



## Test Monitoring Center

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

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

MEMORANDUM: 19-050  
DATE: November 4, 2019  
TO: Don Bell, Chairman, OSCT Surveillance Panel  
FROM: Dylan Beck *Dylan Beck*  
SUBJECT: OSCT Reference oil testing from April 1, 2019 through September 30, 2019

Attached is a summary of reference oil testing activity this period.

DJB/djb/mem19-050.djb.doc

cc: Frank Farber  
Jeff Clark

OSCT Surveillance Panel

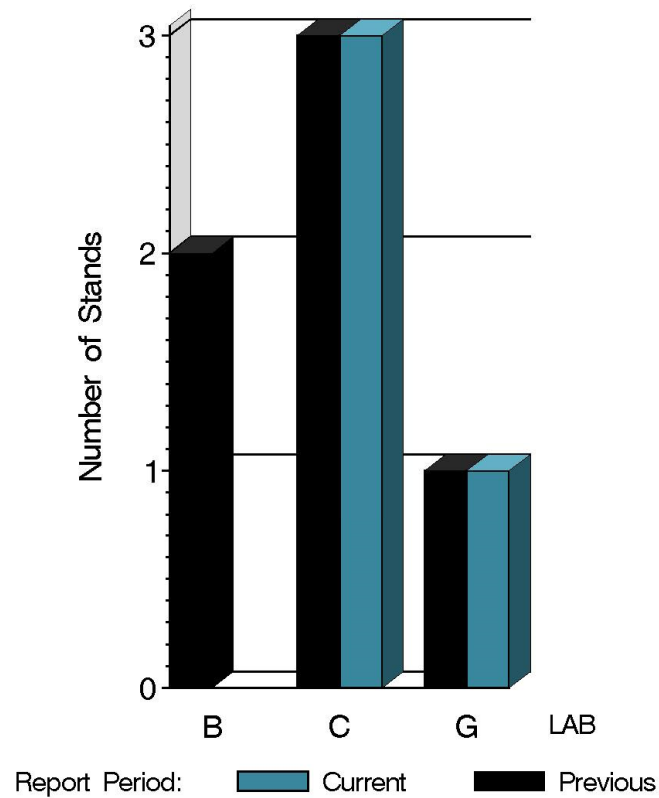
<http://www.astmtmc.cmu.edu/ftp/docs/gear/osct/semiannualreports/osct-10-2019.pdf>

Distribution: email

# OSCT (D5662)

	Reporting Data	Calibrated on 9-30-2019
Number of Labs	2	2
Number of Stands	4	4

BY-LAB STAND  
DISTRIBUTION



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\*Number of labs changed to two after lab B voluntarily dropped out of LTMS calibration on February 13, 2019

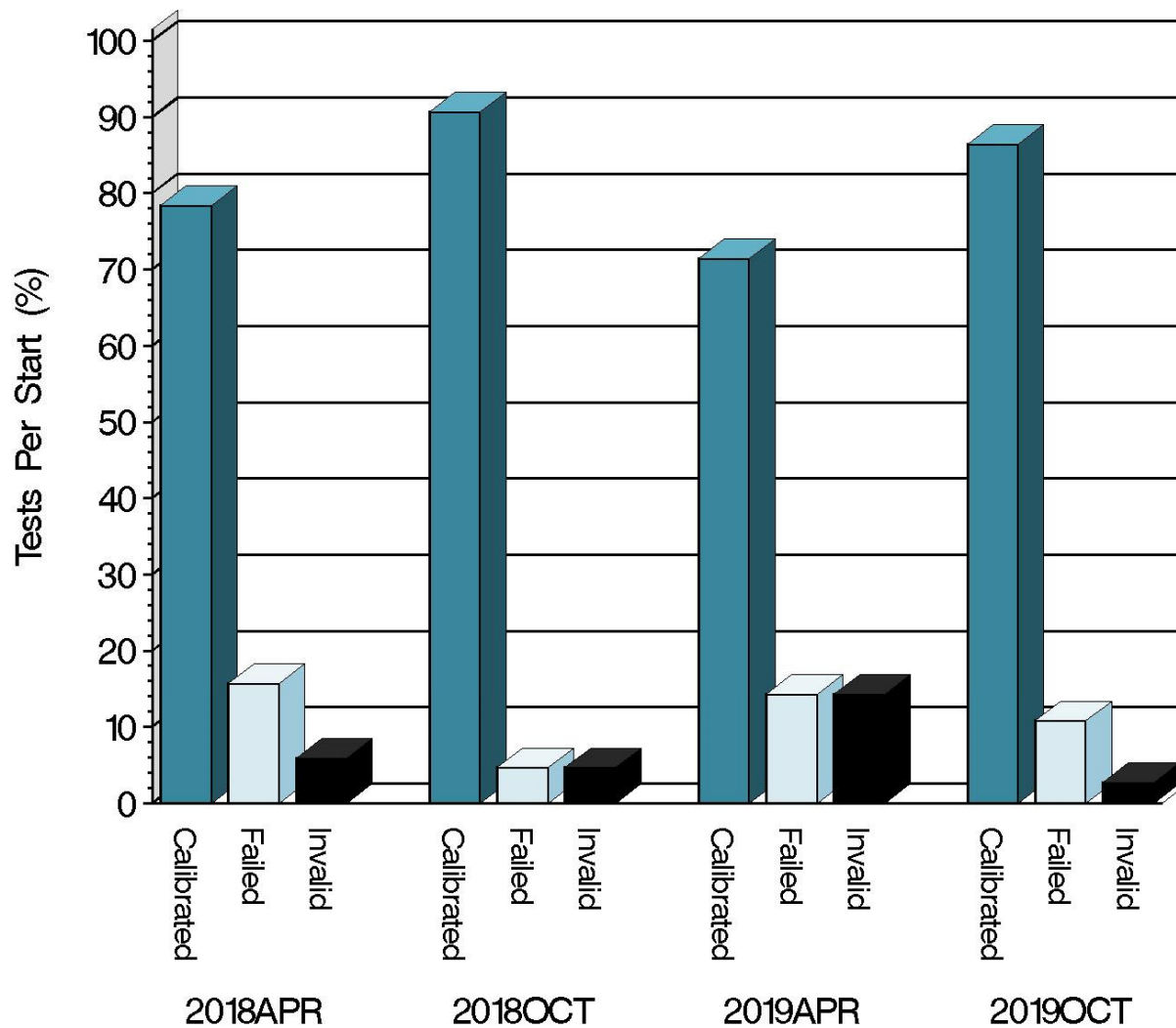
# OSCT (D5662)

## Test Distribution by Elastomer and Validity

					Totals	
					Last Period	This Period
		FL	NI	PA		
Accepted for calibration	AC	12	7	13	20	32
Rejected (low result)	OC	2	1	0	1	3
Rejected (high result)	OC	0	0	0	3	0
Rejected (high and low)	OC	1	0	0	0	1
Invalidated	RC	0	1	0	3	1
Aborted	XC	0	0	0	1	0
Elastomer approval run	NI	13	2	13	3	28
Unacceptable approval run	MI	11	0	3	11	14
Op. invalid approval run	LI	0	0	0	0	0
Total		39	11	29	48	79

# OSCT (D5662)

## CALIBRATION ATTEMPT SUMMARY



Resolution

Report Period

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## CAUSES FOR LOST TESTS

Lab	Cause	Elastomer			Loss Rate				Lost	Starts	%
		FL	NI	PA	LI	XI	RC	XC			
C	Expired Elastomer		●				●		1	23	4.3%
	Lost	0	1	0	0	0	1	0			
	Starts	39	11	29	79	79	79	79			
	%	0%	9.1%	0%	0.0%	0.0%	1.3%	0%			

# OSCT (D5662)

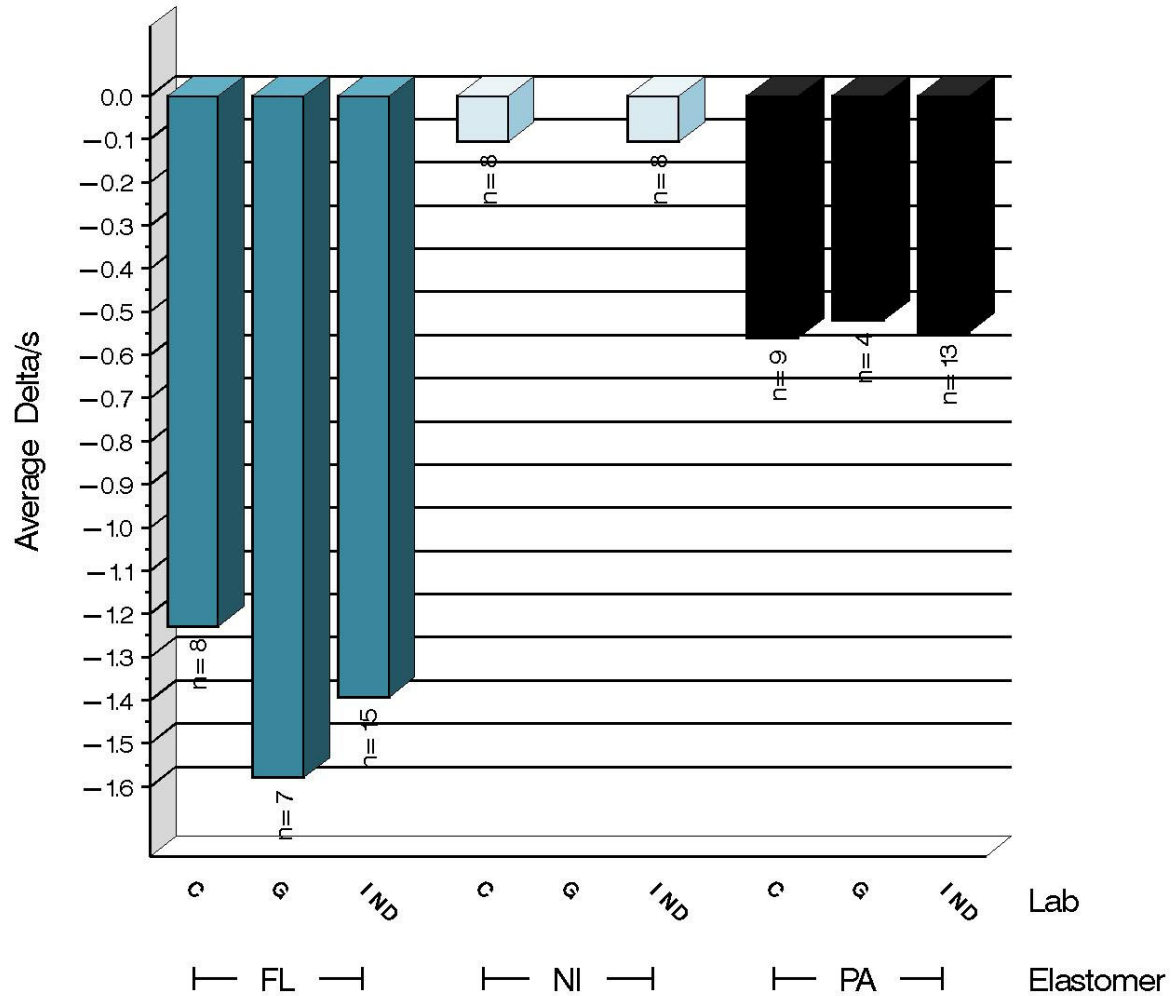
## Average $\Delta/s$ by Lab

Elastomer	Lab	n	PELA	PVCA	SAHA
FL	C	8	-1.229	-0.274	-0.098
	G	7	-1.580	1.949	0.028
	Industry	15	-1.392	0.763	-0.040
	Shift*	15	10.515	0.402	-0.055
NI	C	8	-0.106	0.632	-1.897
	Industry	8	-0.106	0.632	-1.897
	Shift*	8	-0.548	0.323	-2.260
PA	C	9	-0.562	0.063	0.300
	G	4	-0.520	-0.259	0.474
	Industry	13	-0.549	-0.036	0.353
	Shift*	13	-11.745	-0.069	0.896

\*computed using historic pooled s

# OSCT (D5662)

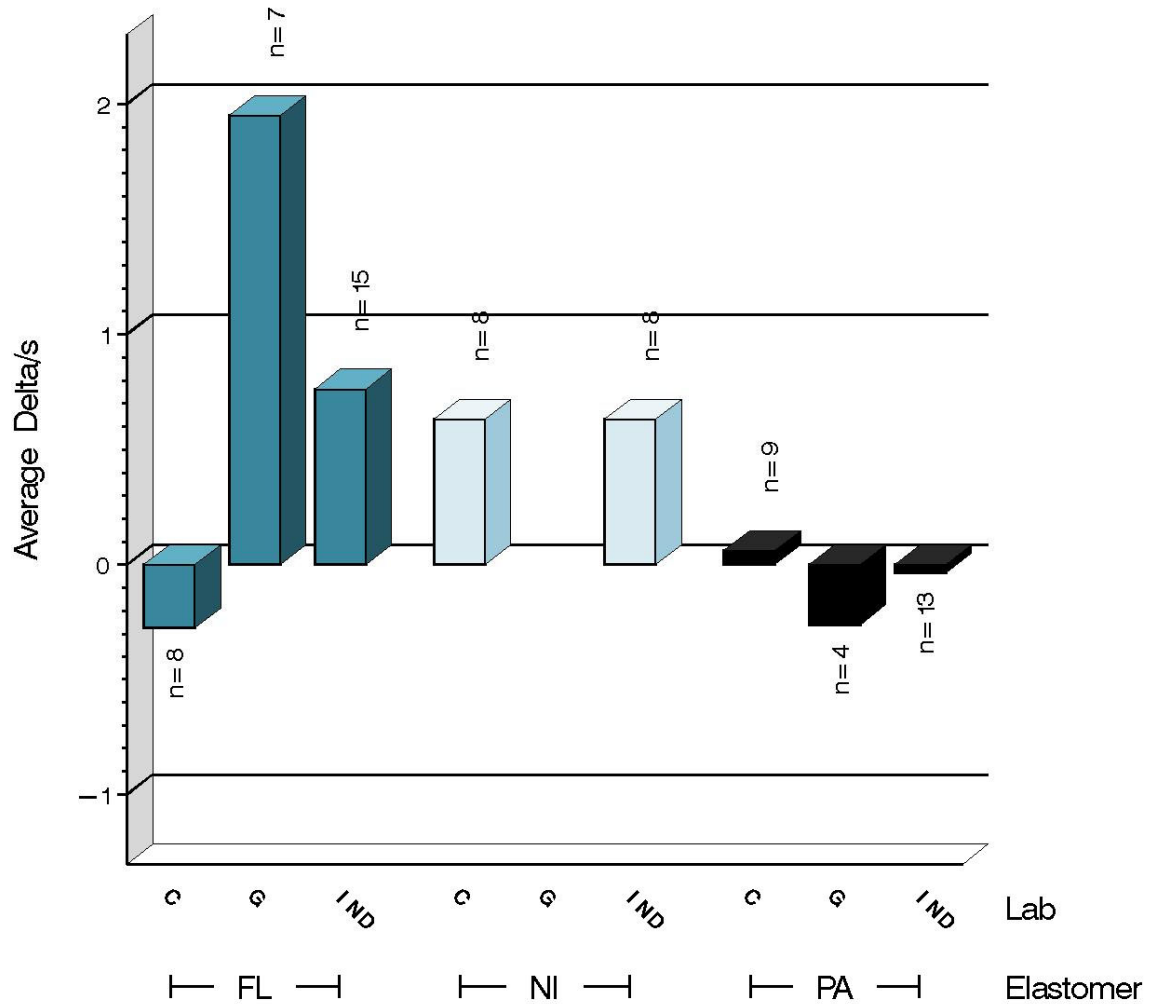
%ELONGATION SEVERITY  
DELTA/S BY LAB



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%VOLUME CHANGE SEVERITY  
DELTA/S BY LAB

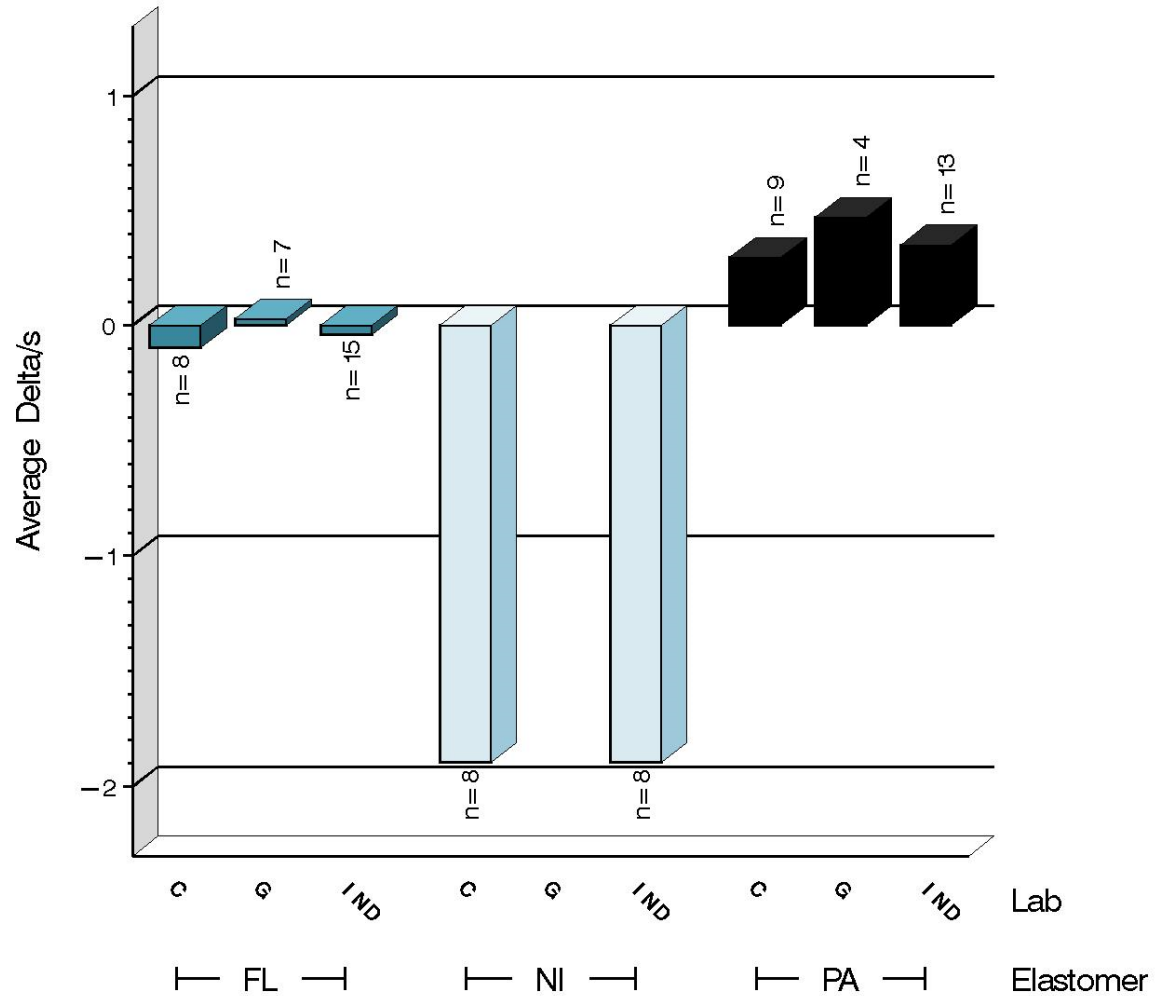


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# OSCT (D5662)

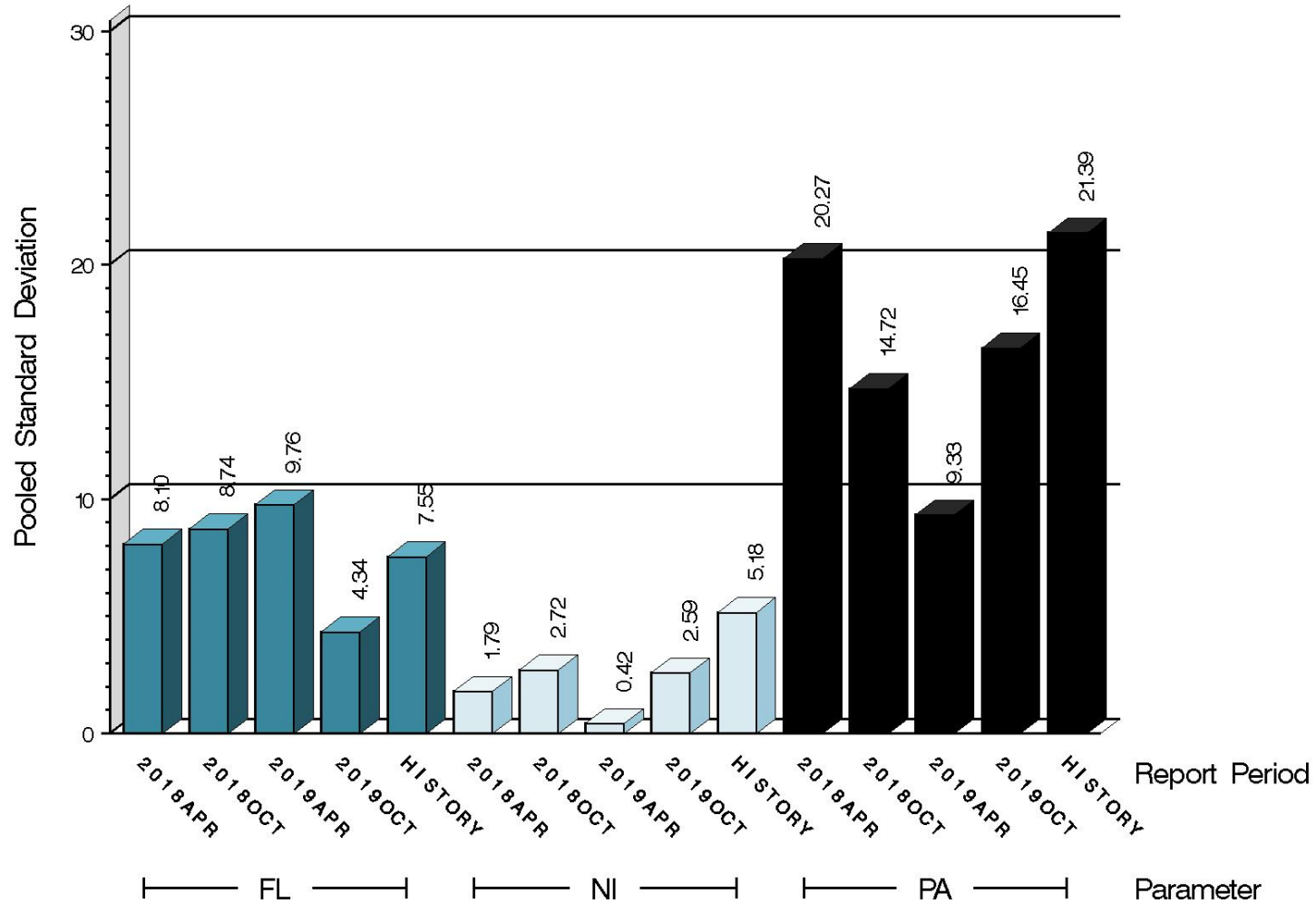
S.A. HARDNESS SEVERITY  
DELTA/S BY LAB



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# OSCT (D5662)

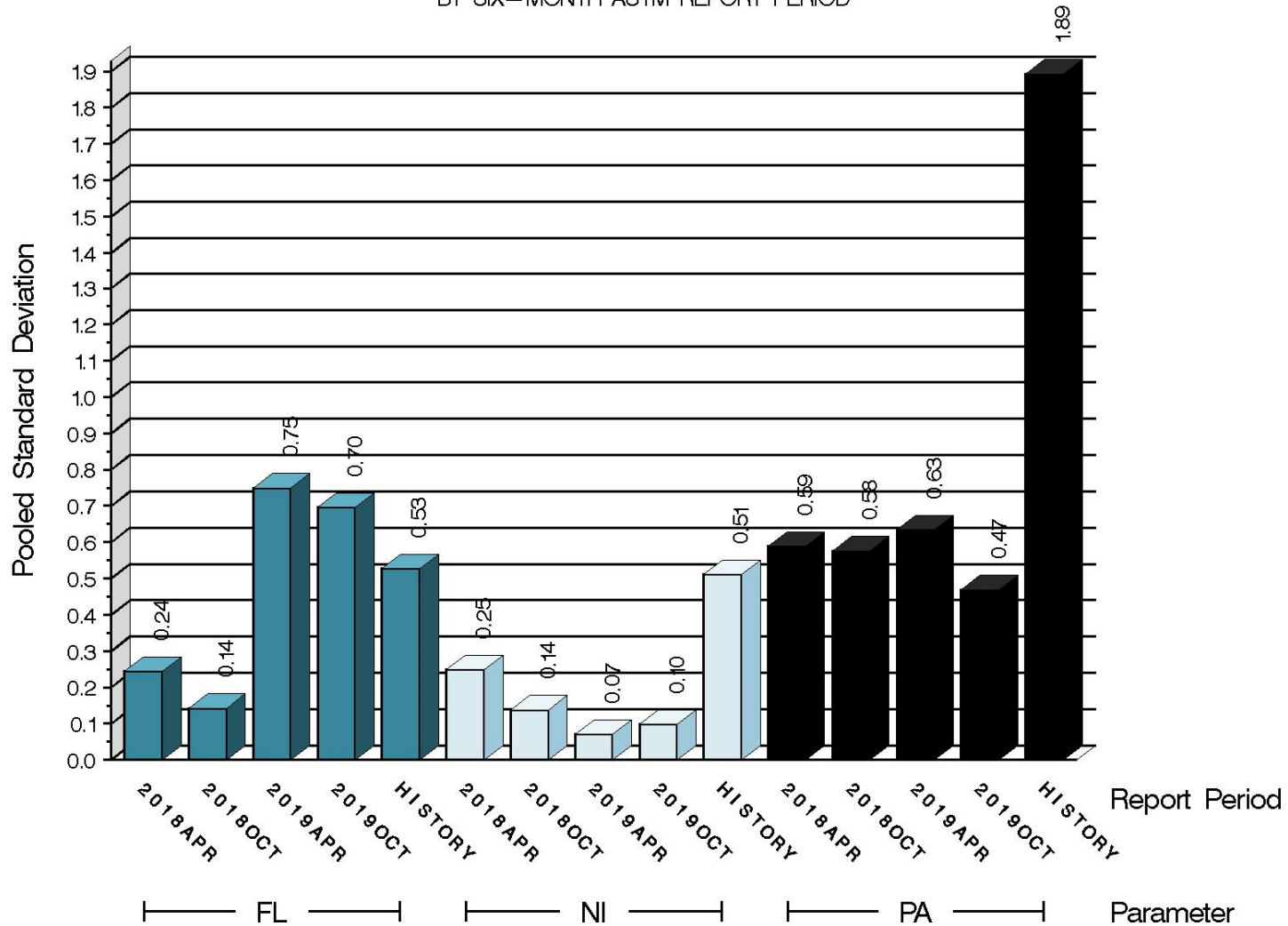
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POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



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# OSCT (D5662)

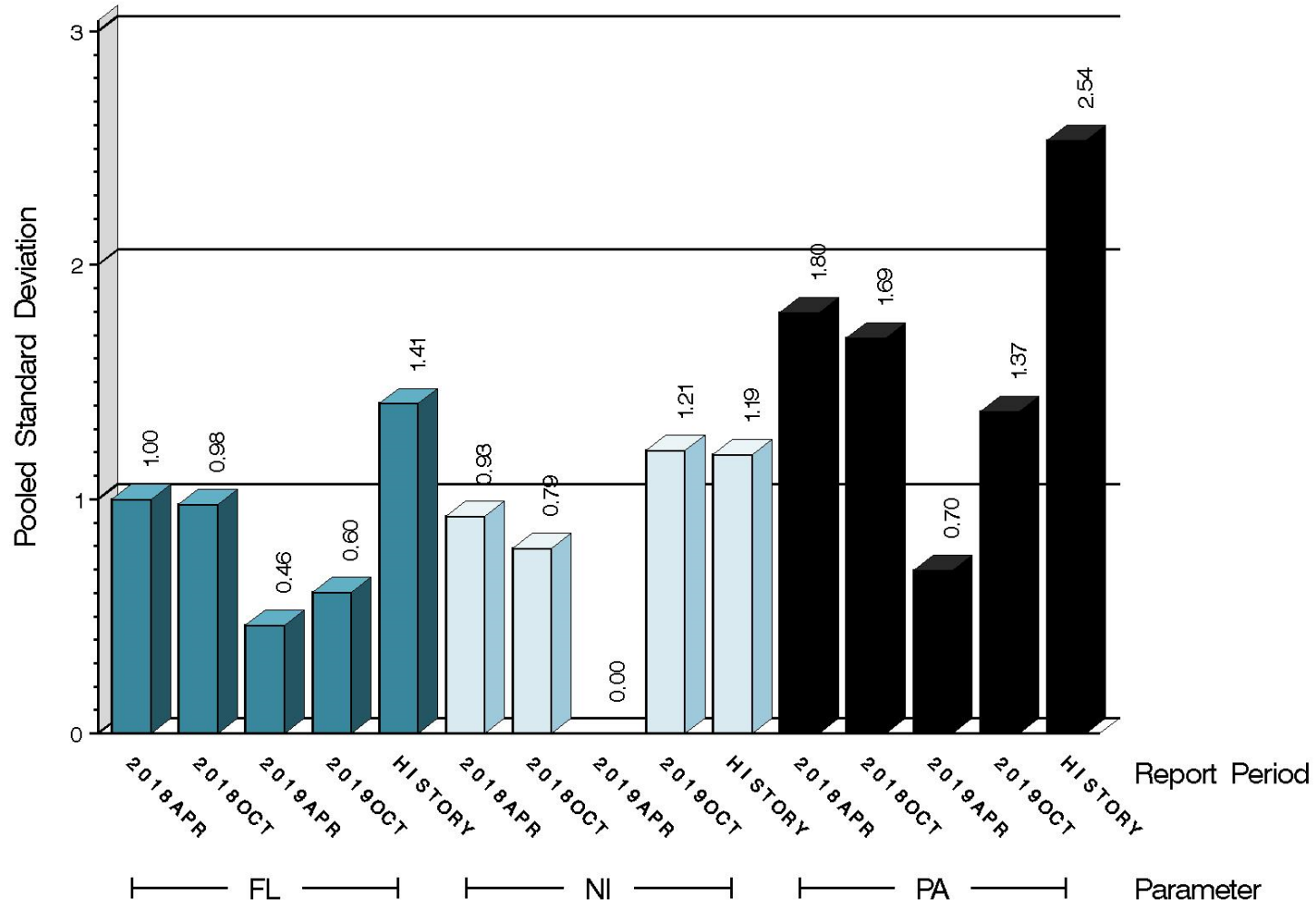
%VOLUME CHANGE PRECISION  
 POOLED STANDARD DEVIATION  
 BY SIX-MONTH ASTM REPORT PERIOD



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# OSCT (D5662)

S.A. HARDNESS PRECISION  
 POOLED STANDARD DEVIATION  
 BY SIX-MONTH ASTM REPORT PERIOD



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# OSCT (D5662)

## SUMMARY OF SEVERITY & PRECISION

### Severity

The combined-elastomer industry charts show that PELA exceeded the action limit during this period but is currently only exceeding the warning limit.

FL PELA and NI SAHA both ended the period exceeding the action limit.

### Precision

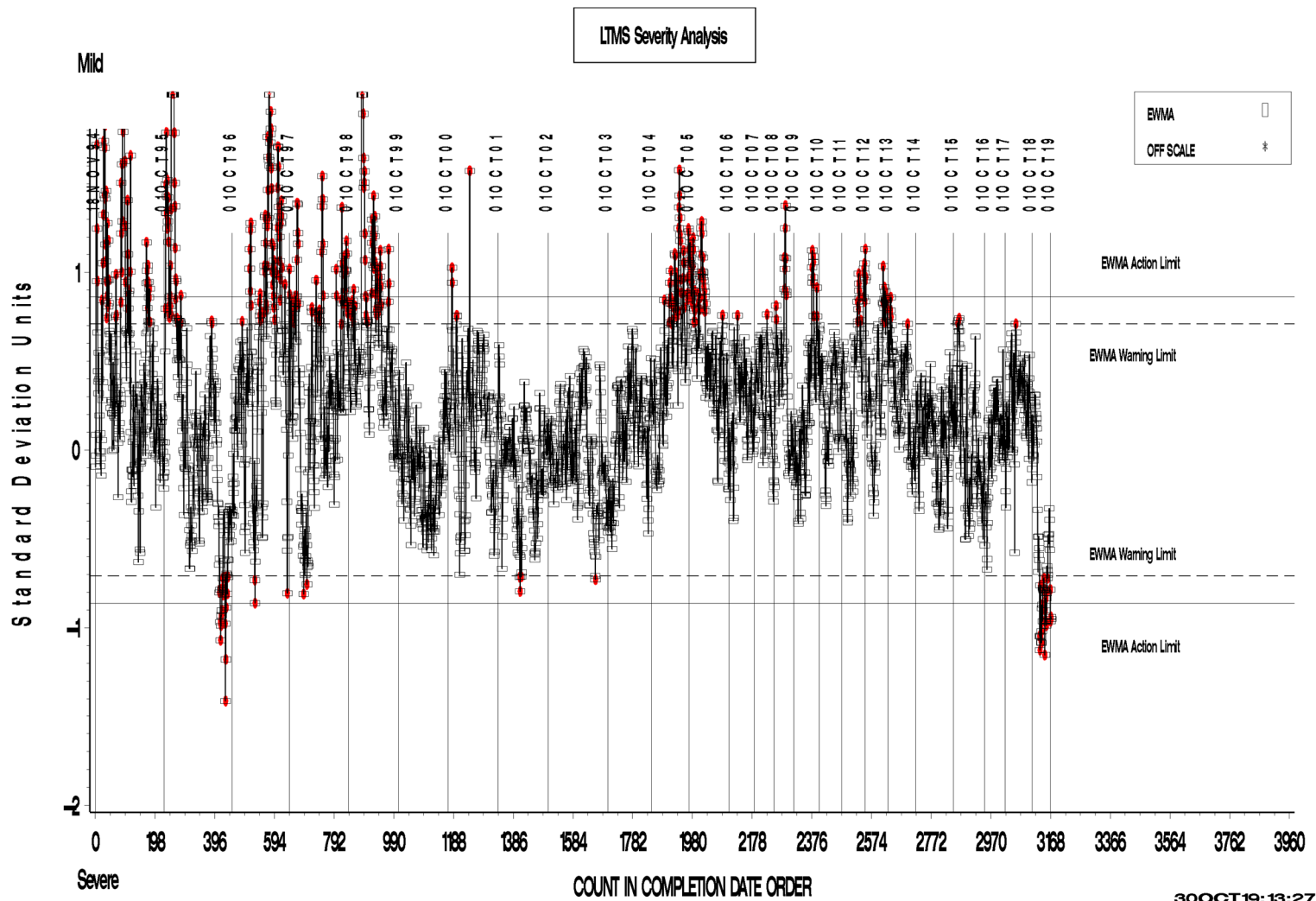
All parameters ended the period within the precision limits.

Industry control charts follow.

# OSCT (D5662)

OSCT INDUSTRY OPERATIONALLY VALID DATA

REF. ELONGATION CHANGE AVG.



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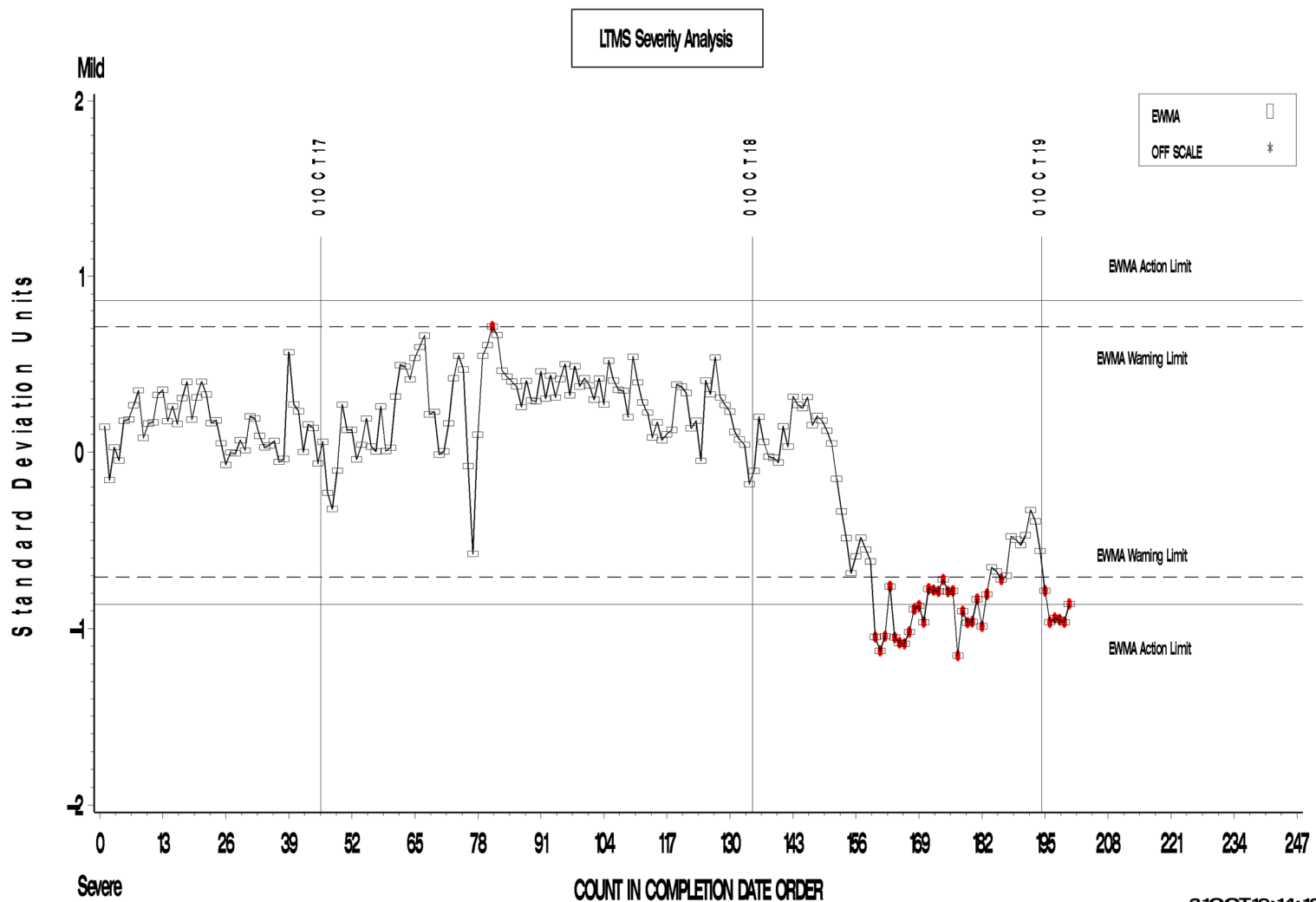
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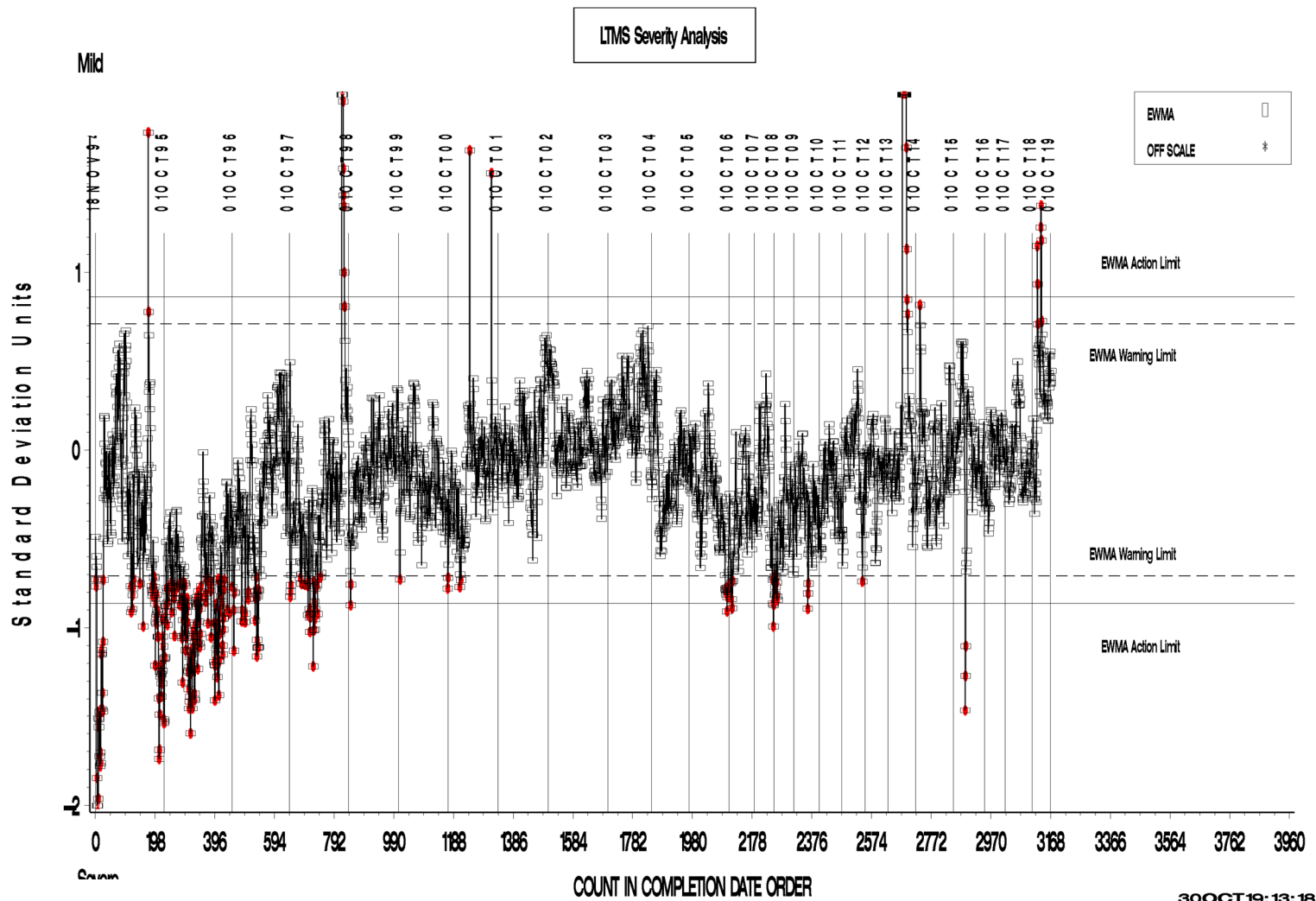
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REF. ELONGATION CHANGE AVG.



# OSCT (D5662)

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REF. PERCENT VOLUME CHANGE AVG.



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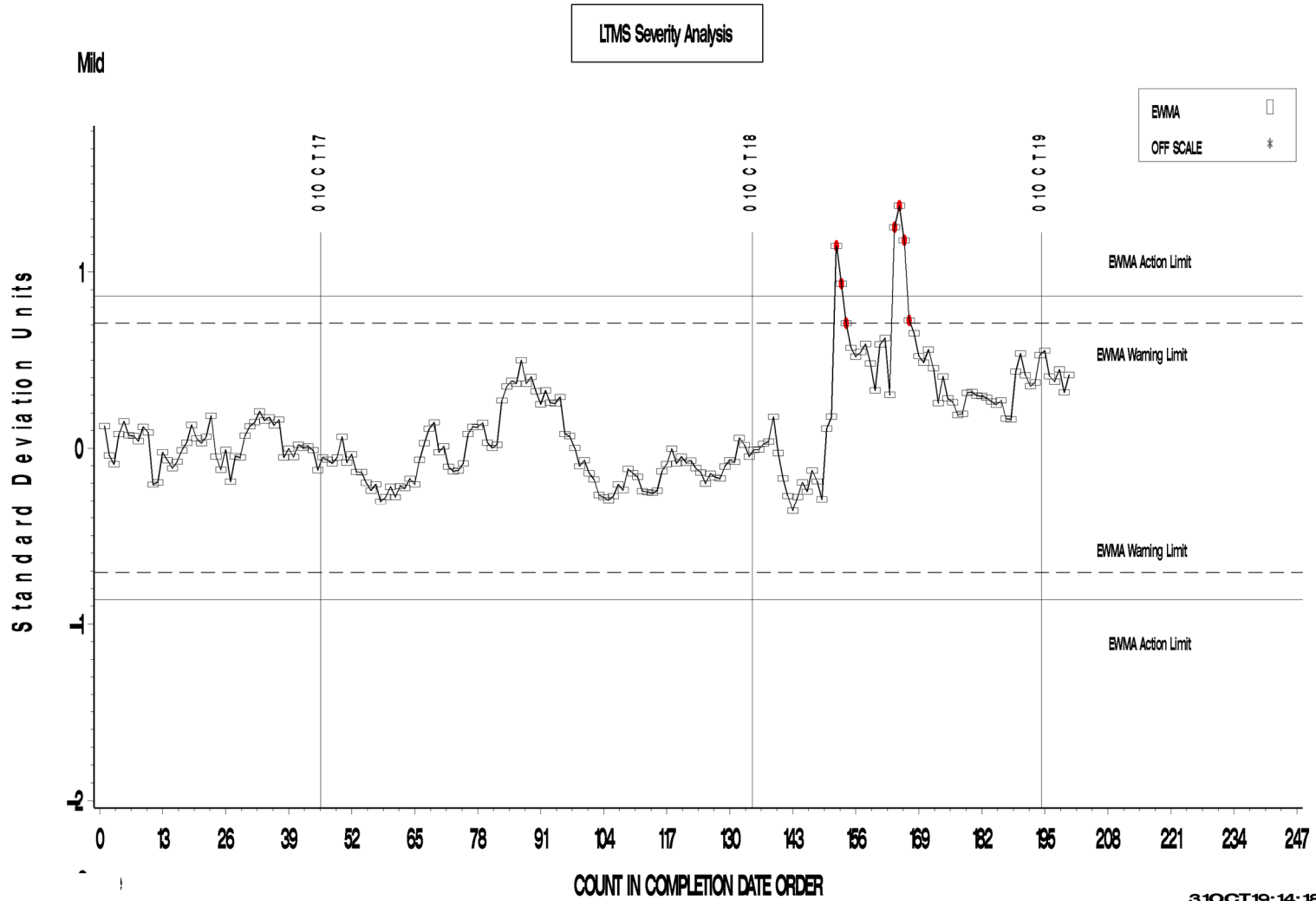


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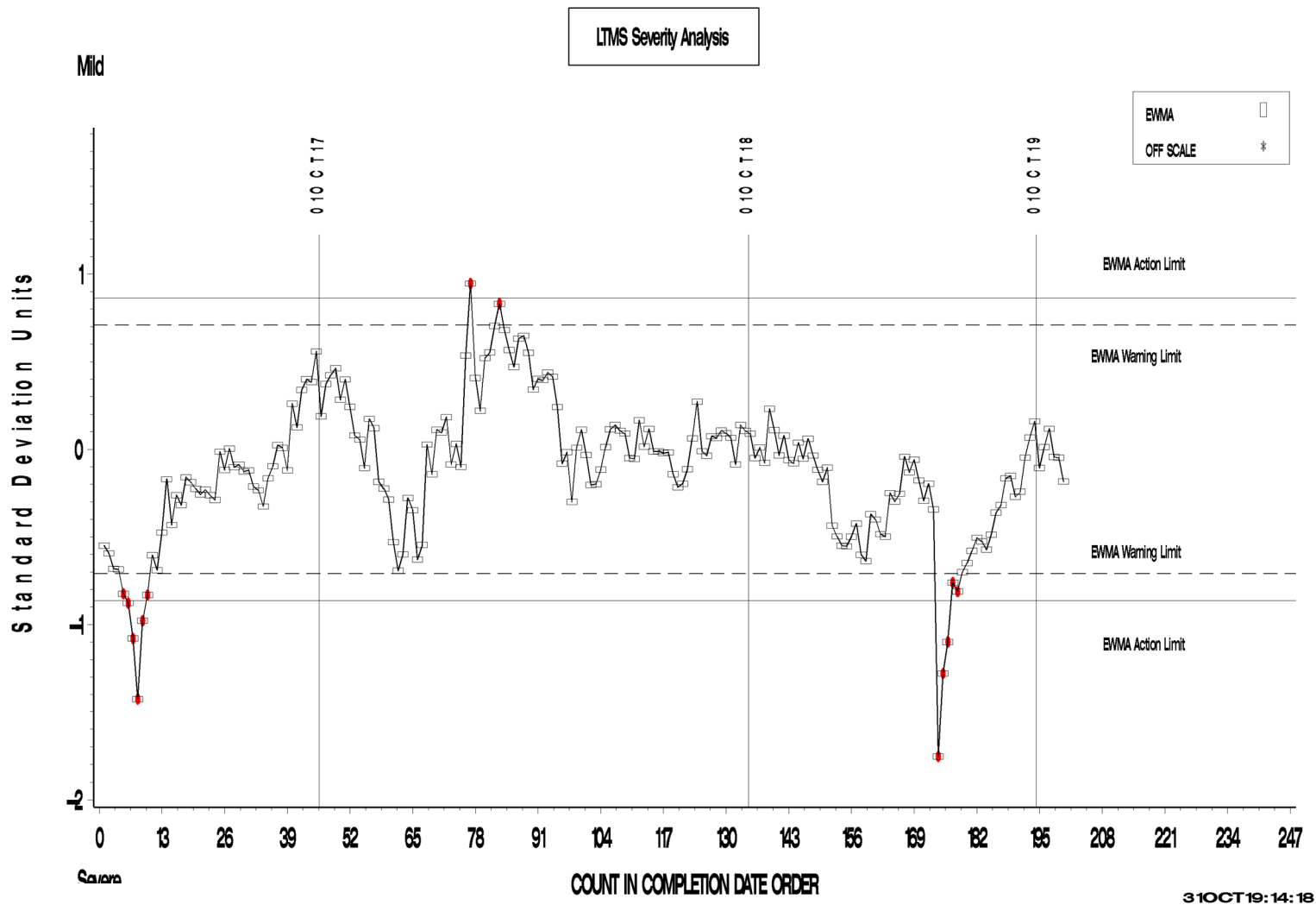
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# OSCT (D5662)

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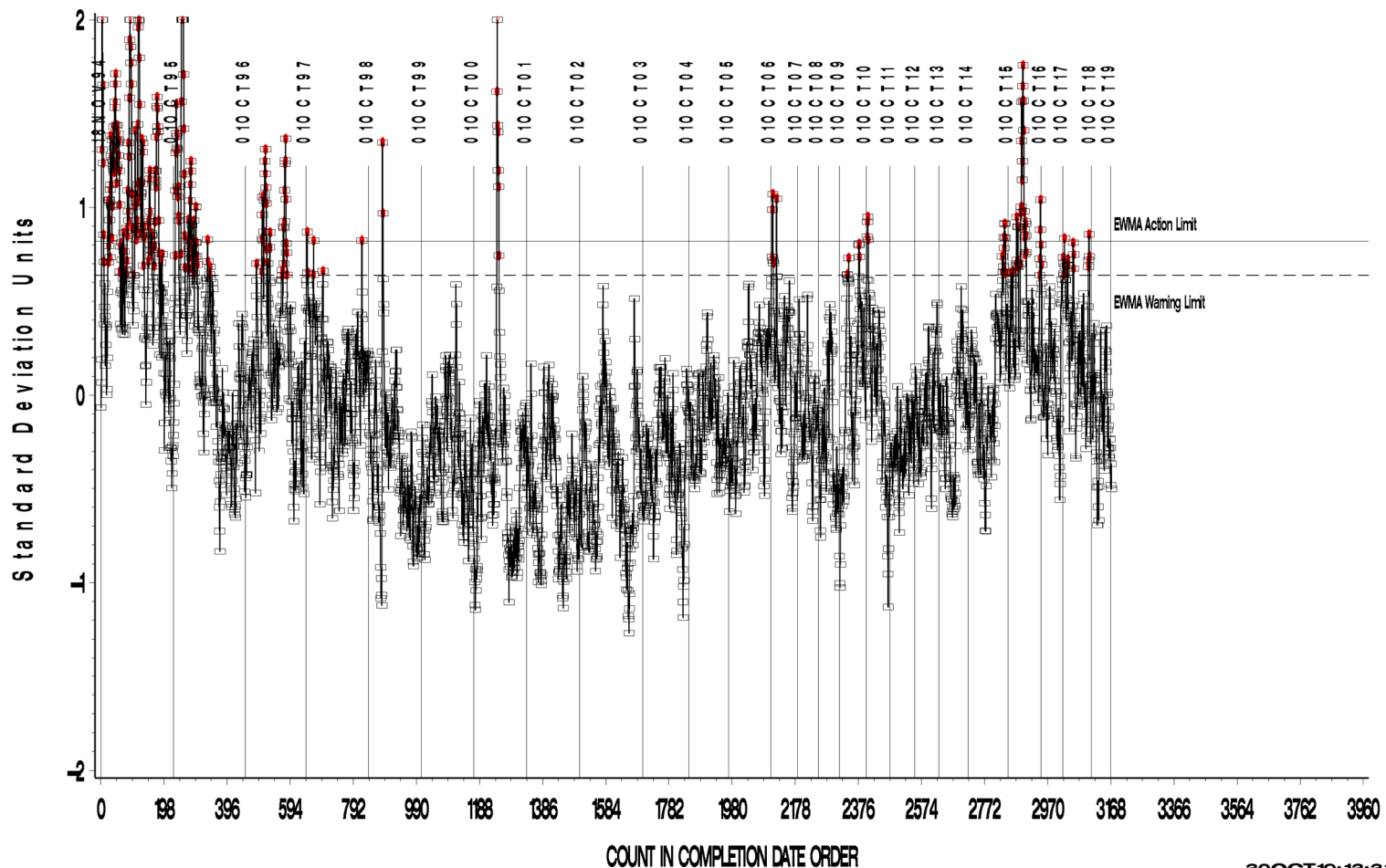


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REF. ELONGATION CHANGE AVG.

LTMS Precision Analysis



30OCT19:13:31

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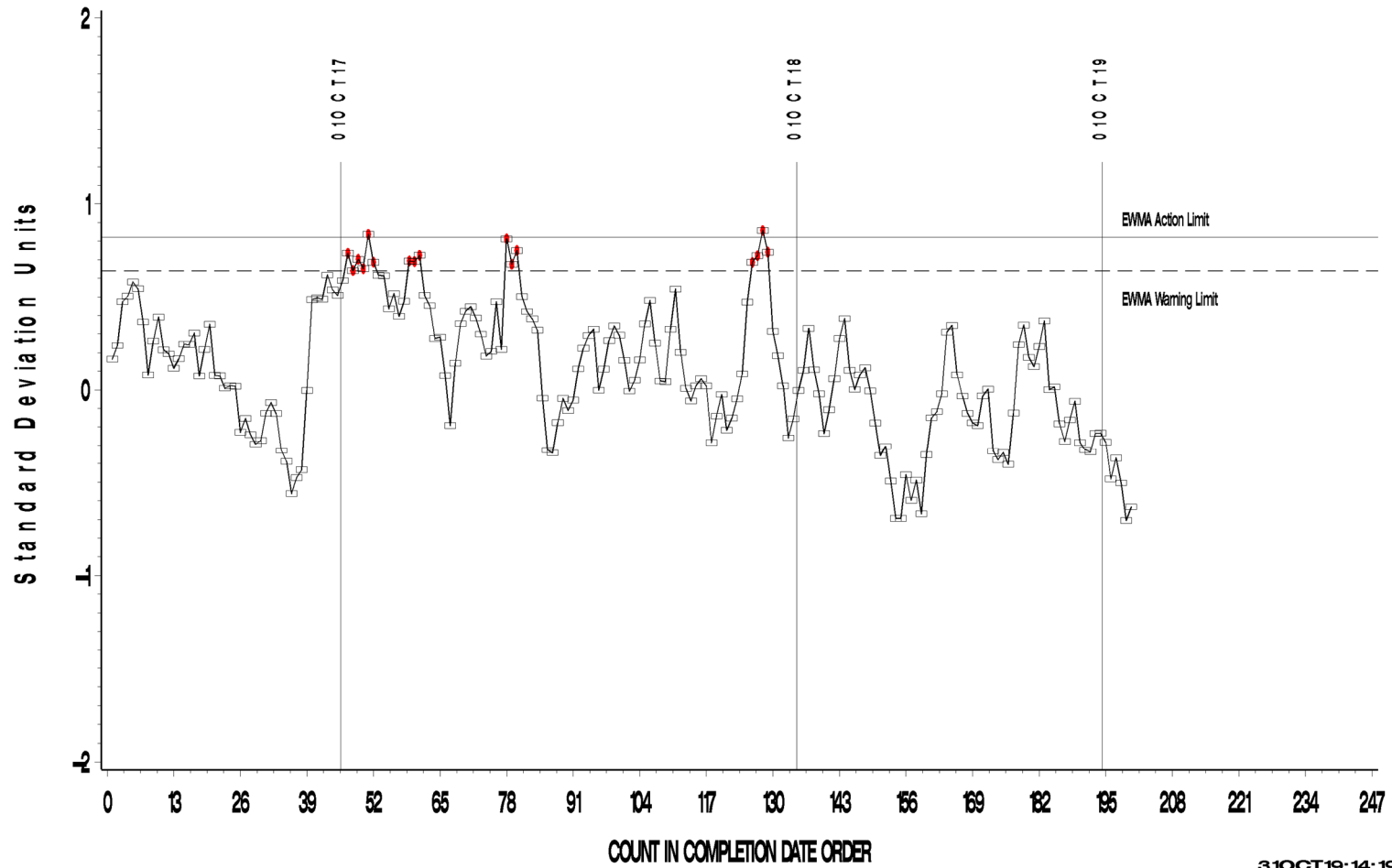


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# OSCT (D5662)

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LTMS Precision Analysis

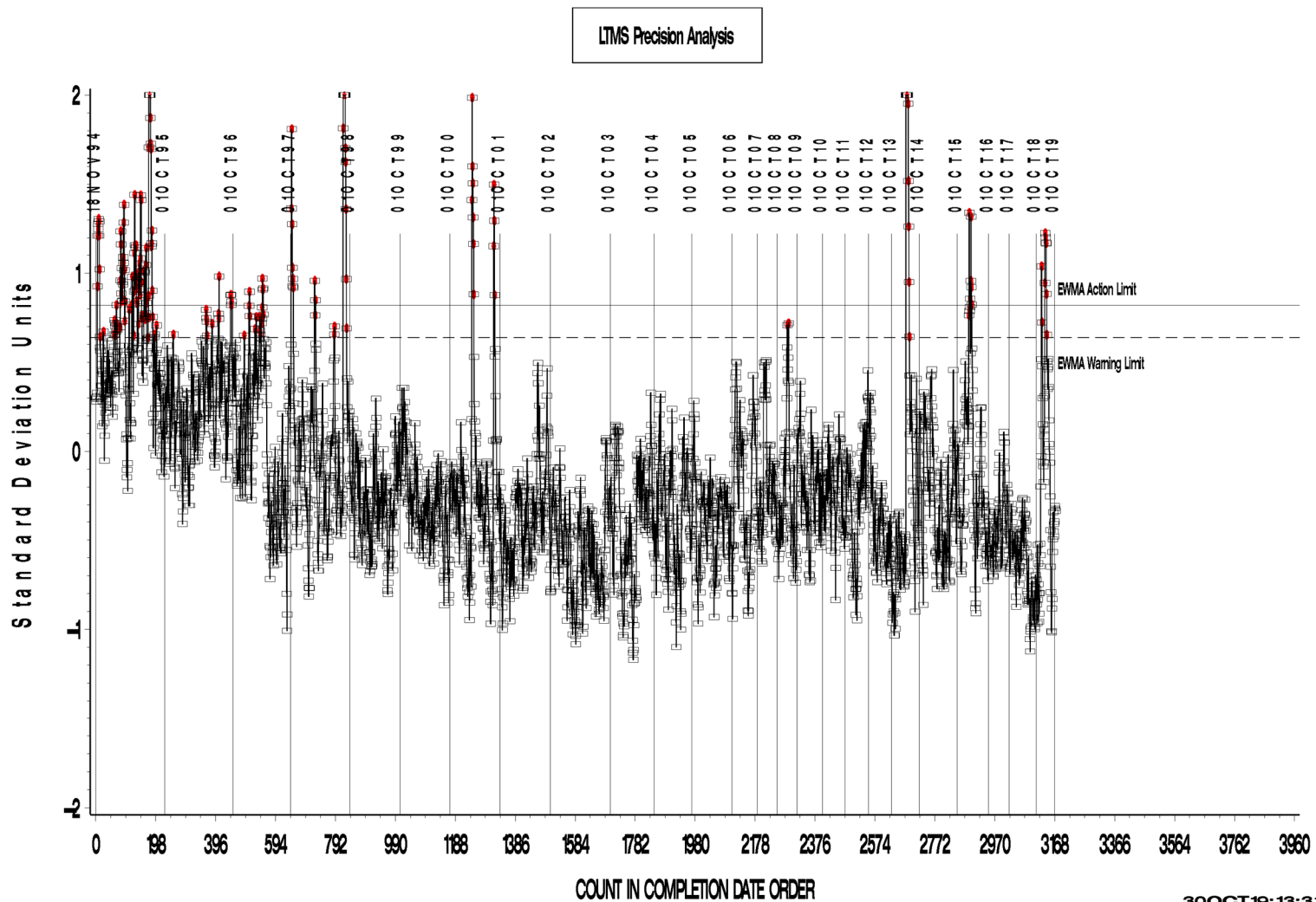


31OCT19:14:19

# OSCT (D5662)

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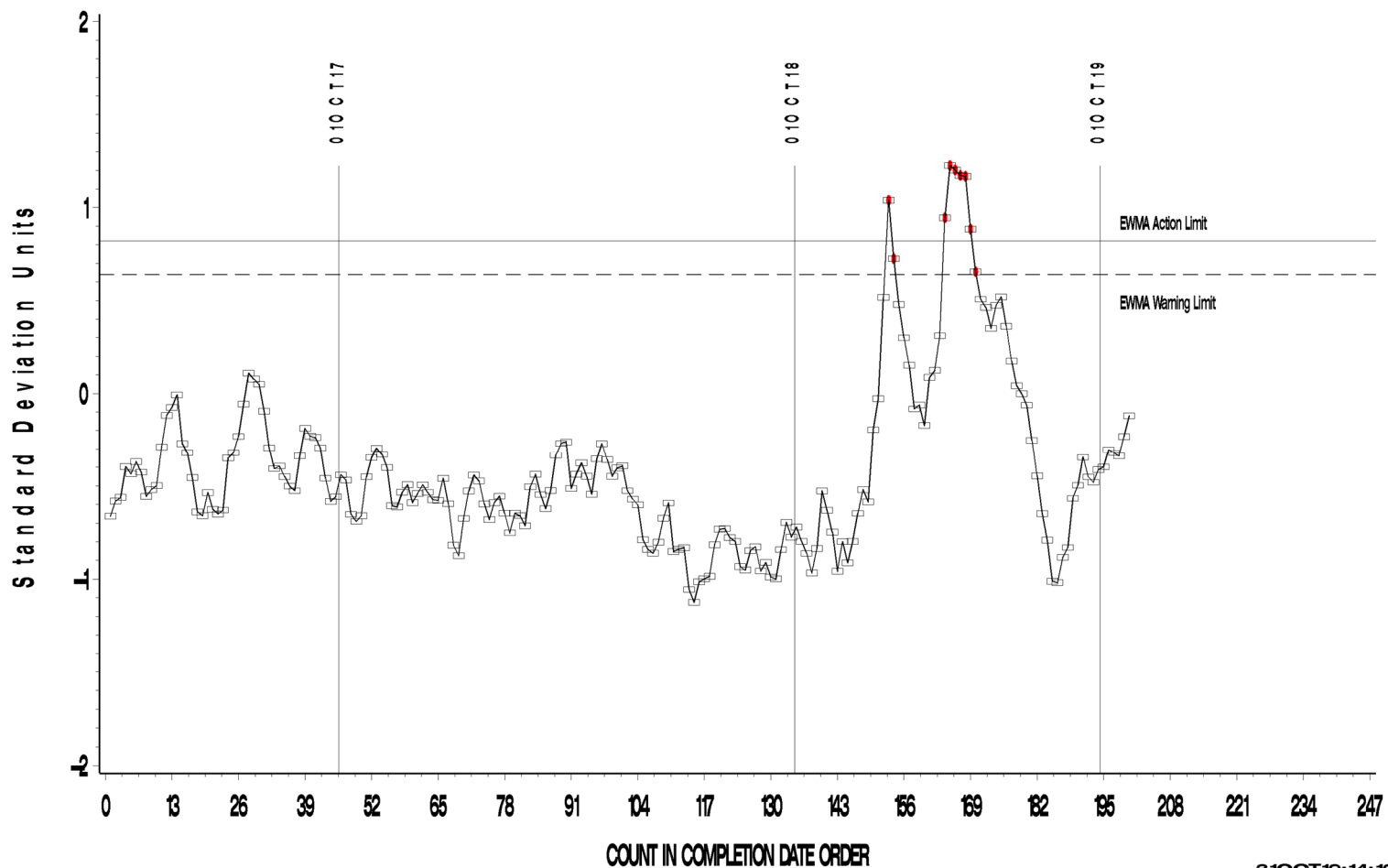


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LTMS Precision Analysis



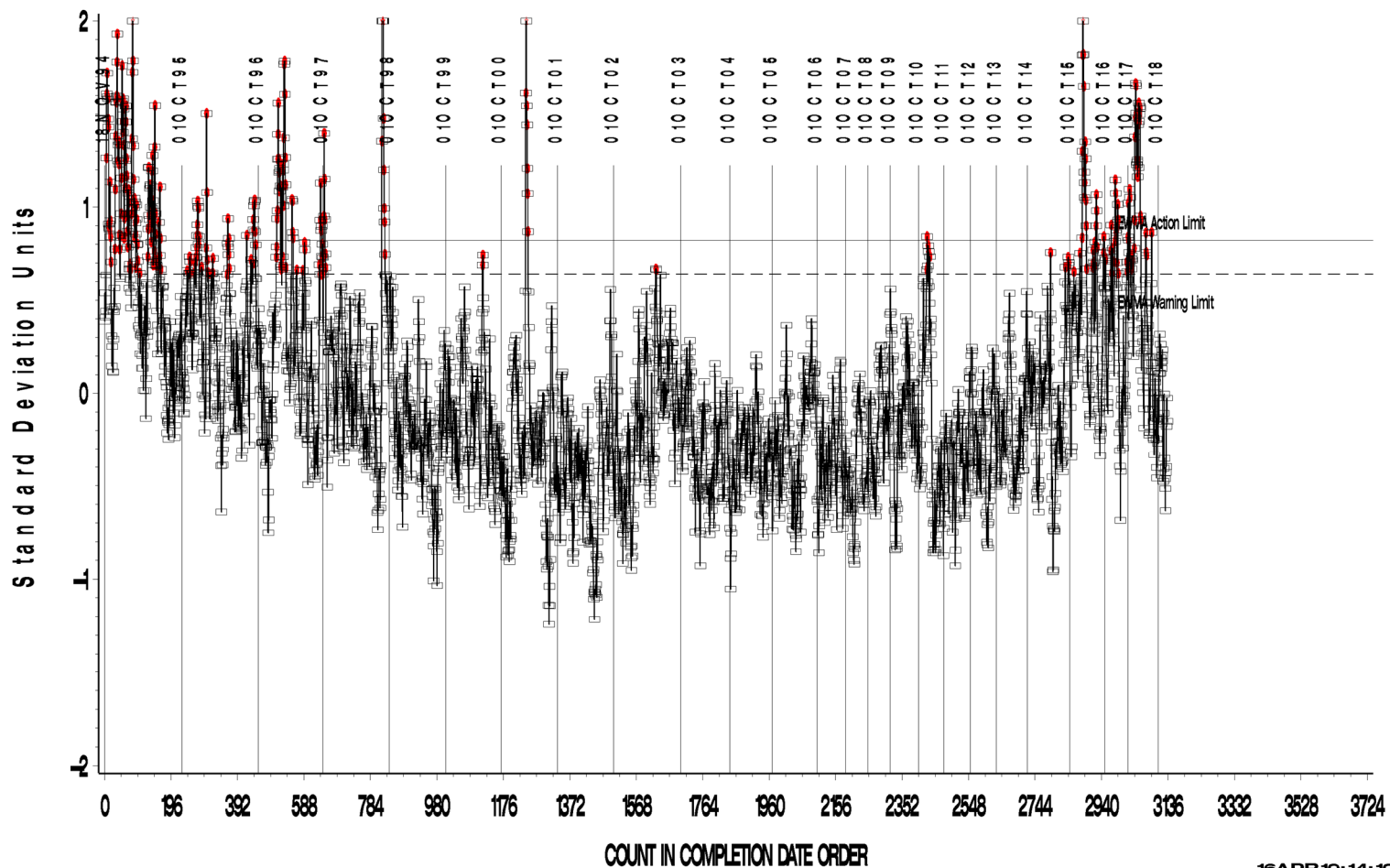
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LTMS Precision Analysis



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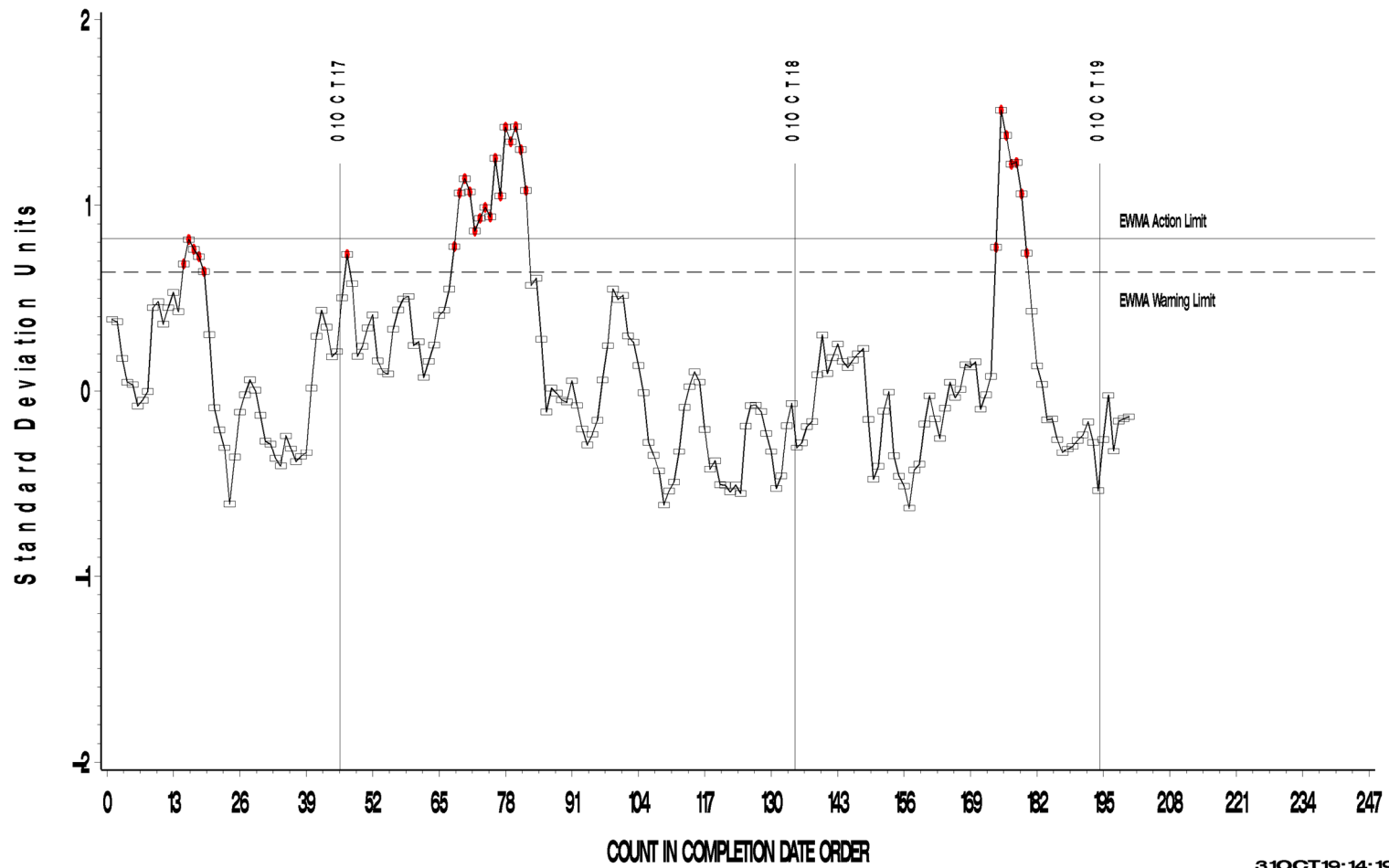
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LTMS Precision Analysis



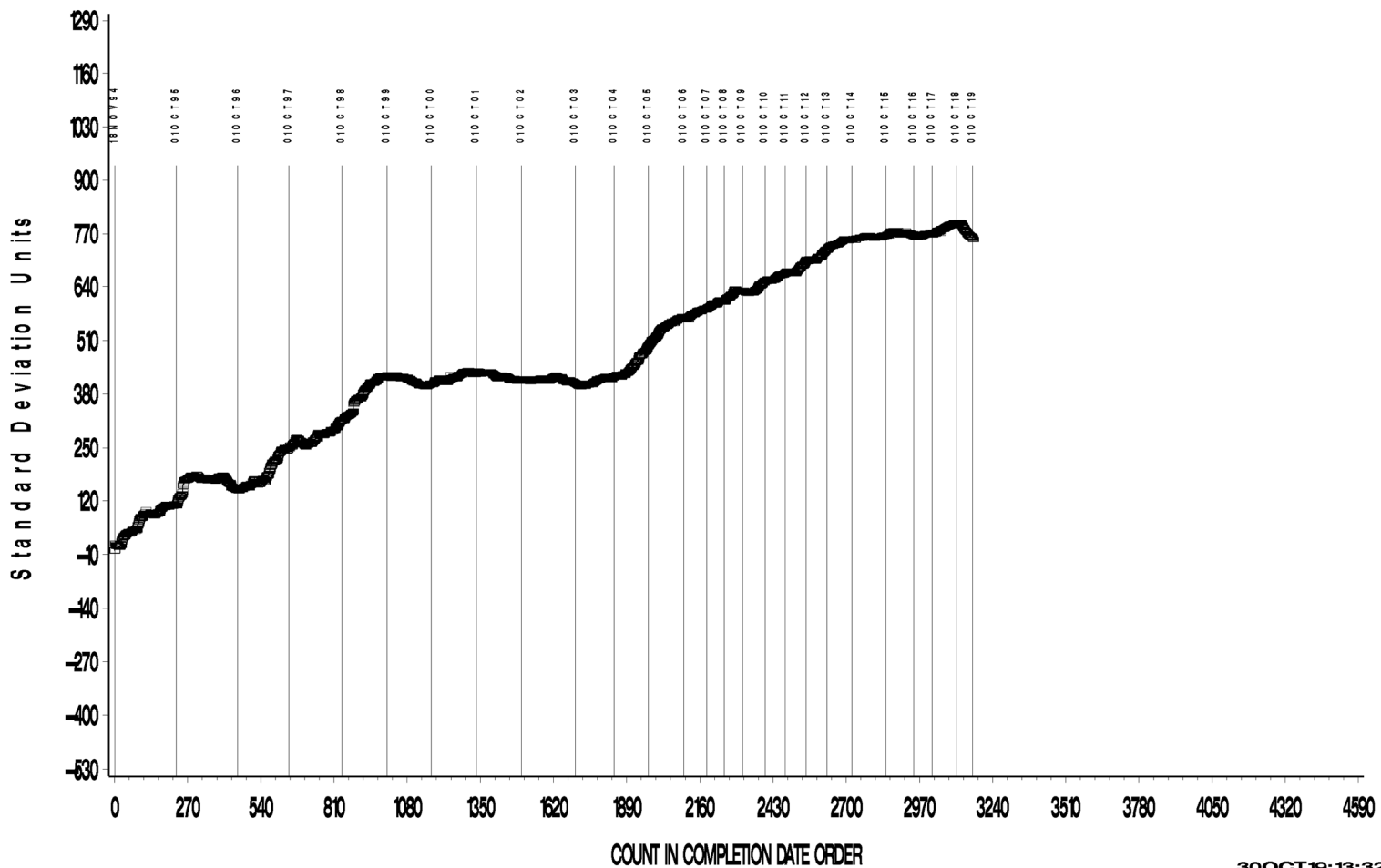
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REF. ELONGATION CHANGE AVG.

CUSUM Severity Analysis



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REF. ELONGATION CHANGE AVG.

CUSUM Severity Analysis



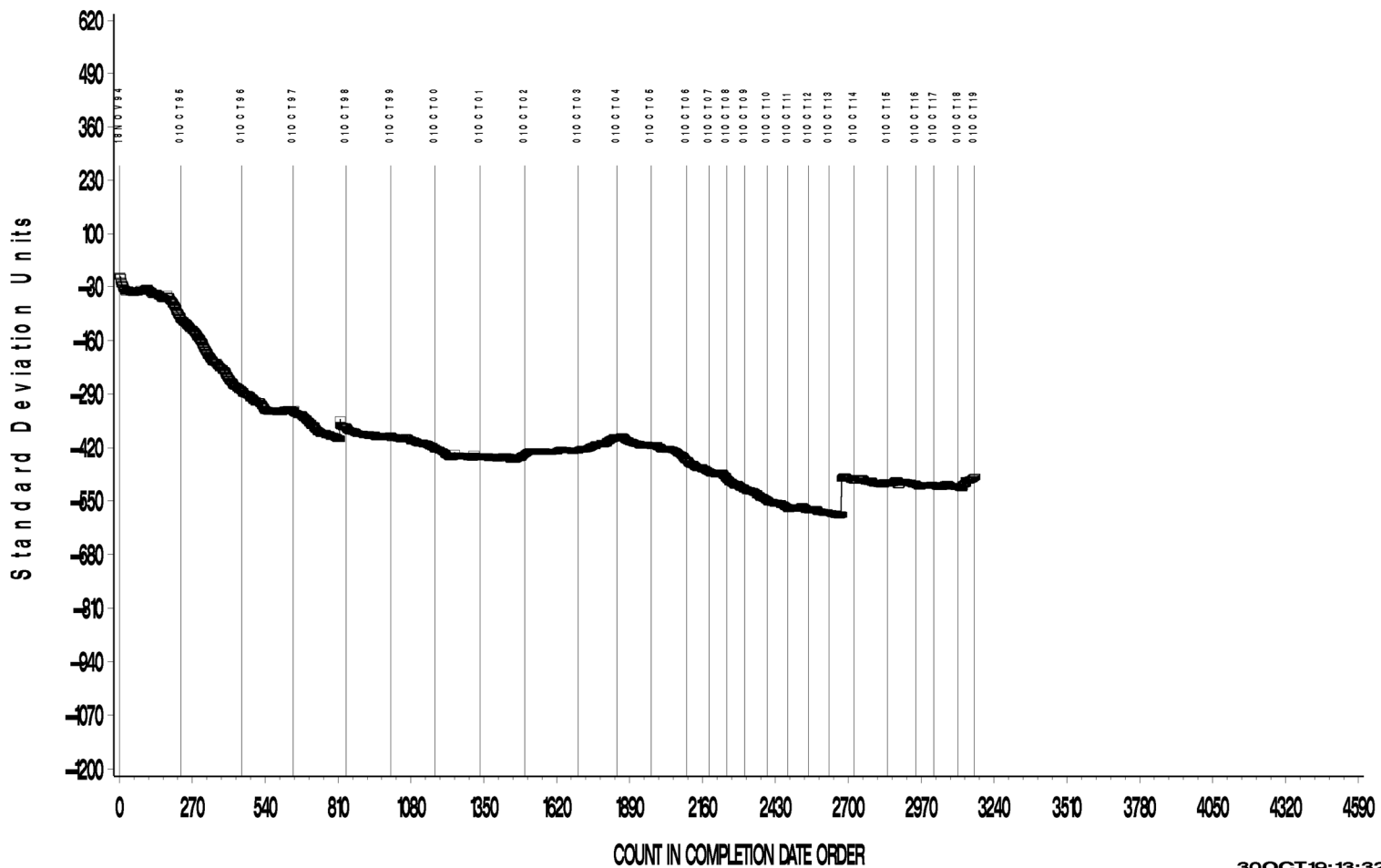
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CUSUM Severity Analysis



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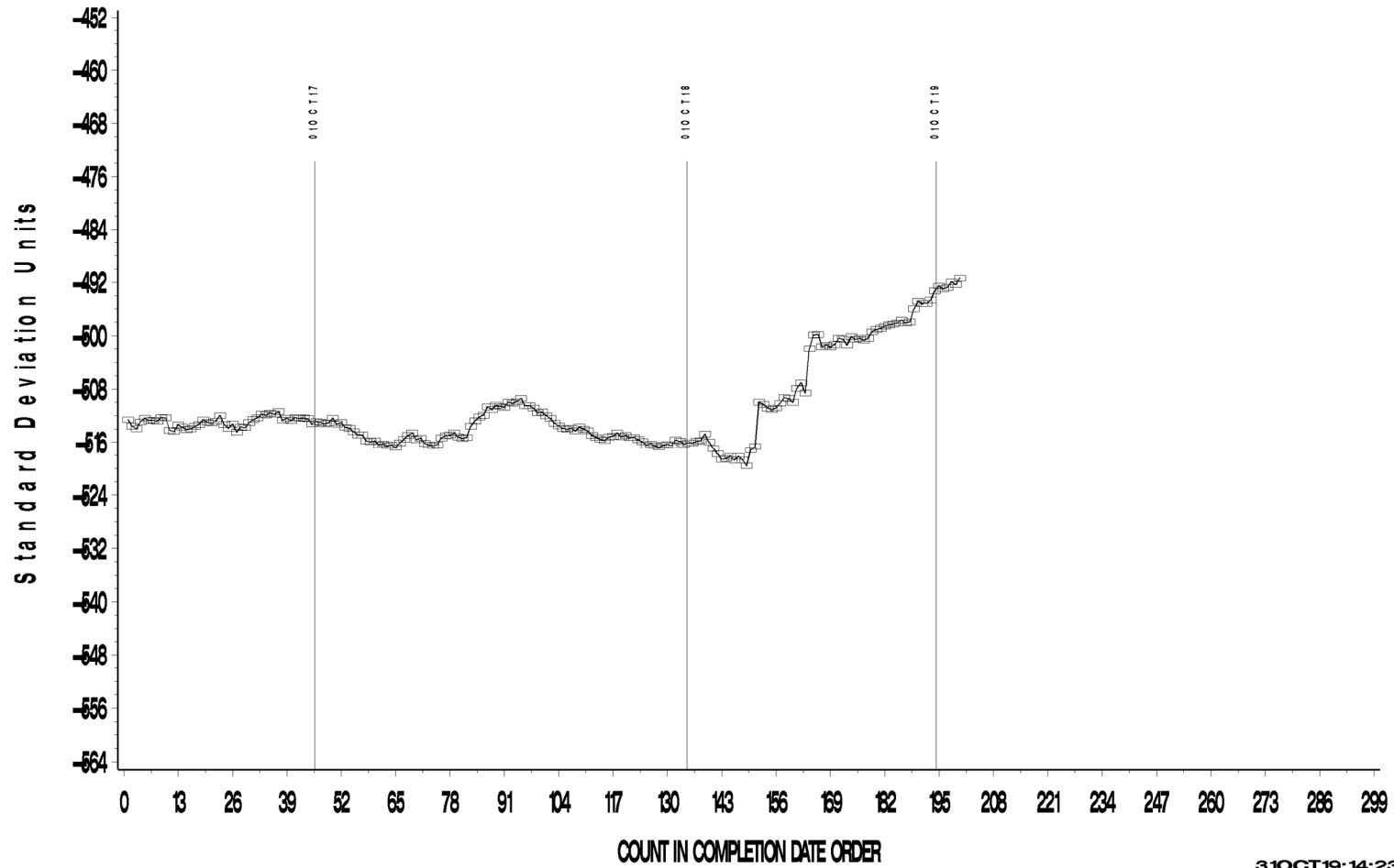


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CUSUM Severity Analysis



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CUSUM Severity Analysis



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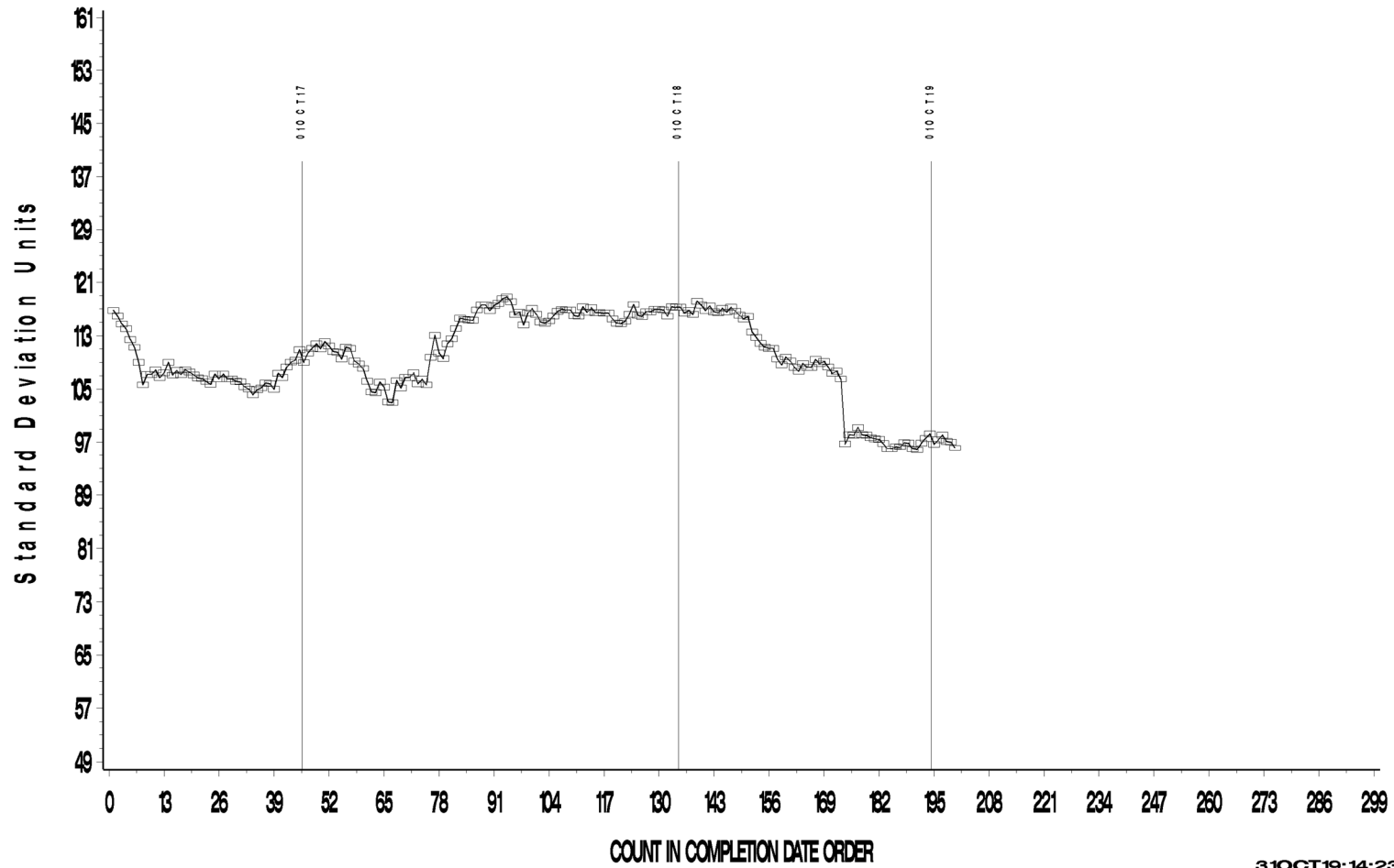


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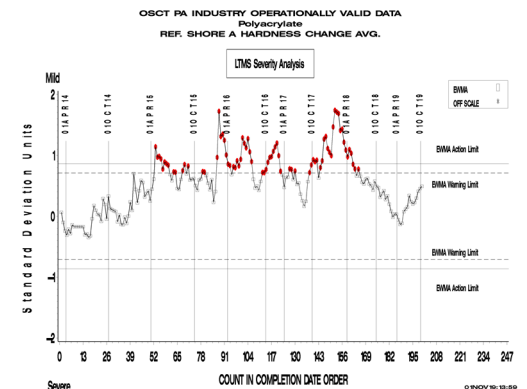
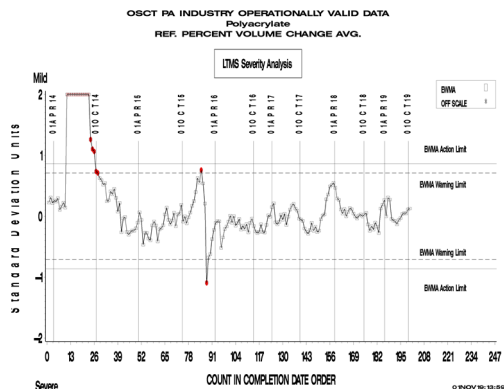
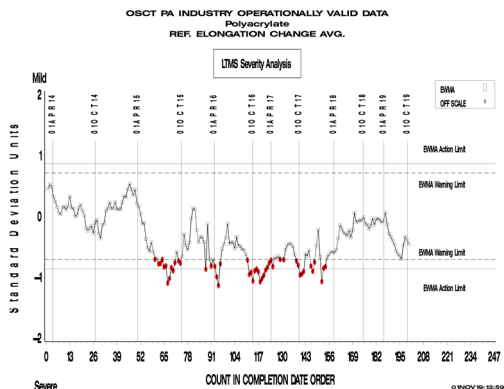
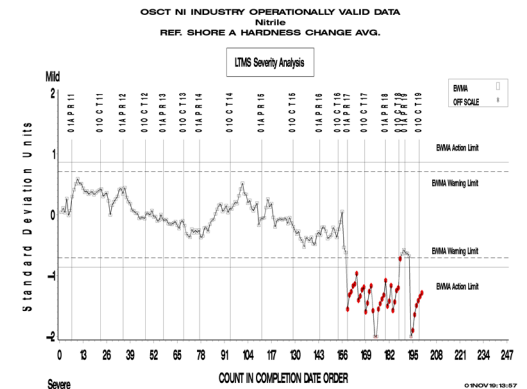
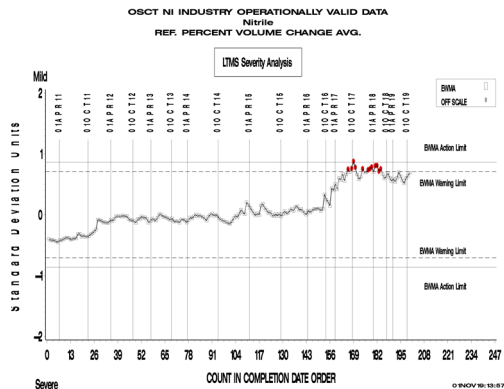
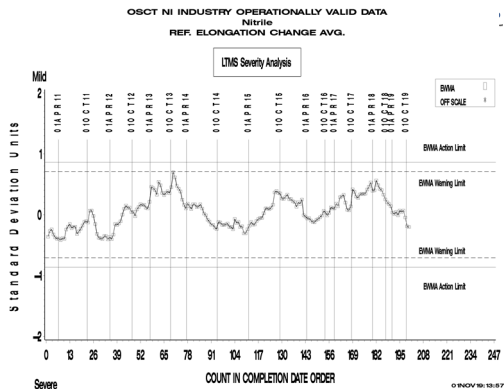
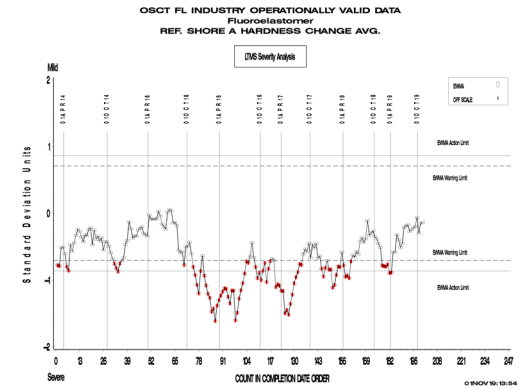
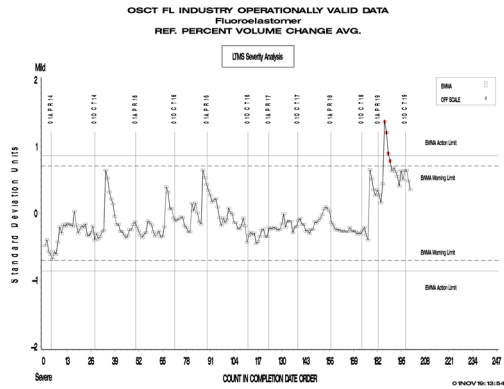
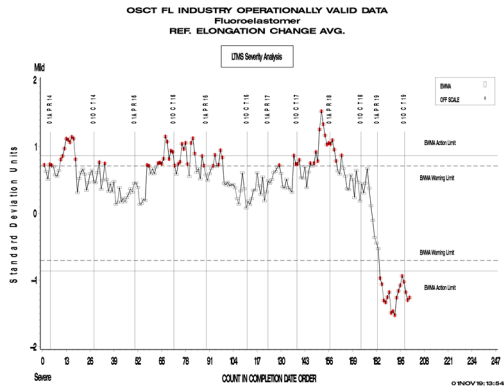
OSCT INDUSTRY OPERATIONALLY VALID DATA  
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CUSUM Severity Analysis



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# OSCT (D5662)





# OSCT (D5662)

## TIMELINE ADDITIONS

Effective Date	Information Letter	Event
April 25 <sup>th</sup> , 2019	19-01	Extended the storage life of PA and FL elastomers from 2 years to 5 years
May 15 <sup>th</sup> , 2019	19-02	Extended the storage life of NI elastomer from 2 years to 3 years
October 1, 2019	Report Packet Revision Notice OSCT-20190813	Changed the report form to allow averages to be reported to one additional level of precision. Average shore hardness was also changed to be reportable to one decimal point.

# OSCT (D5662)

## LAB VISITS

No OSCT lab visits were conducted during this period.

## INFORMATION LETTERS

Information letter 19-01 and 19-02 were issued this period.

# OSCT (D5662)

## STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
155-1	13	407	80.8
160-1	5	0	0.0
168	13	0	0.0
169	22	778	154.3
170	19	177	35.1
171	27	177	35.2
Total	86	1132	224.6

Oil 168 is nearing depletion. Oil 170 has been introduced as a replacement. Oil 171 is the same additive package as oil 160-1 in a different base oil and has been introduced as a replacement.