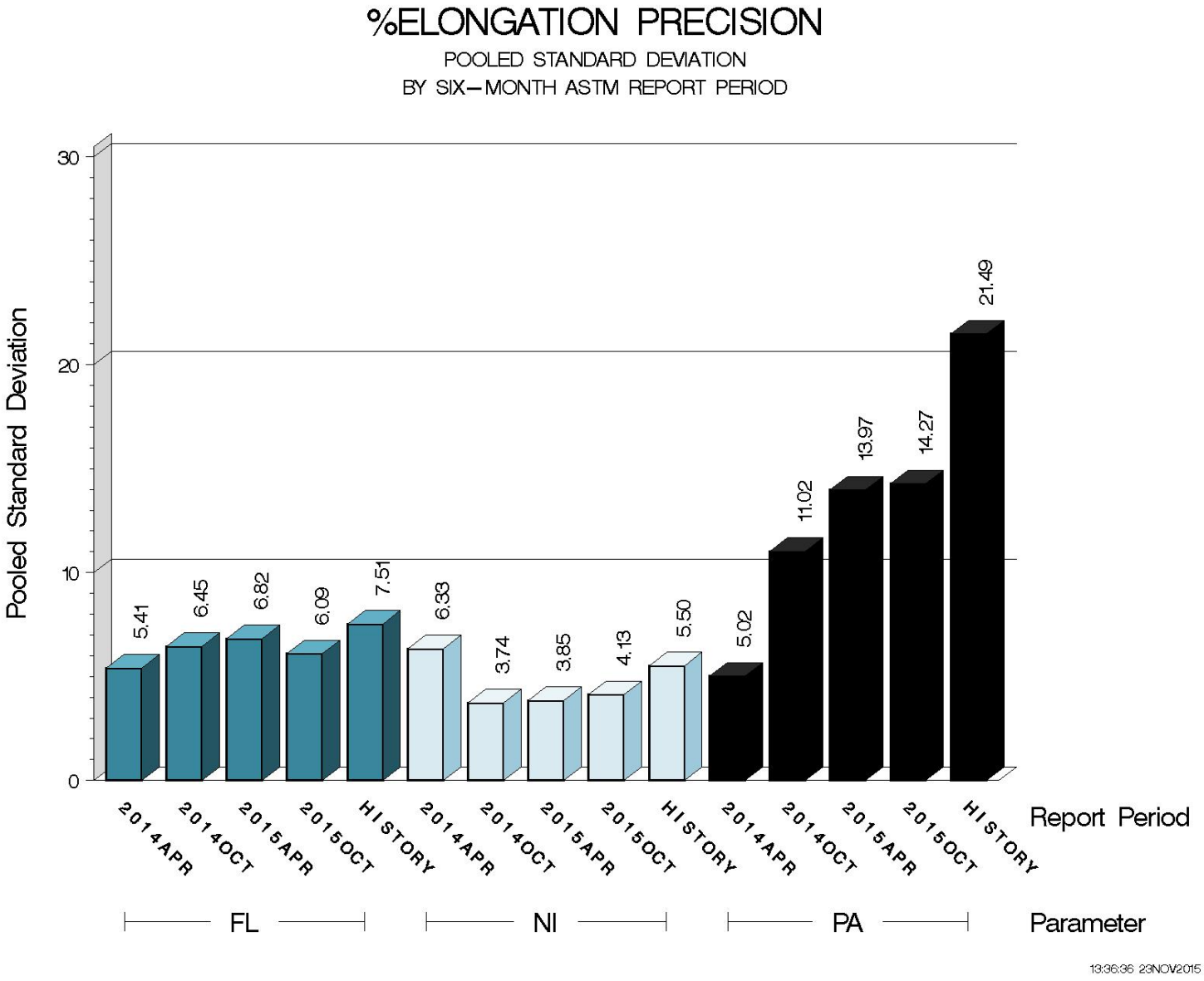
DELTA/S BY LAB
Average Delta/s
2
1
0
-1
n= 8
n= 10
n= 3
n= 21
n= 8
n= 9
n= 17
n= 8
n= 11
n= 4
n= 23
B
C
G
IND
Lab
FL
NI
PA
Elastomer
13:36:36 23NOV2015

OSCT (D5662)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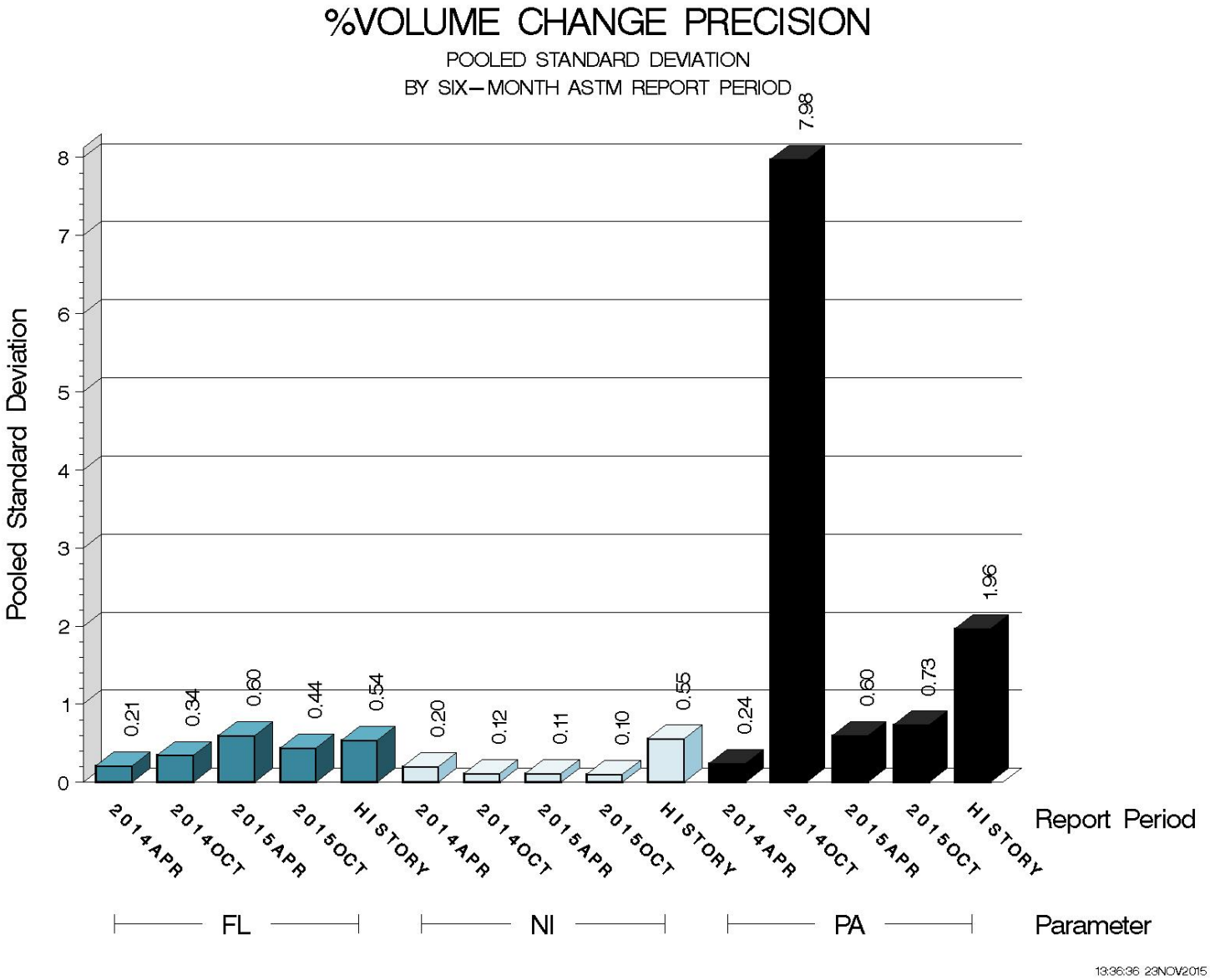
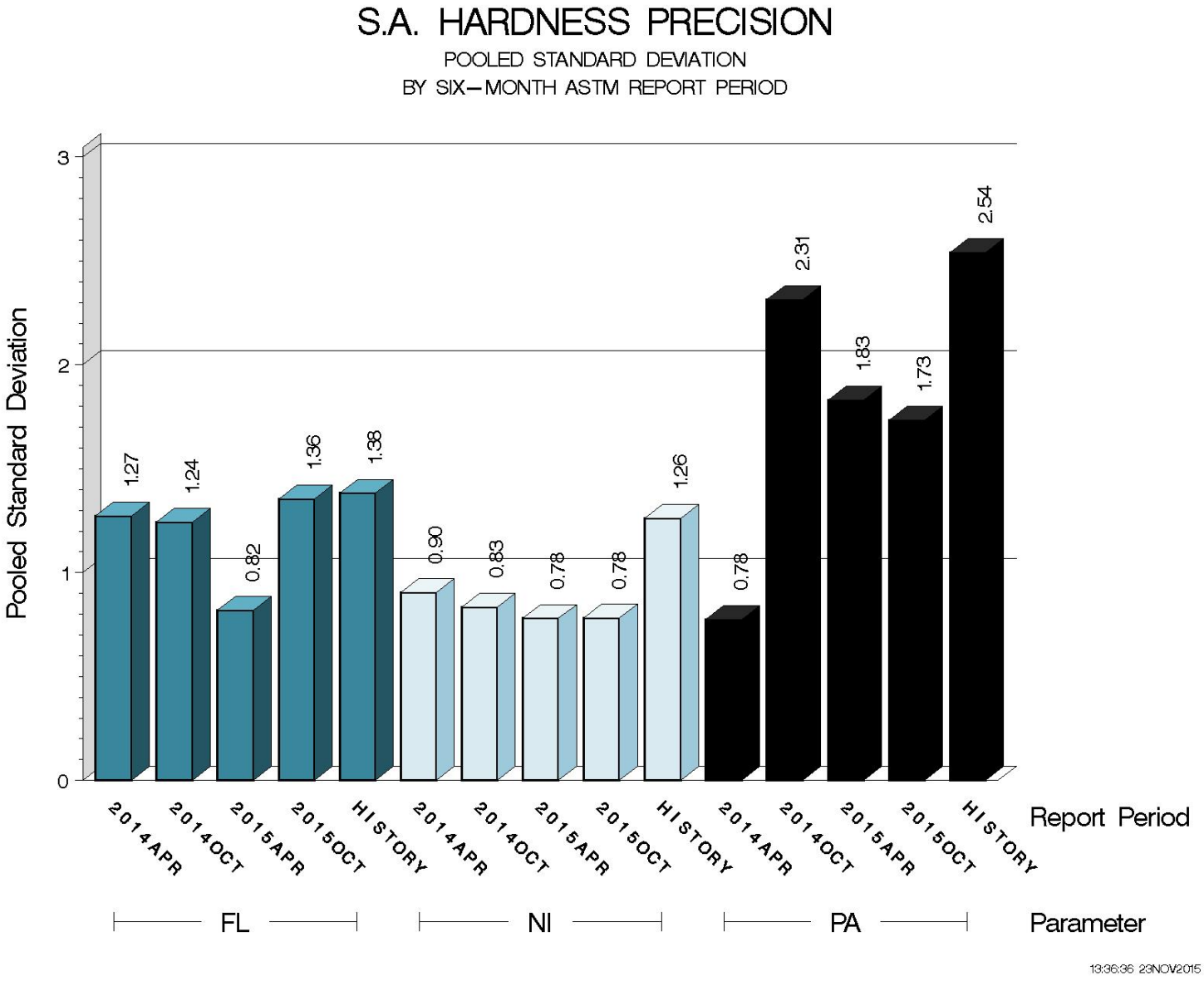
POOLED STANDARD DEVIATION
BY SIX–MONTH ASTM REPORT PERIOD
Pooled Standard Deviation
0
10
20
30
5.41
6.45
6.82
6.09
7.51
6.33
3.74
3.85
4.13
5.50
5.02
11.02
13.97
14.27
21.49
2014APR
2014OCT
2015APR
2015OCT
HISTORY
Report Period
FL
NI
PA
Parameter
13:36:36 23NOV2015

OSCT (D5662)


%VOLUME CHANGE PRECISION
POOLED STANDARD DEVIATION
BY SIX–MONTH ASTM REPORT PERIOD
Pooled Standard Deviation
0
1
2
3
4
5
6
7
8
0.21
0.34
0.60
0.44
0.54
0.20
0.12
0.11
0.10
0.55
0.24
7.98
0.60
0.73
1.96
2014APR
2014OCT
2015APR
2015OCT
HISTORY
Report Period
FL
NI
PA
Parameter
13:36:36 23NOV2015

OSCT (D5662)


S.A. HARDNESS PRECISION
POOLED STANDARD DEVIATION
BY SIX–MONTH ASTM REPORT PERIOD
Pooled Standard Deviation
0
1
2
3
1.27
1.24
0.82
1.36
1.38
0.90
0.83
0.78
0.78
1.26
0.78
2.31
1.83
1.73
2.54
2014APR
2014OCT
2015APR
2015OCT
HISTORY
Report Period
FL
NI
PA
Parameter
13:36:36 23NOV2015

OSCT (D5662)

SUMMARY OF SEVERITY & PRECISION

Severity

The combined-elastomer industry charts show severity for all parameters within limits over this report period.

The by-elastomer charts, however, show that PELA results for fluoroelastomer trended above target this period while those for polyacrylate trended below. This is the explanation for the several PELA precision alarms for the period. The by-elastomer charts also show SAHA performance for polyacrylate recently trending above target.

Precision

As explained above, precision for PELA produced several alarms this period. PVCA and SAHA remained within limits.

Industry control charts follow.

OSCT (D5662)

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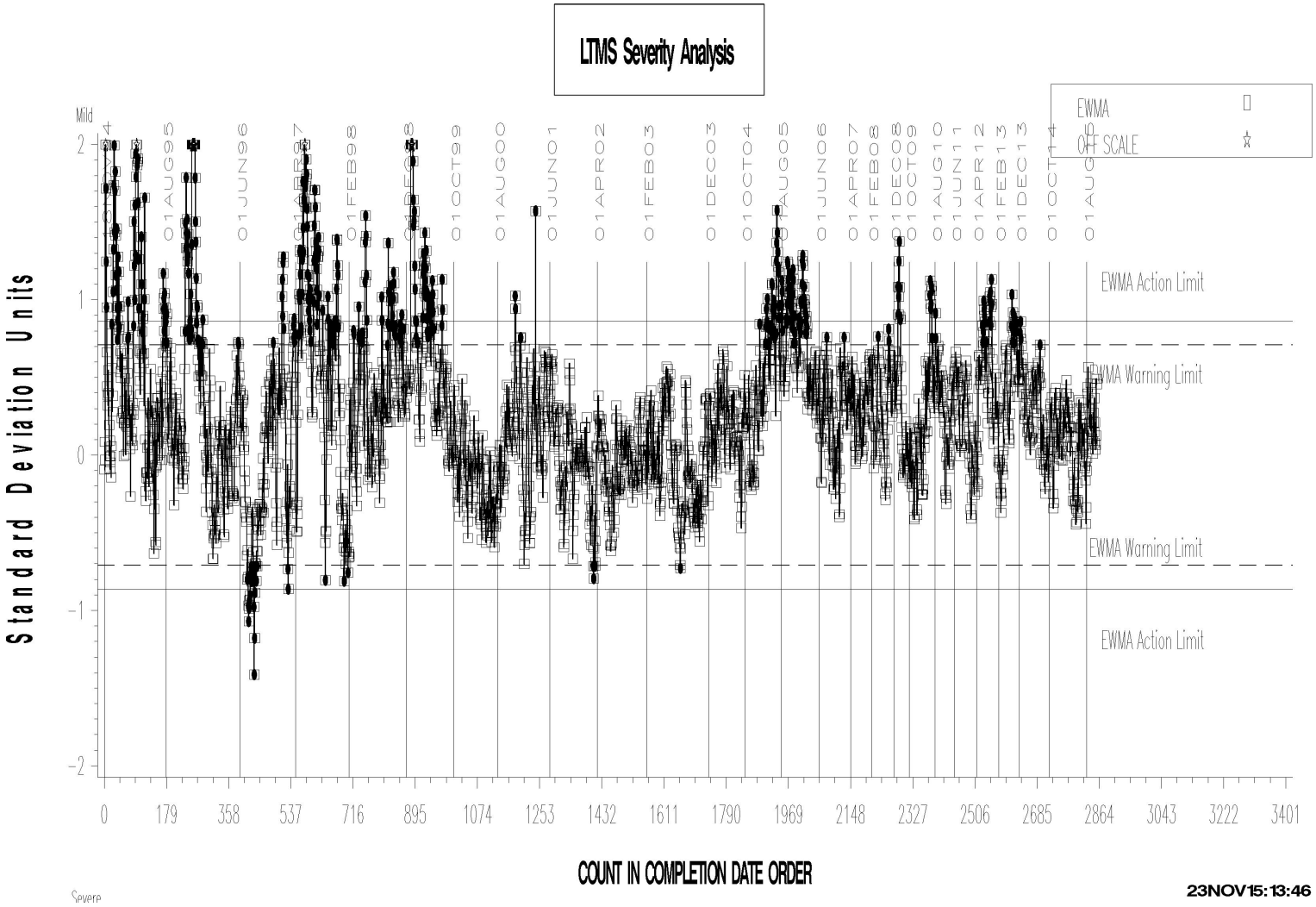

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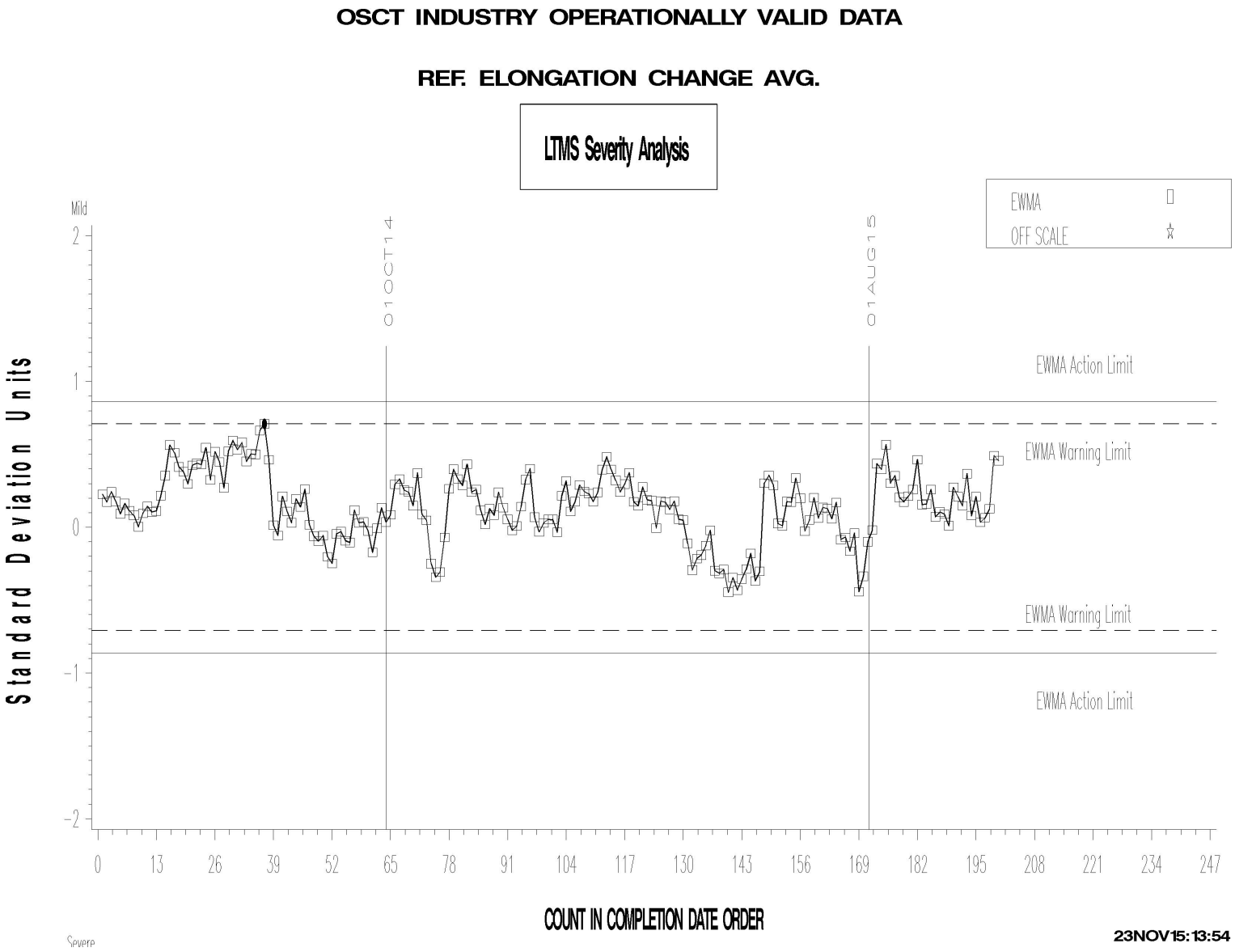
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REF. ELONGATION CHANGE AVG.
LTMS Severity Analysis
EWMA
OFF SCALE
Mild
01OCT14
01AUG15
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
2
1
0
-1
-2
0
13
26
39
52
65
78
91
104
117
130
143
156
169
182
195
208
221
234
247
COUNT IN COMPLETION DATE ORDER
Severp
23NOV15:13:54

OSCT (D5662)

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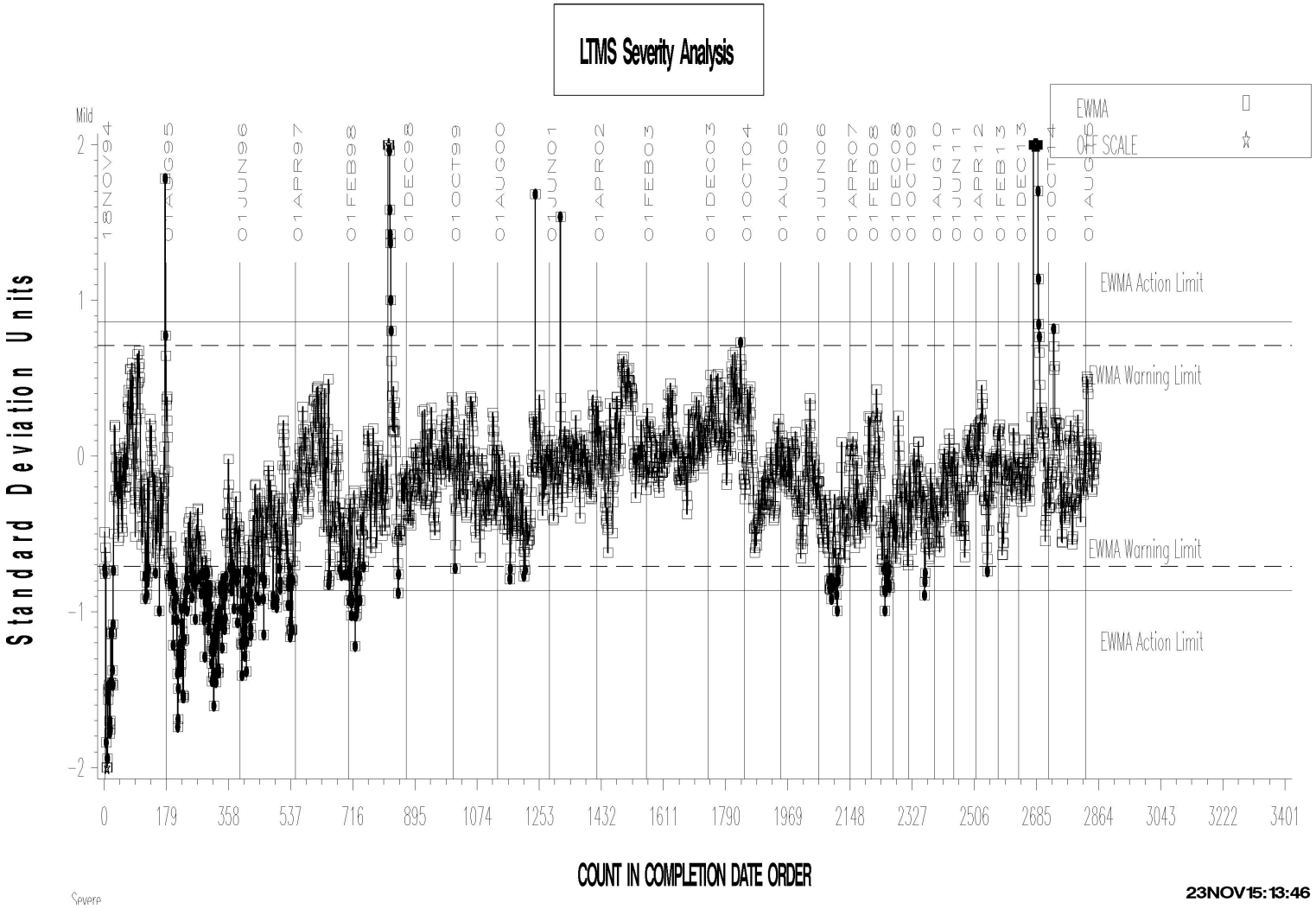

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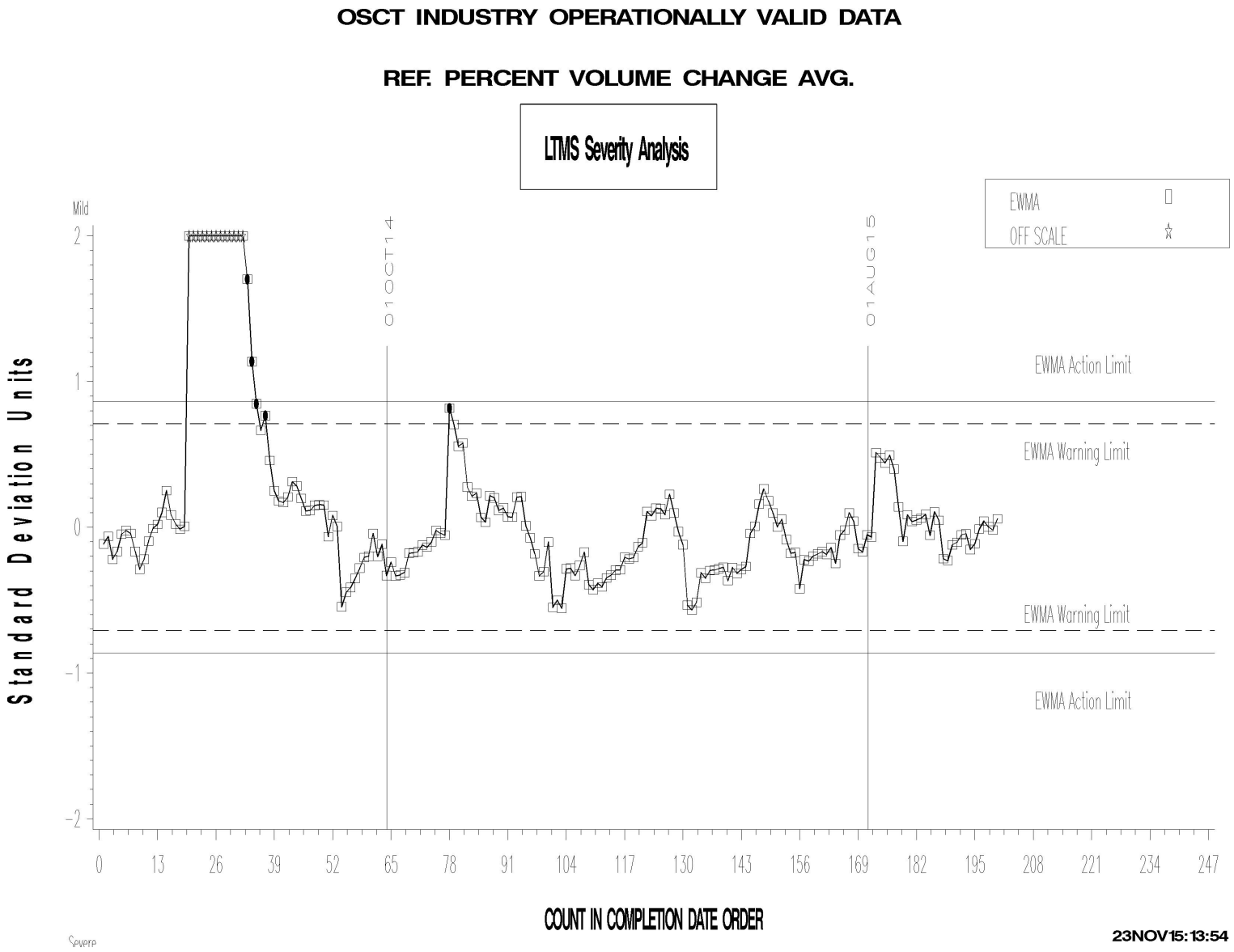
OSCT INDUSTRY OPERATIONALLY VALID DATA
REF. PERCENT VOLUME CHANGE AVG.
LTMS Severity Analysis
EWMA
OFF SCALE
Mild
Severe
01OCT14
01AUG15
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
2
1
0
-1
-2
0
13
26
39
52
65
78
91
104
117
130
143
156
169
182
195
208
221
234
247
COUNT IN COMPLETION DATE ORDER
23NOV15:13:54

OSCT (D5662)

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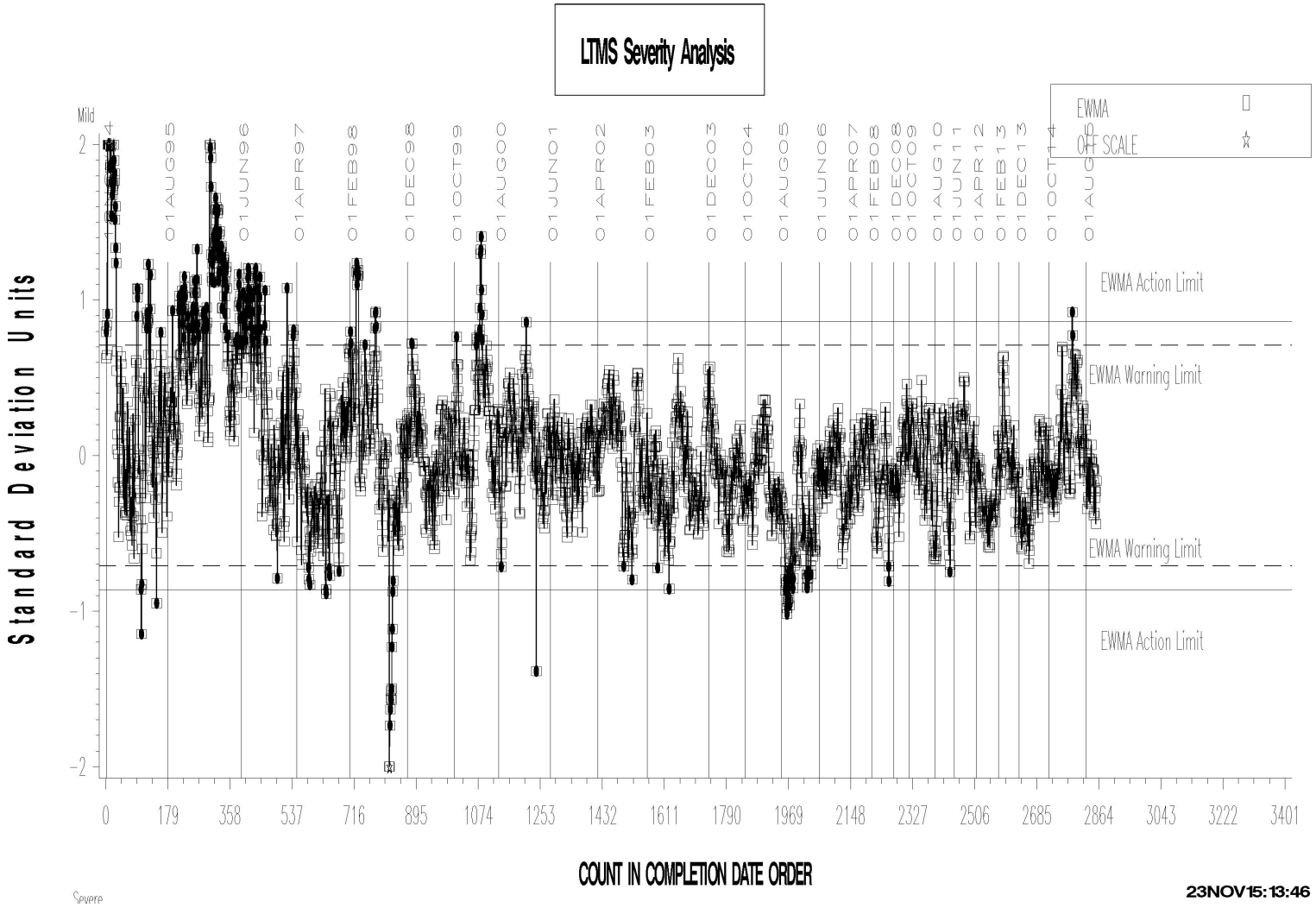

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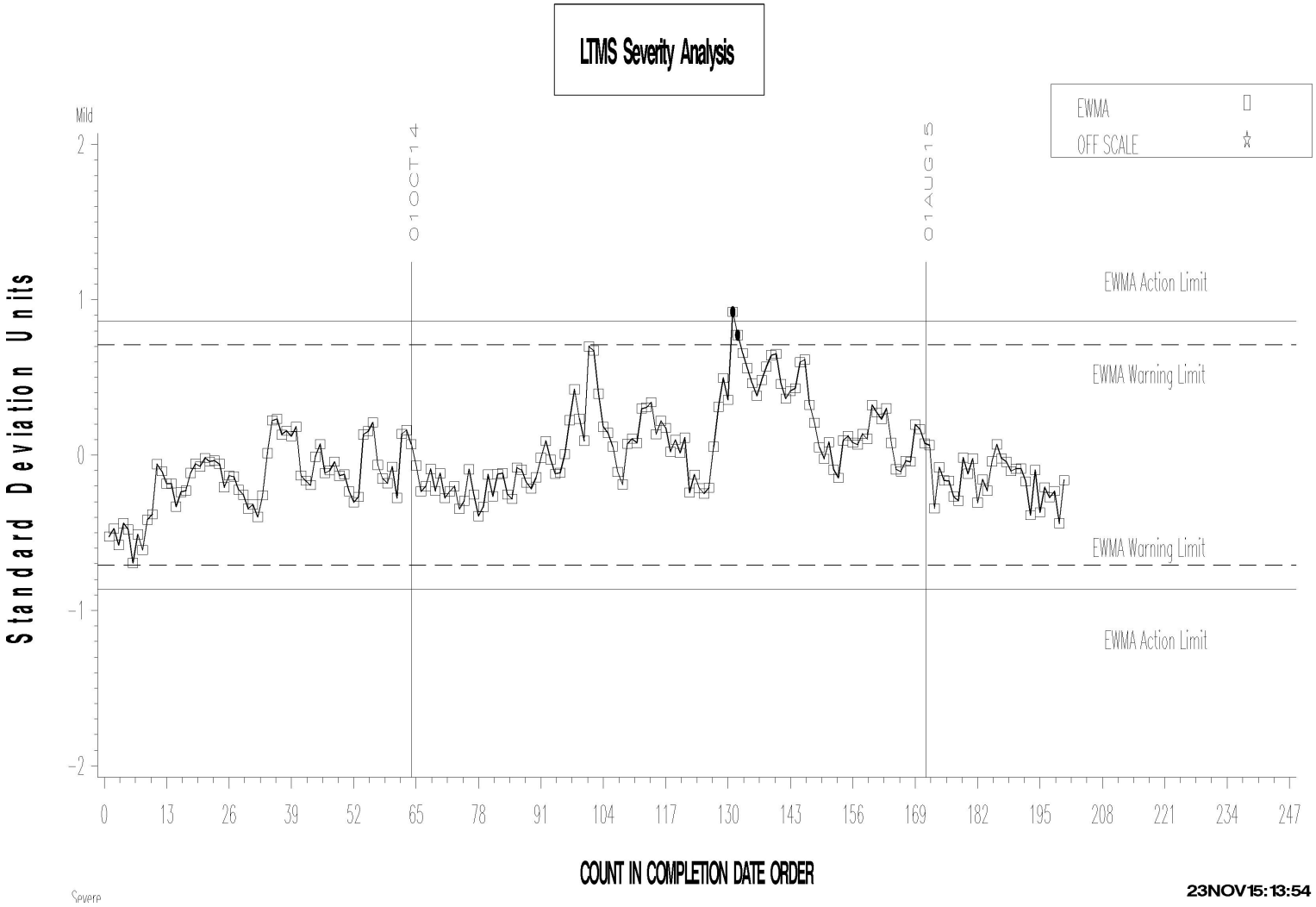

OSCT (D5662)

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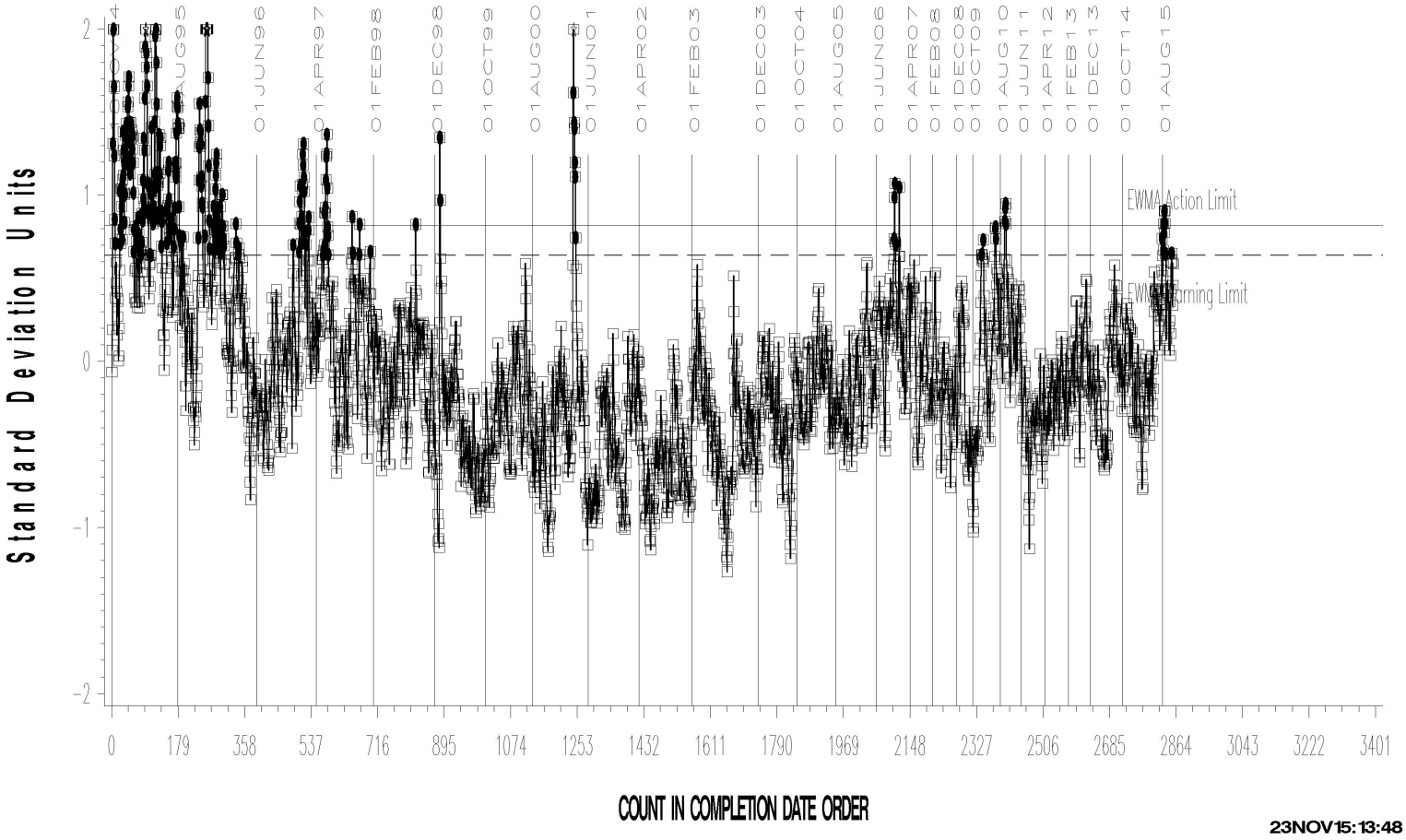
REF. ELONGATION CHANGE AVG.

LTMS Precision Analysis



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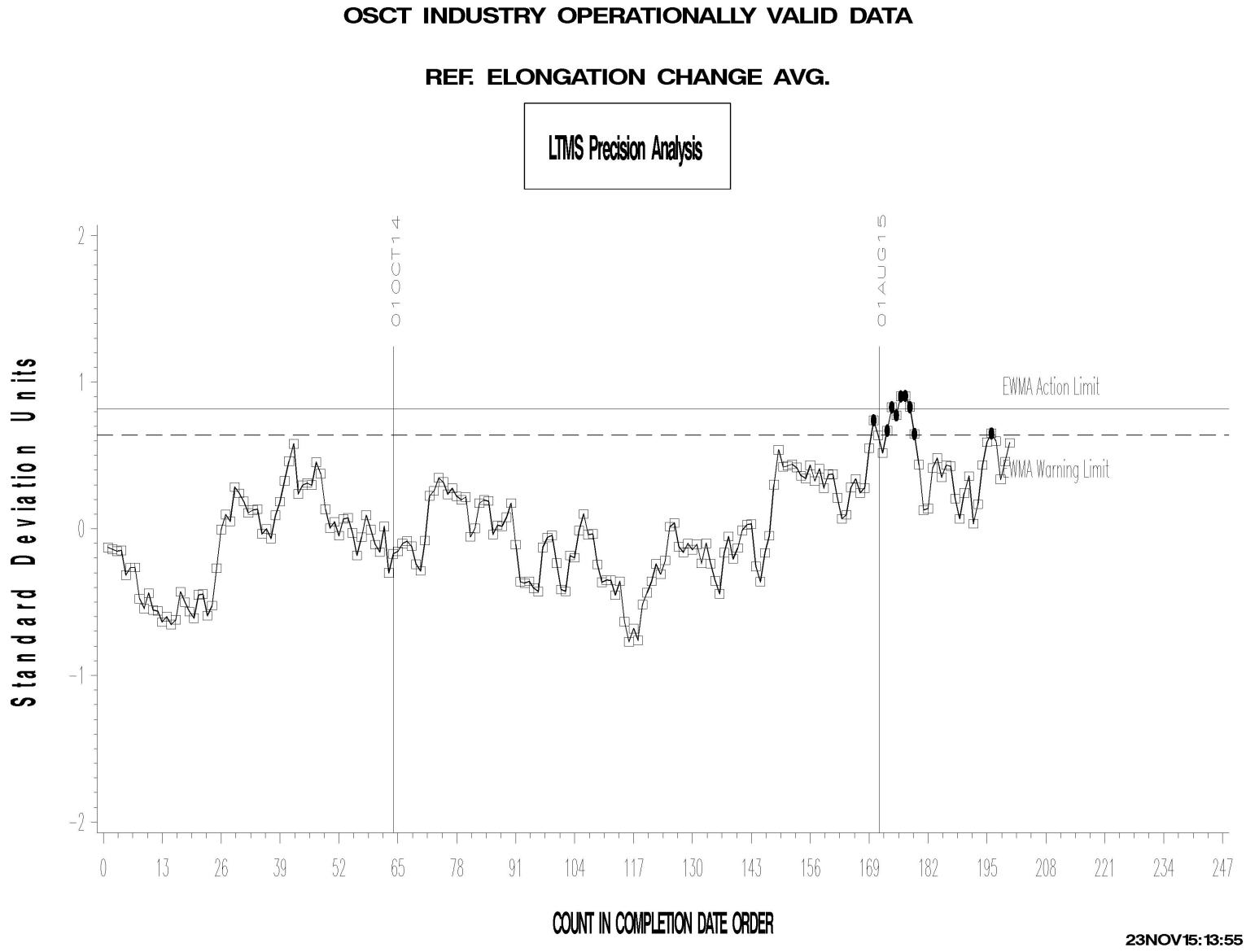
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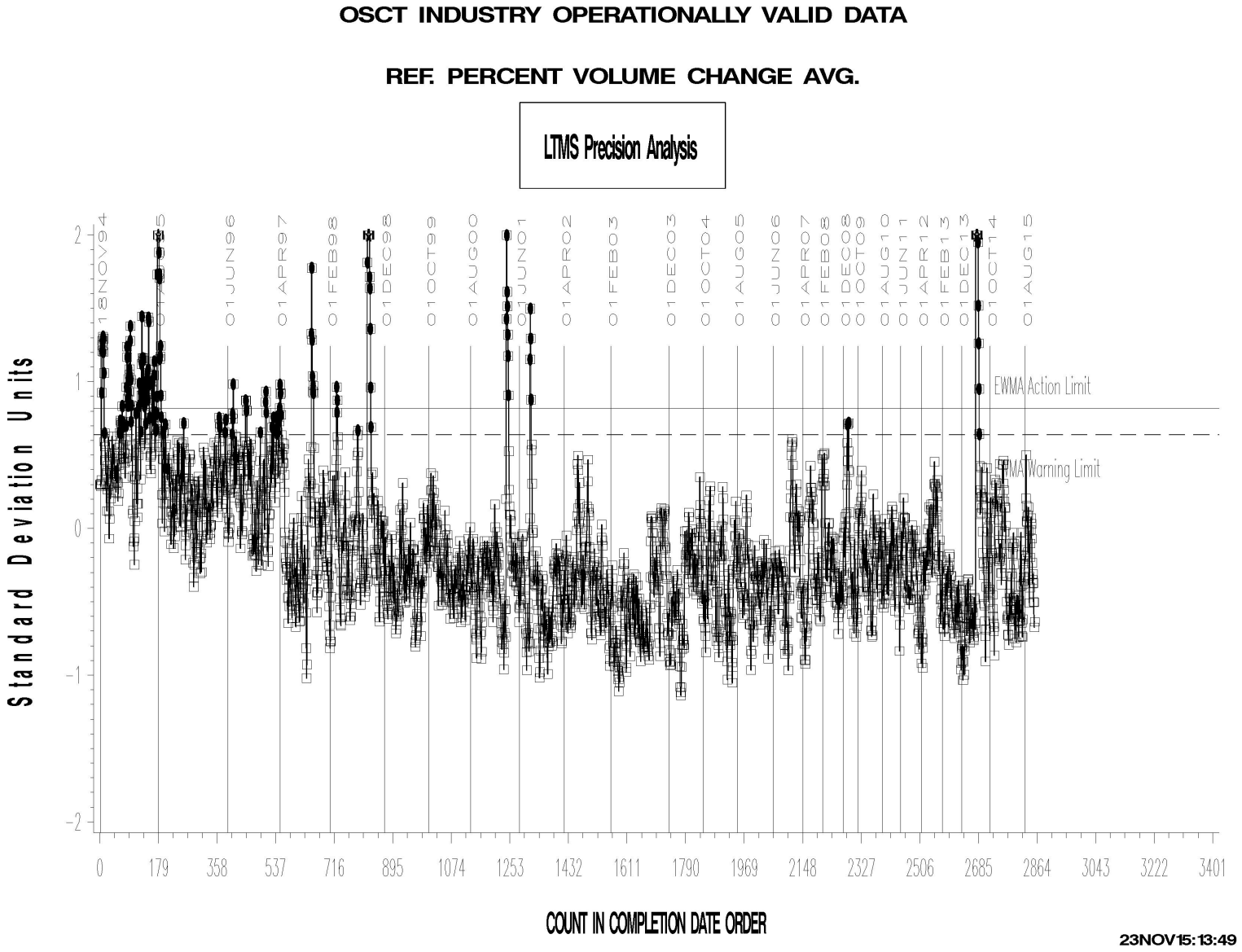
REF. ELONGATION CHANGE AVG.
LTMS Precision Analysis
01OCT14
01AUG15
EWMA Action Limit
EWMA Warning Limit
Standard Deviation Units
2
1
0
-1
-2
0
13
26
39
52
65
78
91
104
117
130
143
156
169
182
195
208
221
234
247
COUNT IN COMPLETION DATE ORDER
23NOV15:13:55

OSCT (D5662)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REF. PERCENT VOLUME CHANGE AVG.
LTMS Precision Analysis
Standard Deviation Units
2
1
0
-1
-2
18NOV94
01JUN96
01APR97
01FEB98
01DEC98
01OCT99
01AUG00
01JUN01
01APR02
01FEB03
01DEC03
01OCT04
01AUG05
01JUN06
01APR07
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01DEC08
01OCT09
01AUG10
01JUN11
01APR12
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01DEC13
01OCT14
01AUG15
EWMA Action Limit
EWMA Warning Limit
0
179
358
537
716
895
1074
1253
1432
1611
1790
1969
2148
2327
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2685
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3222
3401
COUNT IN COMPLETION DATE ORDER
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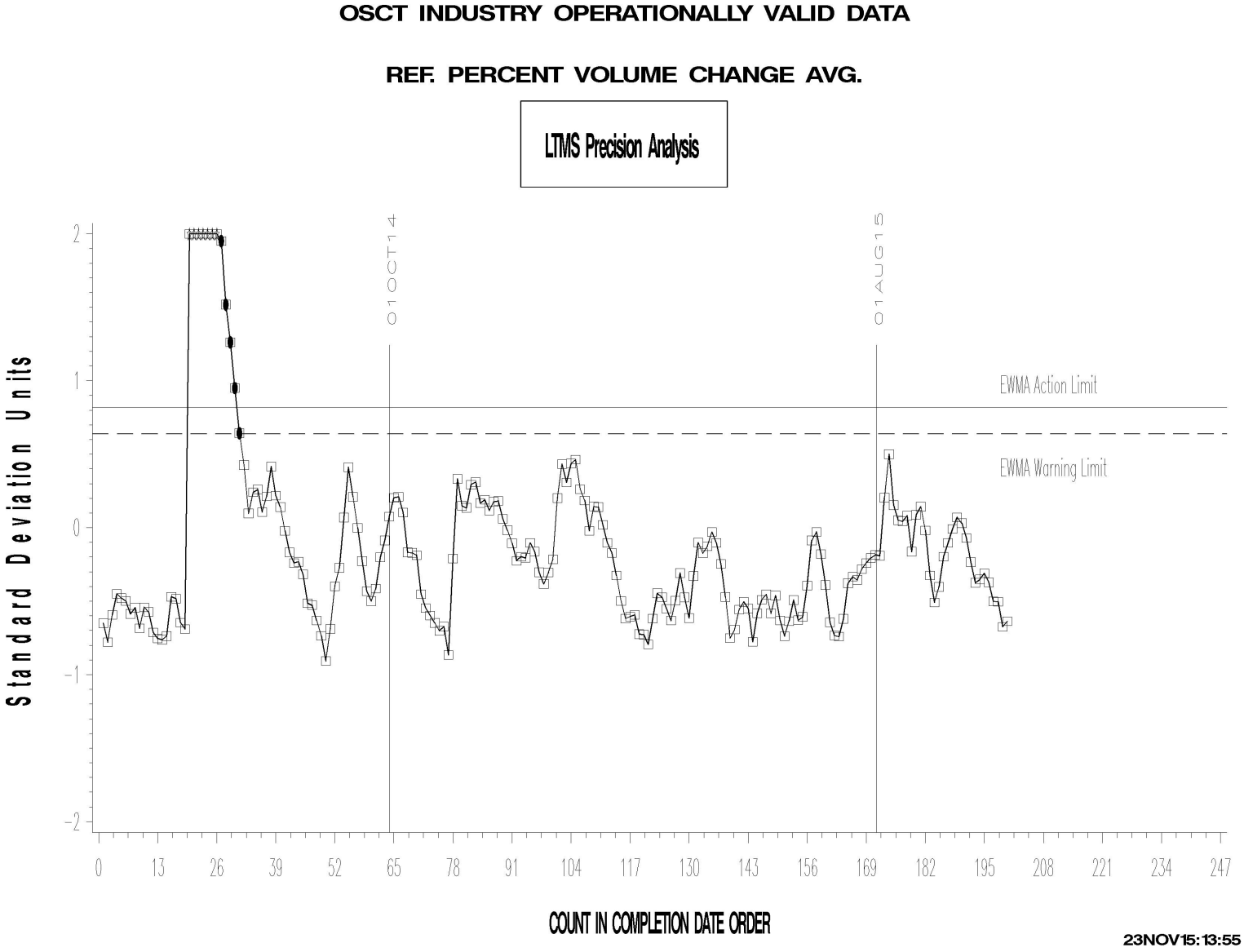
OSCT (D5662)


OSCT INDUSTRY OPERATIONALLY VALID DATA
REF. PERCENT VOLUME CHANGE AVG.
LTMS Precision Analysis
Standard Deviation Units
2
1
0
-1
-2
01OCT14
01AUG15
EWMA Action Limit
EWMA Warning Limit
0
13
26
39
52
65
78
91
104
117
130
143
156
169
182
195
208
221
234
247
COUNT IN COMPLETION DATE ORDER
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OSCT (D5662)

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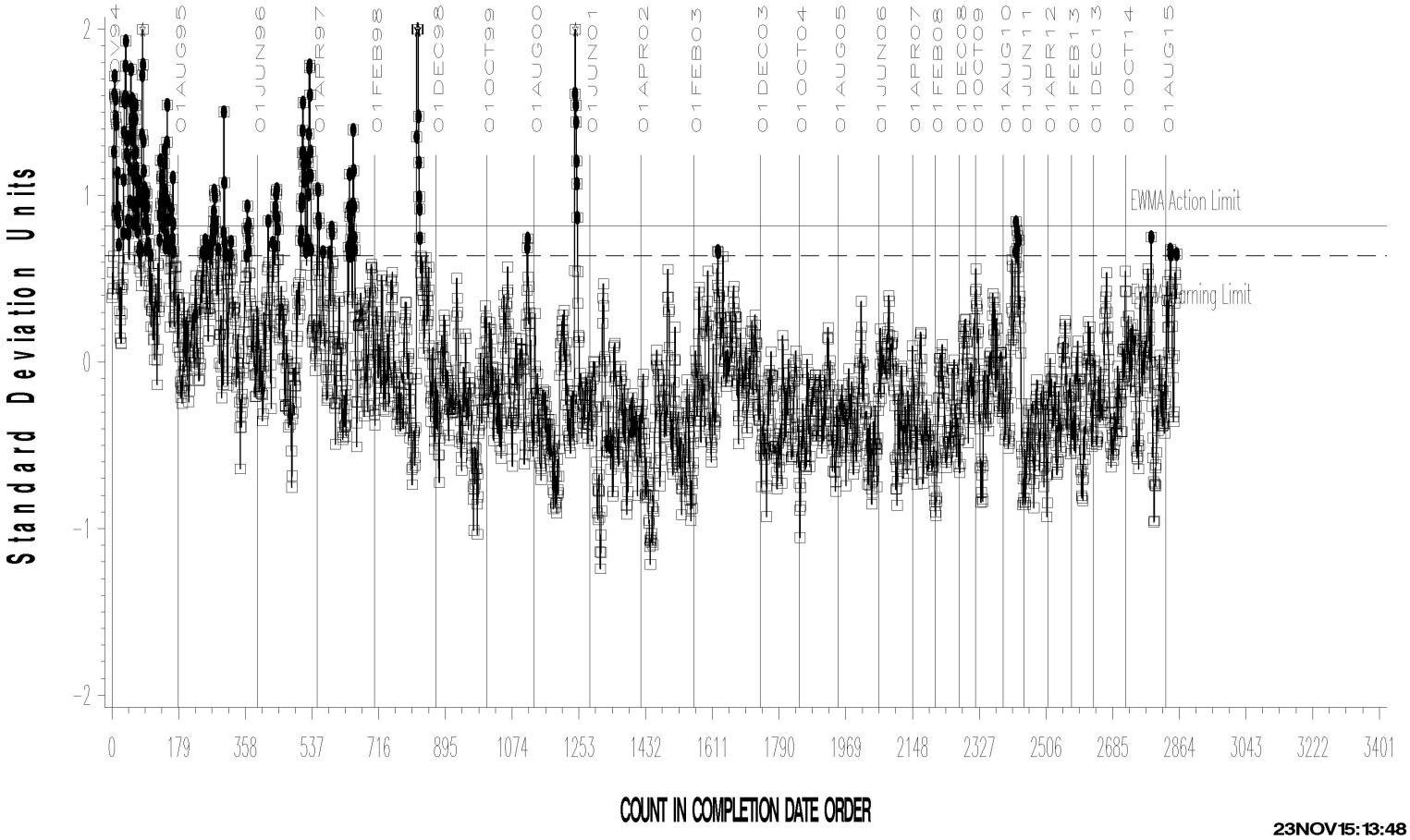
REF. SHORE A HARDNESS CHANGE AVG.

LTMS Precision Analysis



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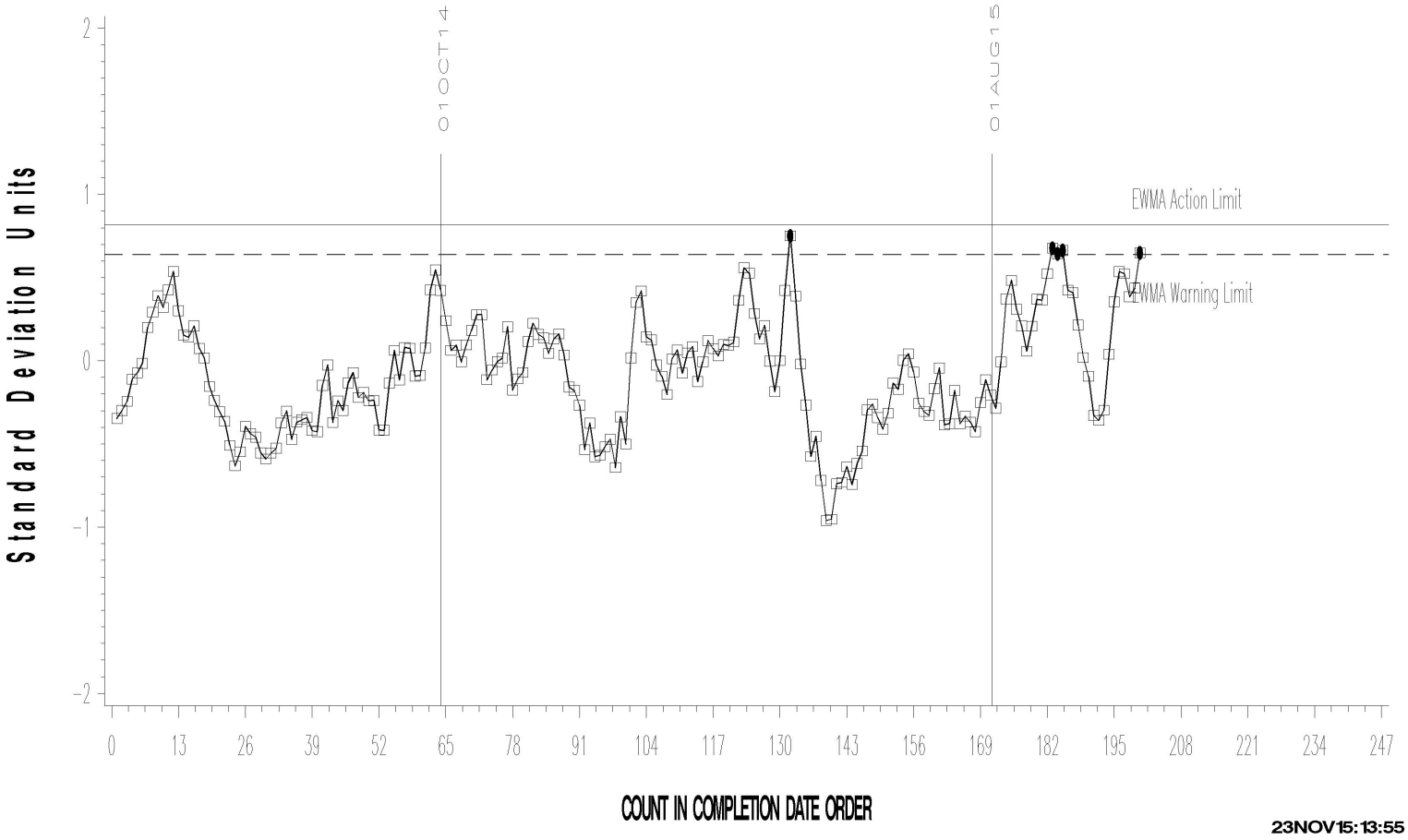

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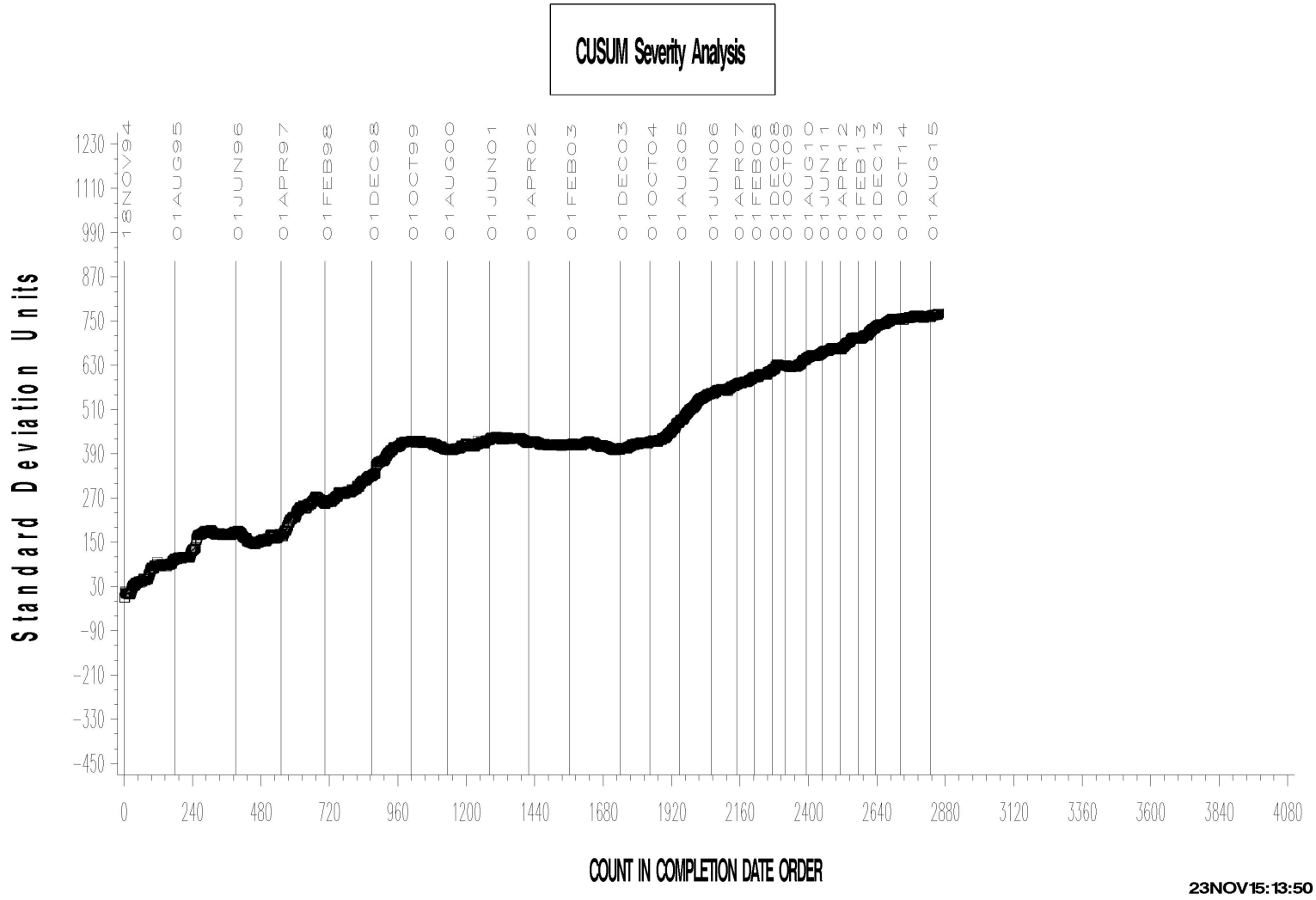

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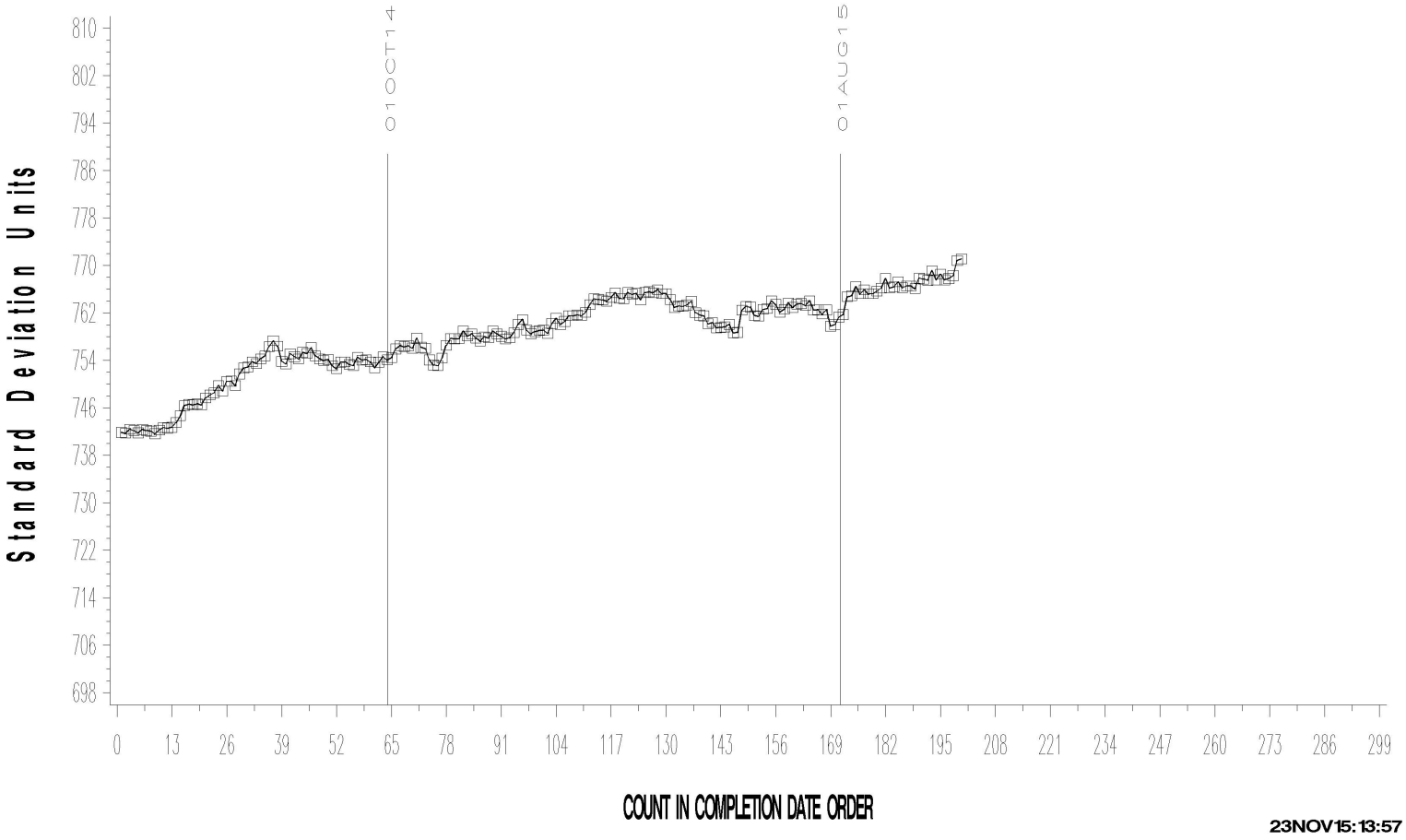
CUSUM Severity Analysis



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OSCT (D5662)

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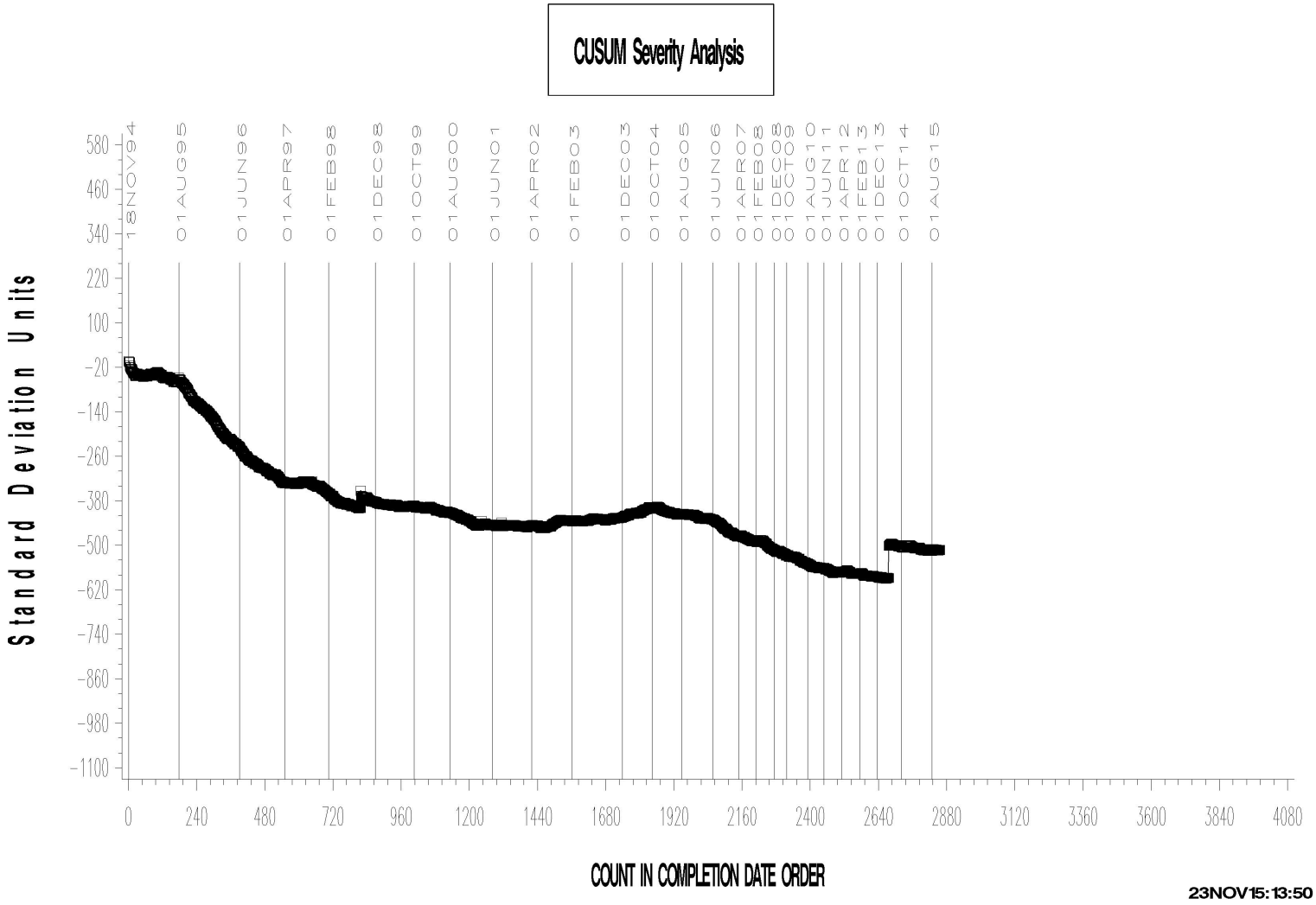

OSCT (D5662)

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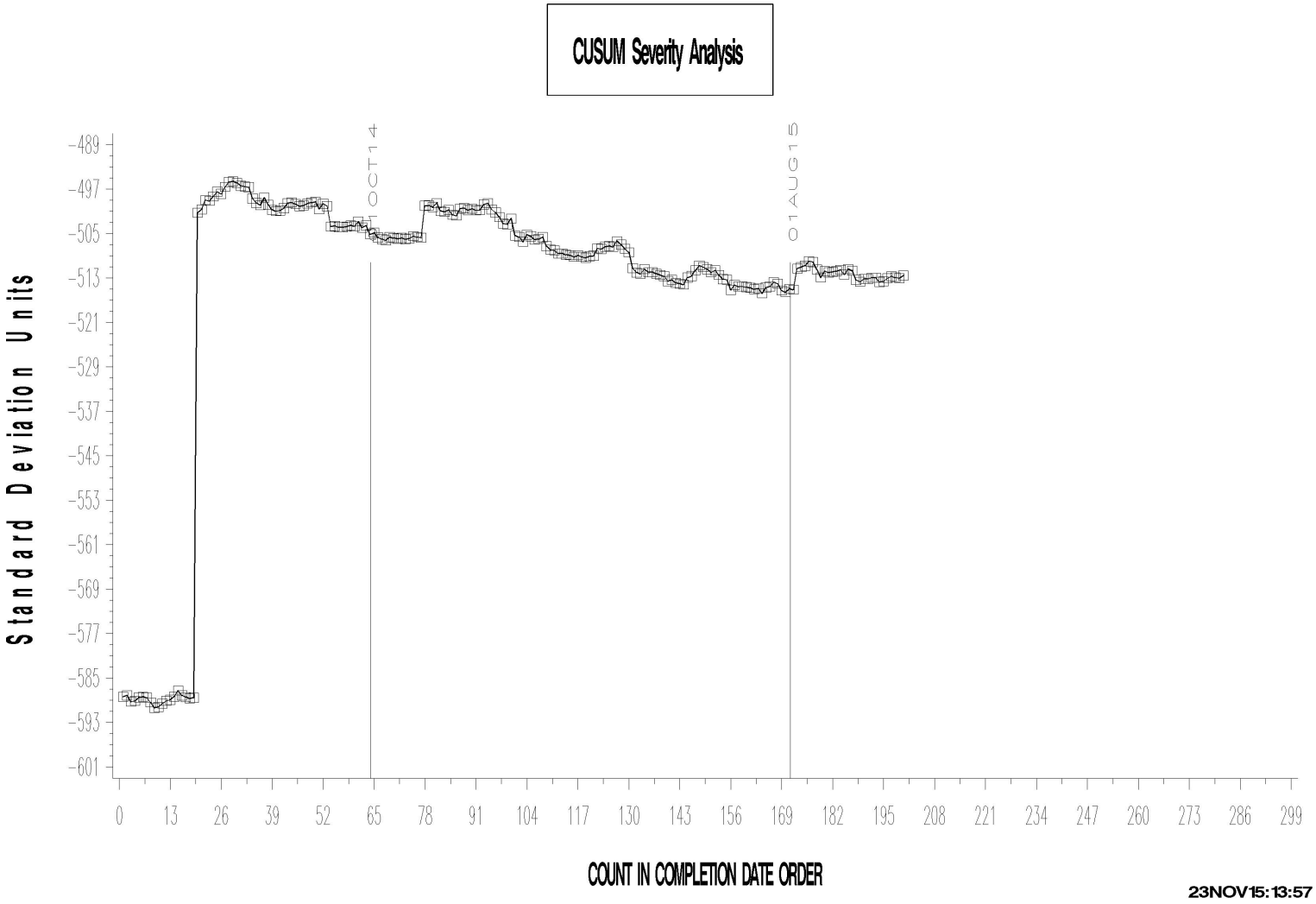

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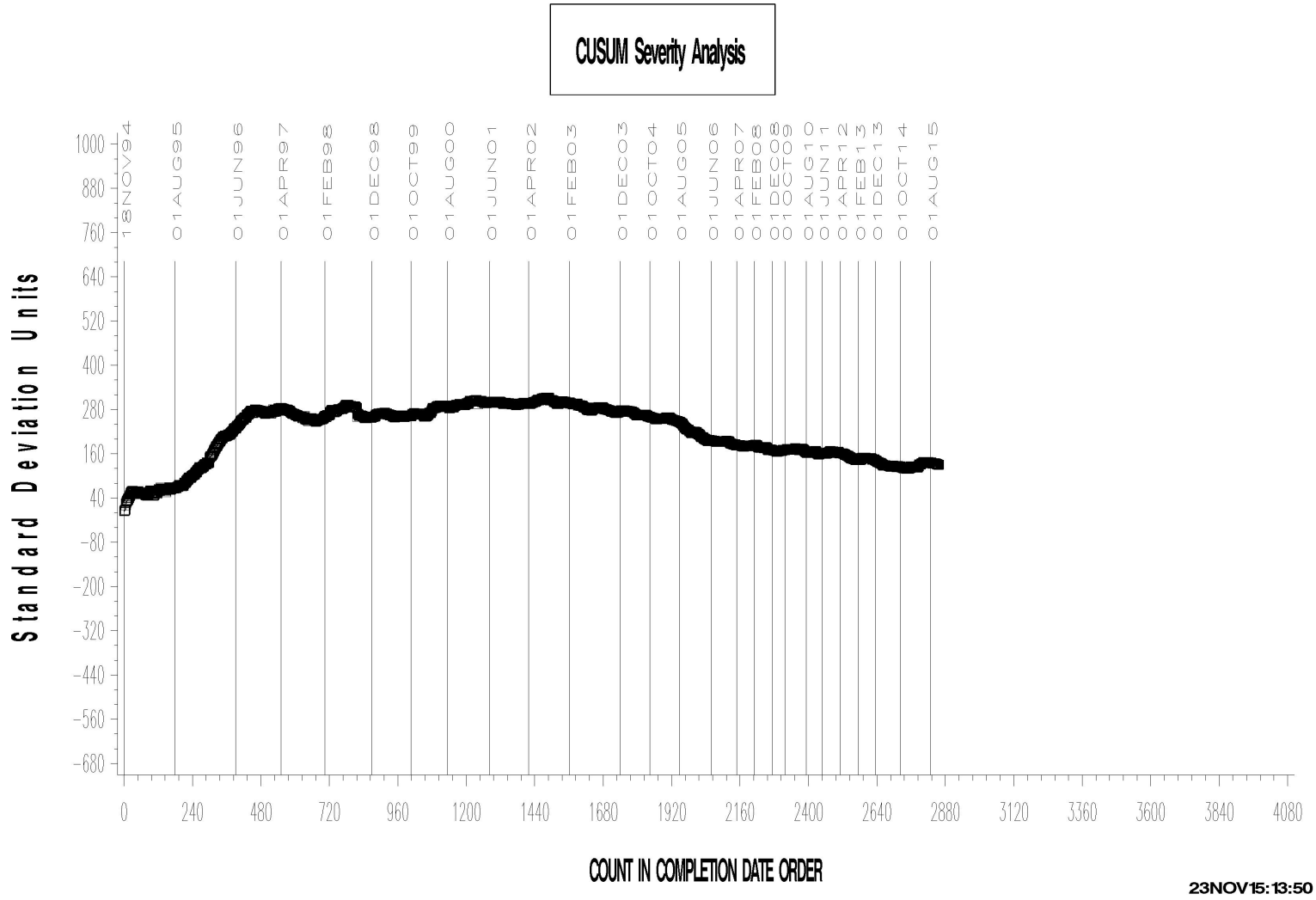

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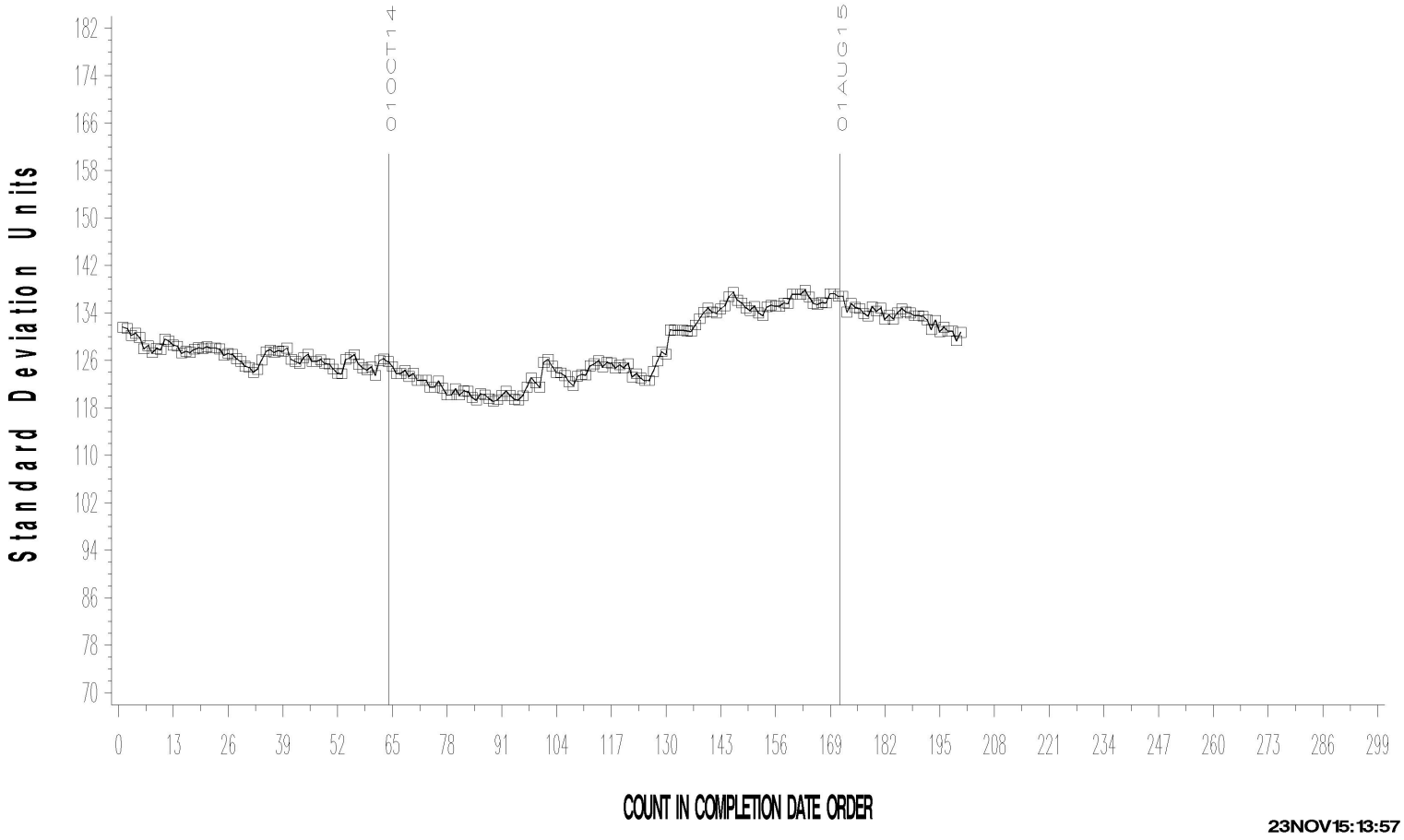
CUSUM Severity Analysis



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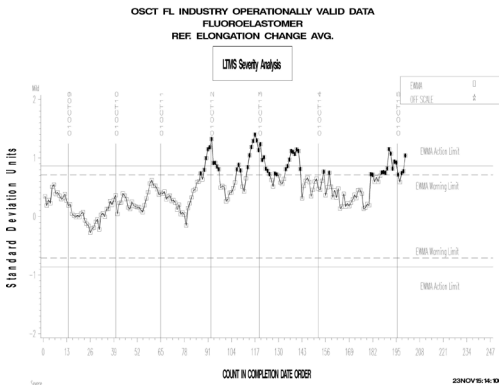
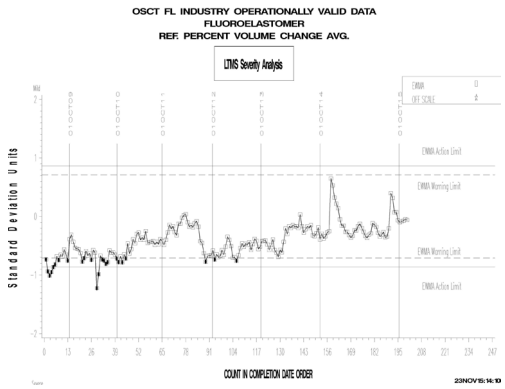
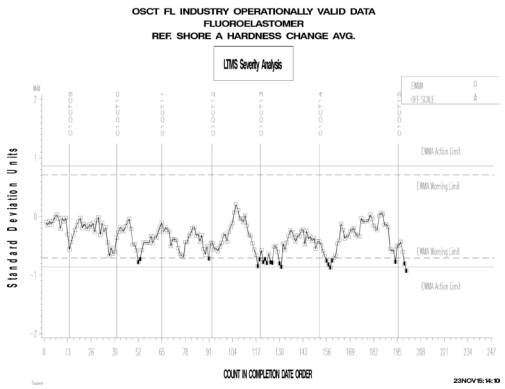
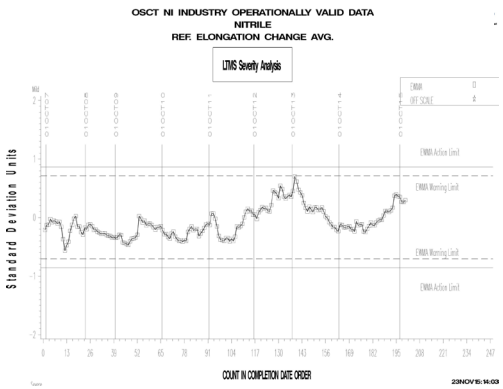
OSCT (D5662)

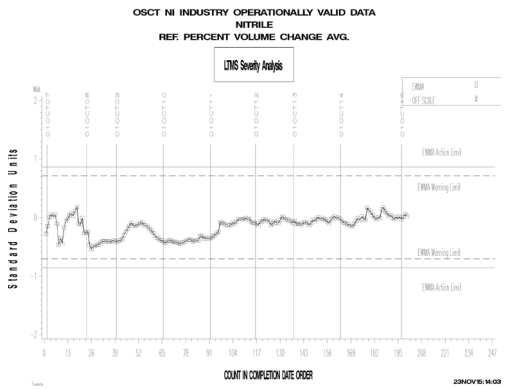
BY-ELASTOMER SEVERITY

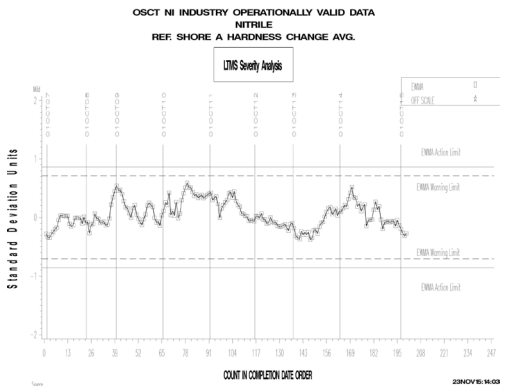


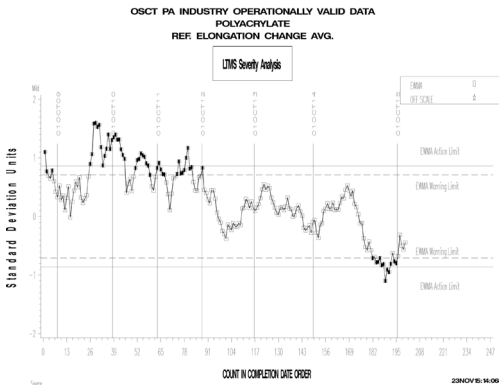


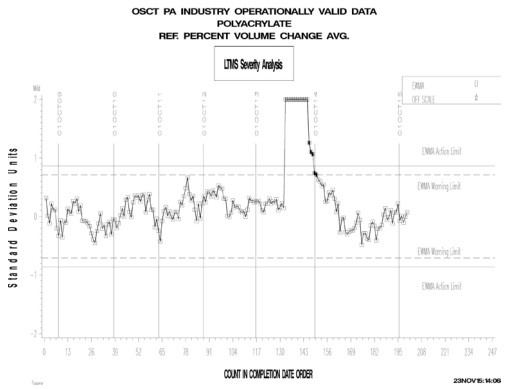


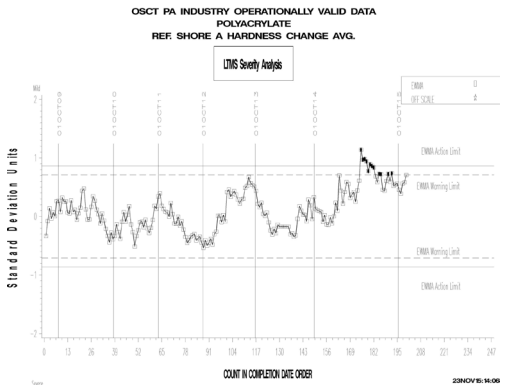












OSCT (D5662)

TIMELINE ADDITIONS

Effective Date	Information Letter	Event
20150923	15-1	Elastomer slab thickness specification change.

OSCT (D5662)

LAB VISITS

No OSCT lab visits were conducted during this period.

INFORMATION LETTERS

During the approval of elastomer batch PA353, it was discovered that the slab thickness specification used for screening by the elastomer distributor was not the same as listed in the test procedure. Letter 15-1 was issued 20150923 to revise D5662 to agree with the specification that has been used by the distributor since the inception of the test.

OSCT (D5662)

STATUS OF REFERENCE OIL SUPPLY

		@ TMC	
Oil	Cans @ Labs	Cans	Gallons
160-1	44	166	32.9
161-1	0	0	0.0
168	28	17	3.4
169	41	1103	209.2
170	24	238	47.2
Total	137	1524	292.8

Oil 161-1 has been depleted from TMC inventory. A reblend is not available. Oil 169 has been introduced as a replacement. Oil 168 is nearing depletion and is not re-blendable. The OSCT Surveillance Panel has identified oil 170 as a potential replacement oil and is currently working on introduction.