



## Test Monitoring Center

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

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

MEMORANDUM: 17-047

DATE: November 30, 2017

TO: Don Bell, Chairman, OSCT Surveillance Panel

FROM: Dylan Beck *Dylan Beck*

SUBJECT: OSCT Reference oil testing from April 1, 2017 through September 30, 2017

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

DJB/djb/mem17-047.djb.doc

cc: Frank Farber

Jeff Clark

Scott Parke

OSCT Surveillance Panel

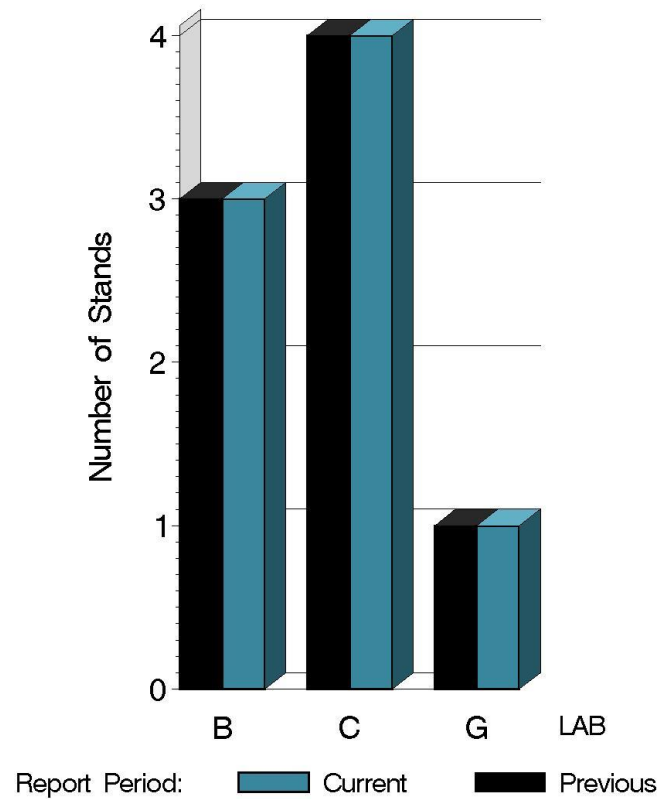
<http://www.astmtmc.cmu.edu/ftp/docs/gear/osct/semiannualreports/osct-10-2017.pdf>

Distribution: email

# OSCT (D5662)

	Reporting Data	Calibrated on 9-30-2017
Number of Labs	3	3
Number of Stands	8	8

BY-LAB STAND  
DISTRIBUTION



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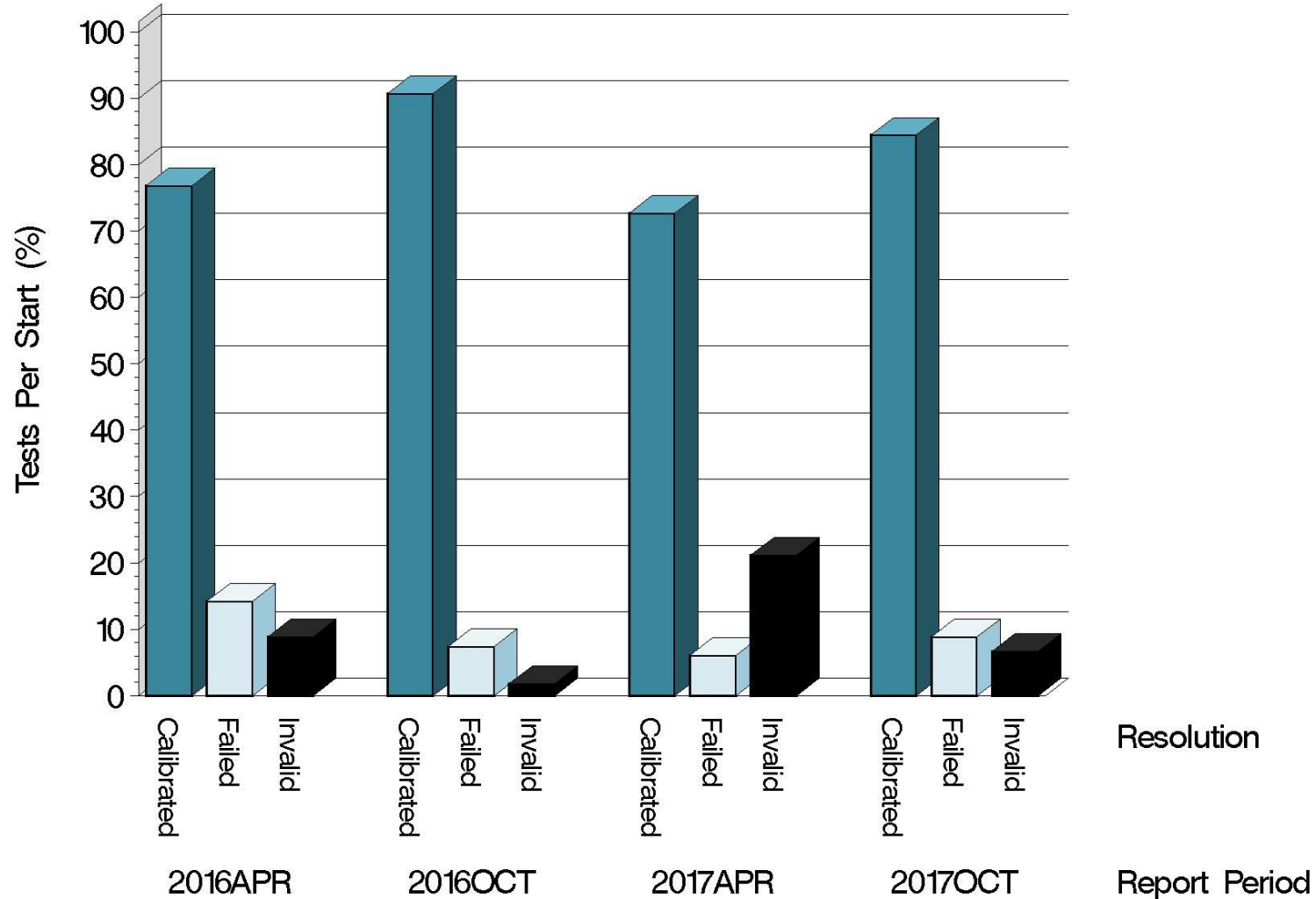
# OSCT (D5662)

## Test Distribution by Elastomer and Validity

					Totals	
		FL	NI	PA	Last Period	This Period
Accepted for calibration	AC	14	9	15	24	38
Rejected (low result)	OC	1	1	0	2	2
Rejected (high result)	OC	1	0	1	0	2
Invalidated by lab	LC	0	0	0	1	0
Invalidated	RC	0	0	1	1	1
Aborted	XC	0	0	2	5	2
Elastomer approval run	NI	6	0	9	25	15
Unacceptable approval run	MI	4	0	1	5	5
Op. invalid approval run	LI	2	0	3	0	5
Aborted approval run	XI	0	0	2	6	2
Total		28	10	34	69	72

# OSCT (D5662)

## CALIBRATION ATTEMPT SUMMARY



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# OSCT (D5662)

## CAUSES FOR LOST TESTS

Lab	Cause	Oil			Validity				Loss Rate		
		FL	NI	PA	LI	RC	XC	XI	Lost	Starts	%
B	Bad reference.	●			●				4	26	15%
	Bad reference.	●			●						
	Bad reference.			●	●						
	Bad reference.			●	●						
G	Old elastomer material.			●		●			6	15	40%
	Lost temperature control.			●			●				
	Lost temperature control.			●			●				
	Lost temperature control.			●				●			
	Lost temperature control.			●				●			
	Bad reference.			●	●						
Lost		2	0	8	5	1	2	2			
Starts		28	10	34	72	72	72	72			
%		7%	0%	23%	7%	14%	3%	3%			

# OSCT (D5662)

## Average $\Delta$ /s by Lab

Elastomer	Lab	n	PELA	PVCA	SAHA
FL	B	5	1.455	-0.203	-1.639
	C	10	0.370	0.014	-0.409
	G	1	0.057	-1.268	-0.077
	Industry	16	0.690	-0.134	-0.773
	Shift*	16	5.152%	-0.071%	-1.093 pts.
NI	B	5	0.596	0.129	-0.702
	C	5	0.542	0.367	0.445
	Industry	10	0.569	0.248	-0.128
	Shift*	10	3.025%	0.131%	-0.156 pts.
PA	B	4	-0.985	-0.037	1.556
	C	10	-0.548	0.252	0.132
	G	2	-0.552	-0.990	1.121
	Industry	16	-0.657	0.025	0.612
	Shift*	16	-14.211%	0.048%	1.570 pts.

\*computed using historic pooled s

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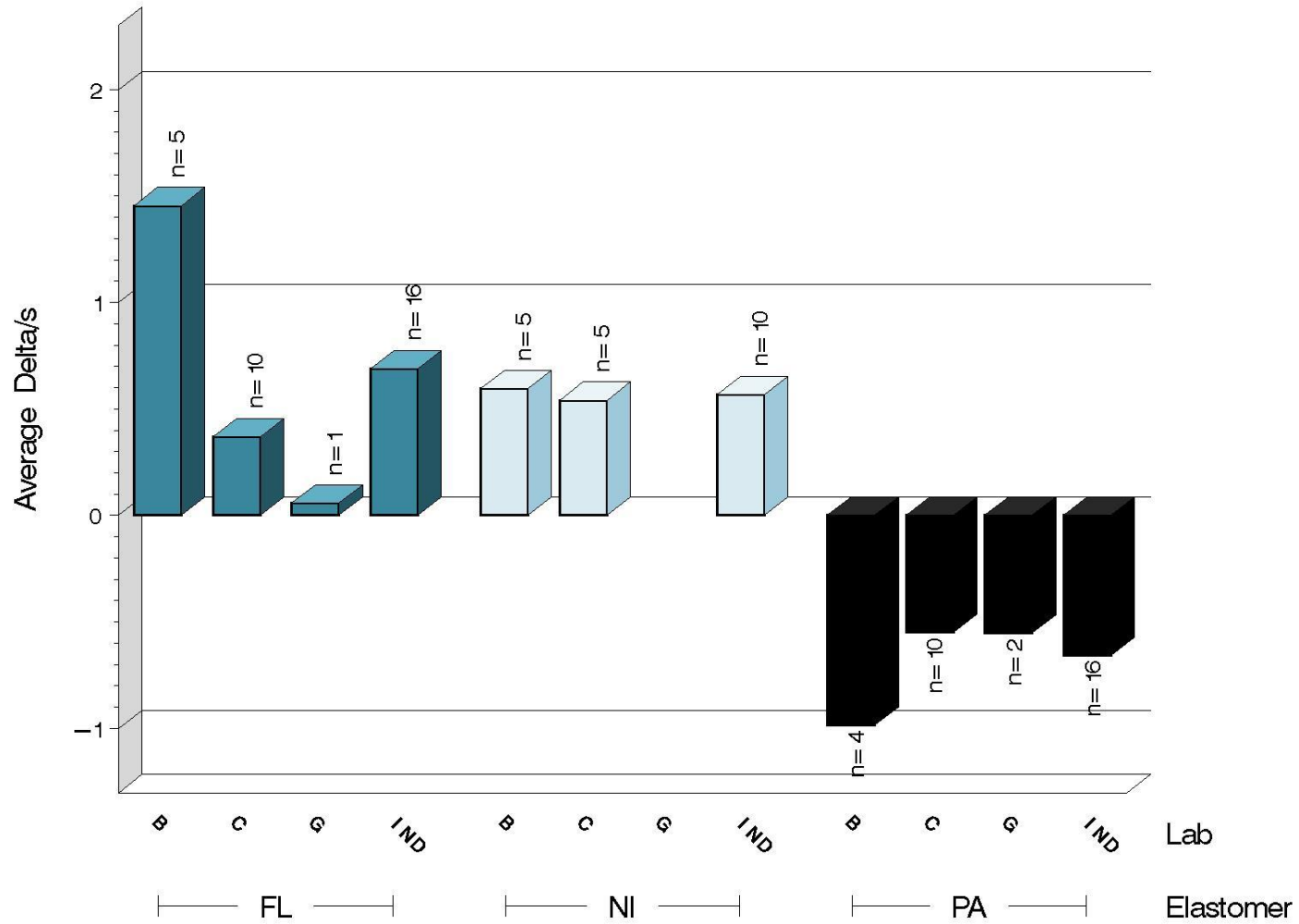


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# OSCT (D5662)

## %ELONGATION SEVERITY

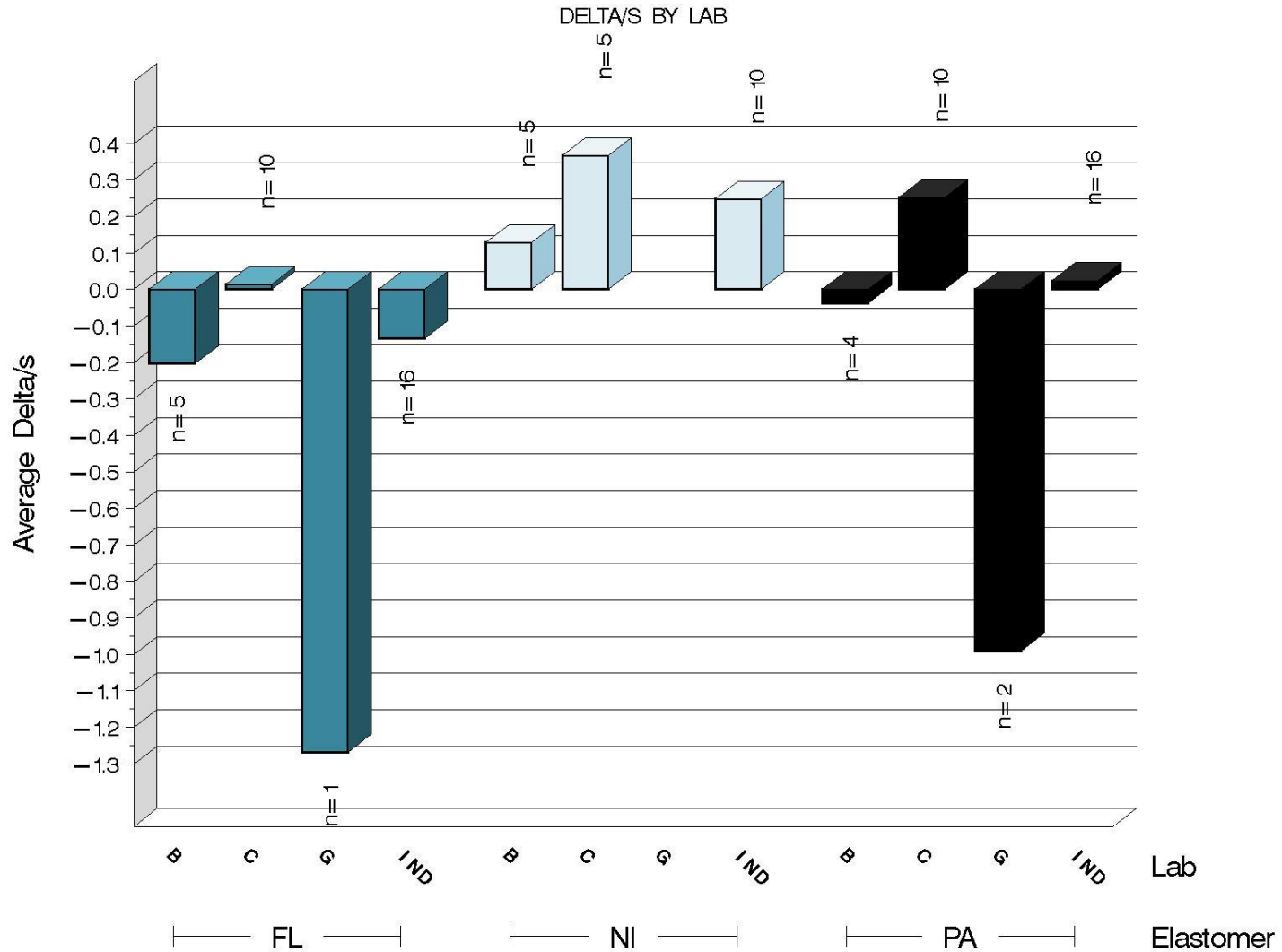
DELTA/S BY LAB



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# OSCT (D5662)

## %VOLUME CHANGE SEVERITY



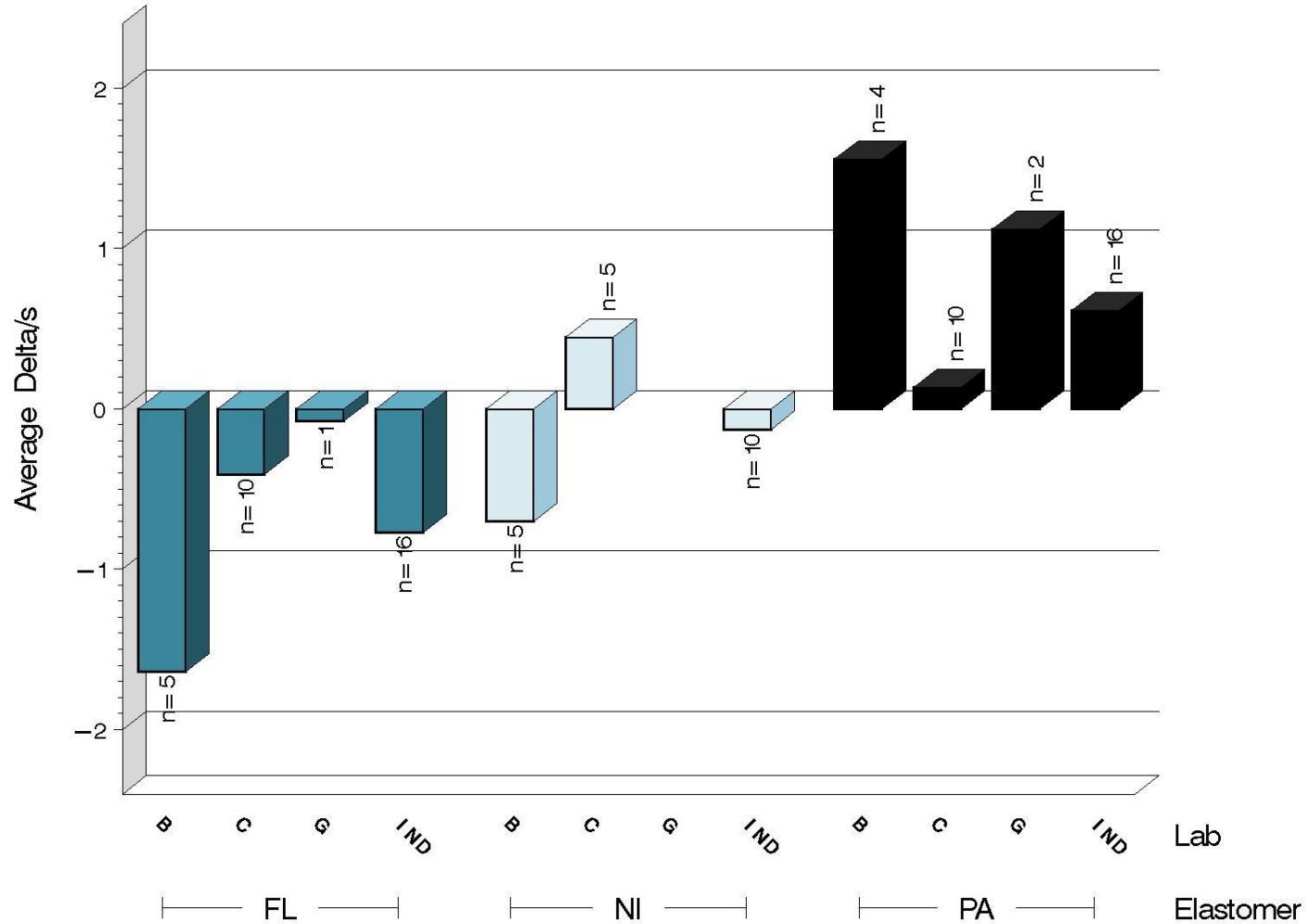
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# OSCT (D5662)

## S.A. HARDNESS SEVERITY

DELTA/S BY LAB

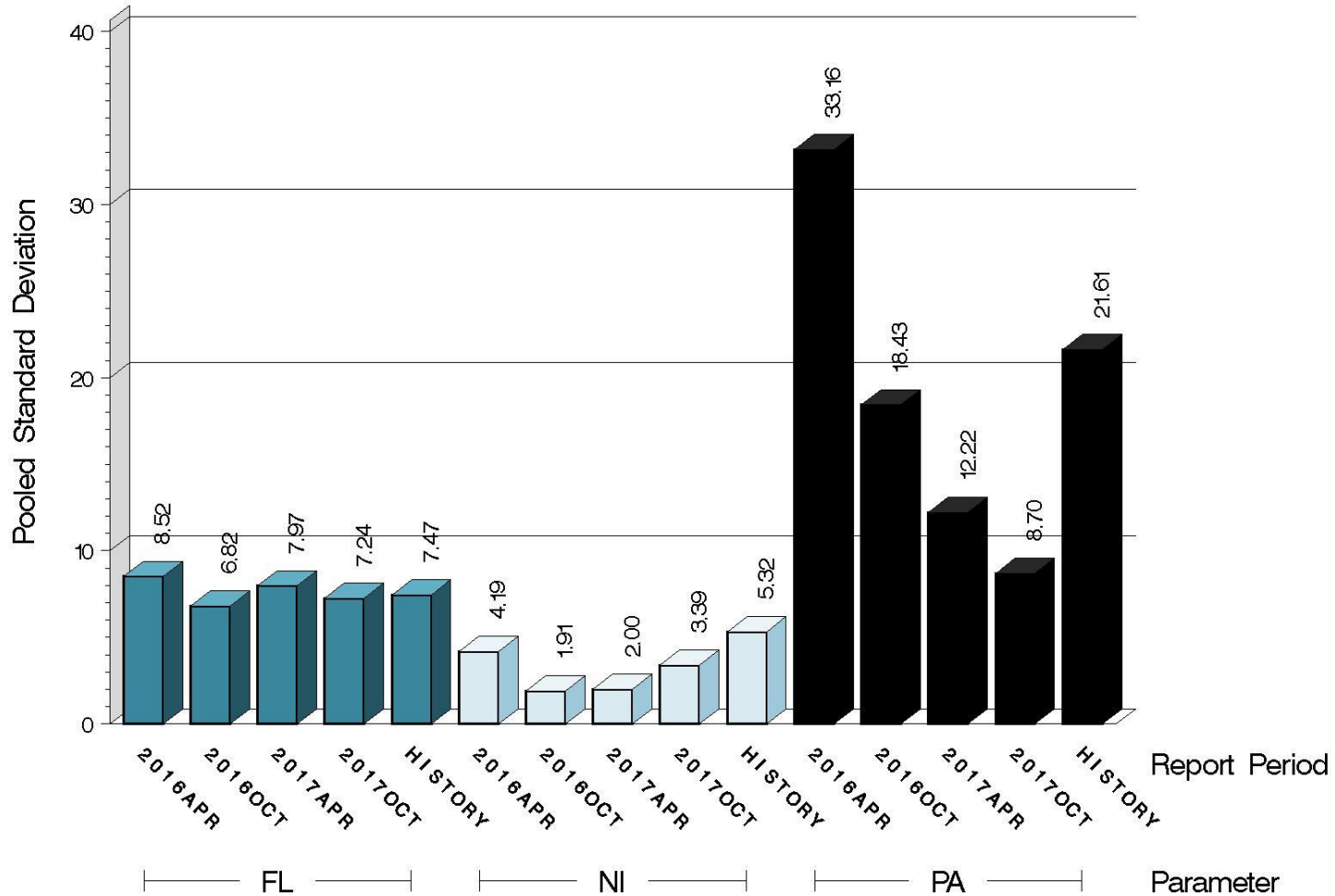


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# OSCT (D5662)

## %ELONGATION PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD

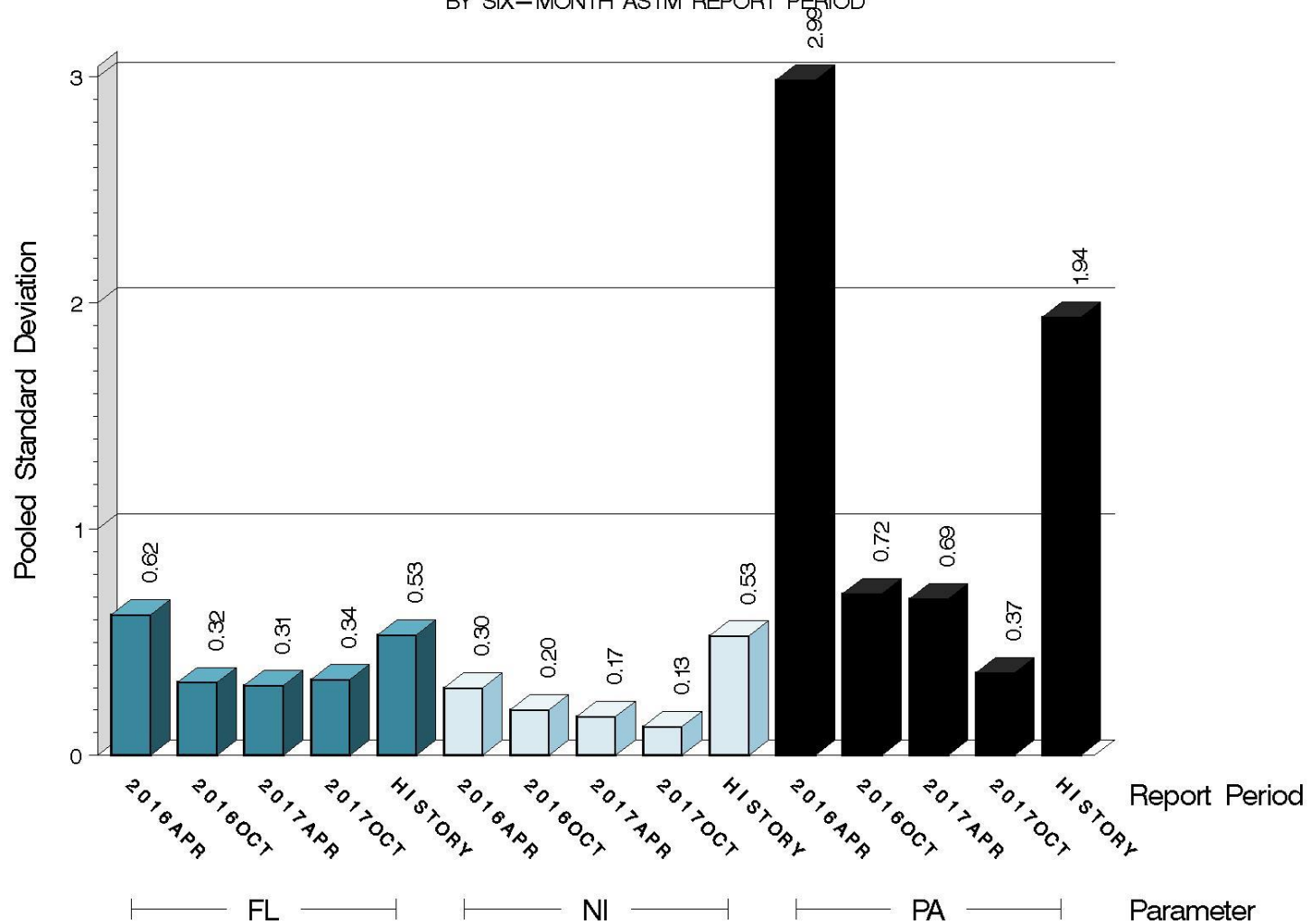


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# OSCT (D5662)

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POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD

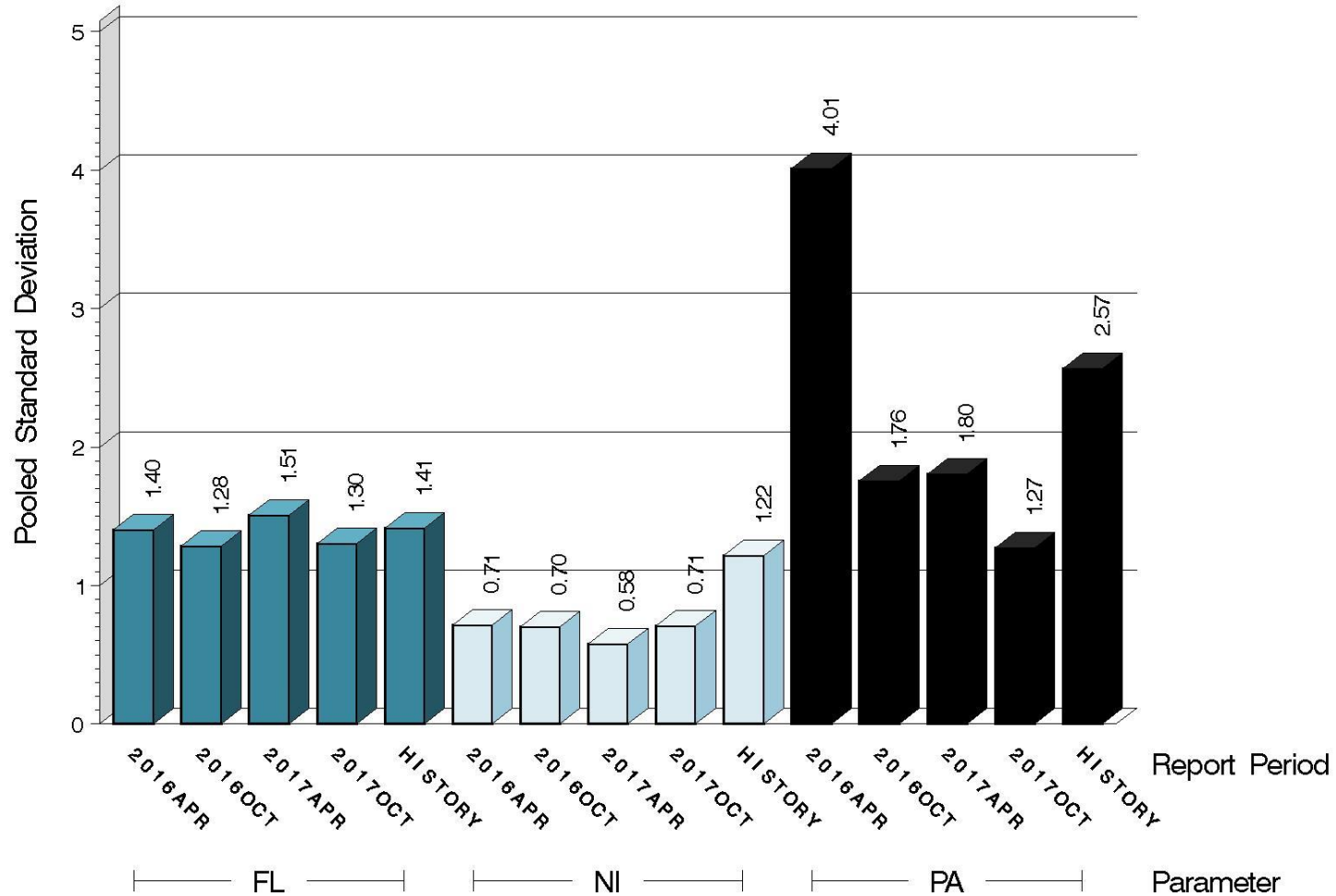


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# OSCT (D5662)

## S.A. HARDNESS PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



14:41:37 27NOV2017

# OSCT (D5662)

## SUMMARY OF SEVERITY & PRECISION

### Severity

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

The by-elastomer plots show that the within-limit performance for PELA and SAHA shown on the combined chart is not accurate. High PELA results on fluoroelastomer are being offset by low PELA results on polyacrylate. Likewise, Low SAHA results on fluoroelastomer are being offset by high SAHA results on polyacrylate.

Nitrile results for all parameters have remained within control chart limits.

### Precision

Both PELA and SAHA exceeded the action limit this period. PVCA remained within limits.

# OSCT (D5662)

## Precision

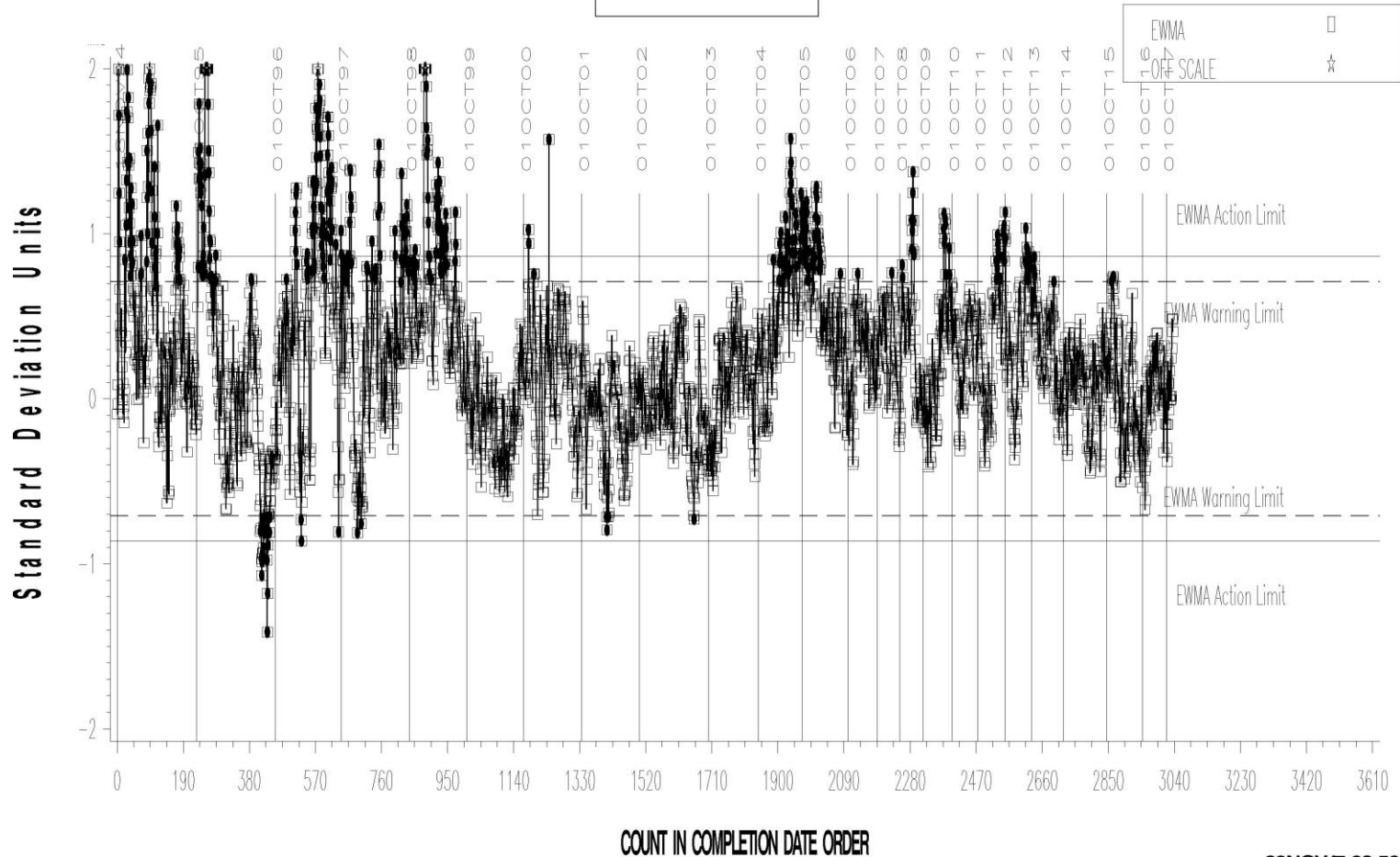
Industry control charts follow.

# OSCT (D5662)

OSCT INDUSTRY OPERATIONALLY VALID DATA

REF. ELONGATION CHANGE AVG.

LTMS Severity Analysis



30NOV17:08:56

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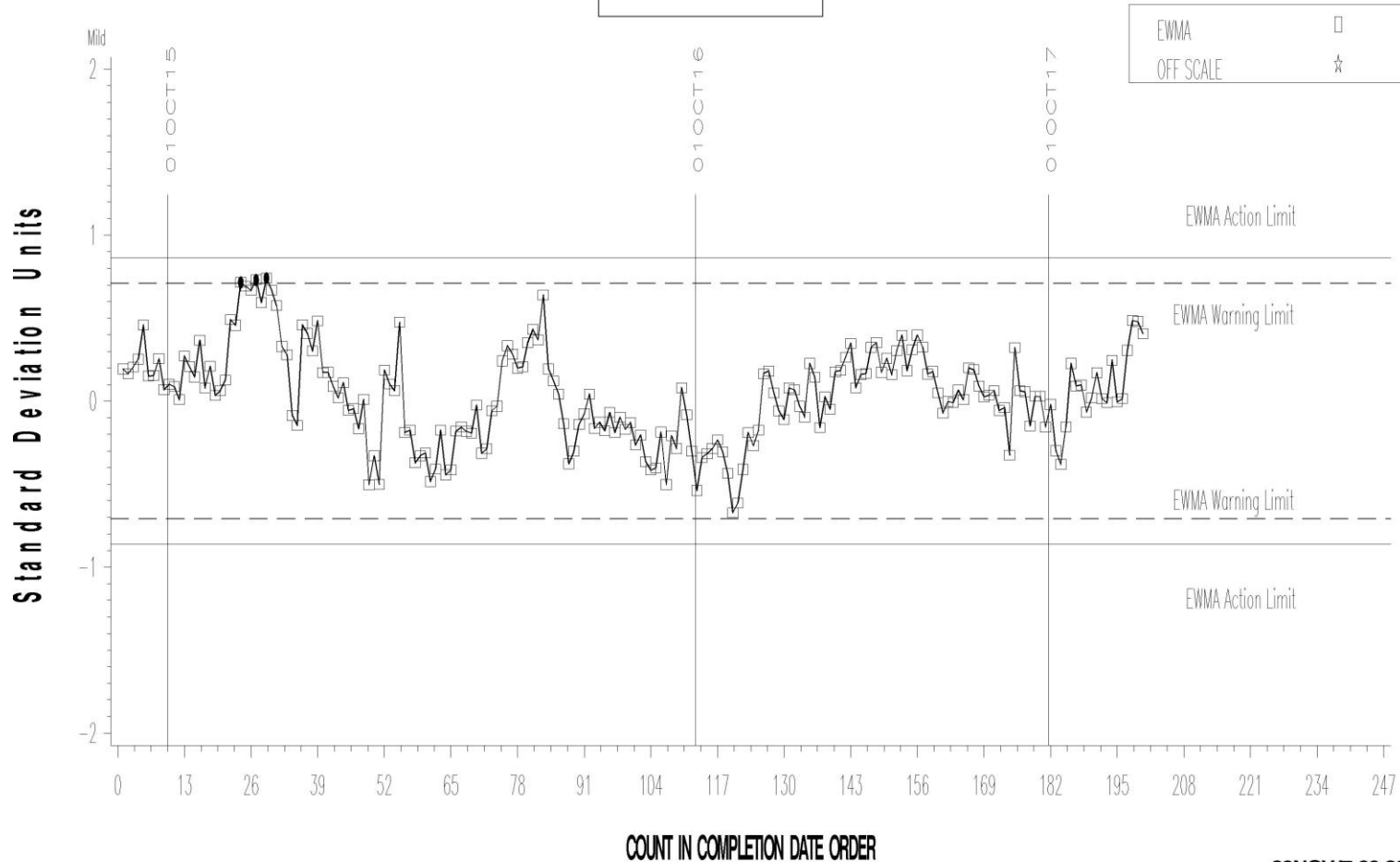
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# OSCT (D5662)

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Zoomed to Show 200 Most Recent Tests  
REF. ELONGATION CHANGE AVG.



LTMS Severity Analysis



SPVPRP

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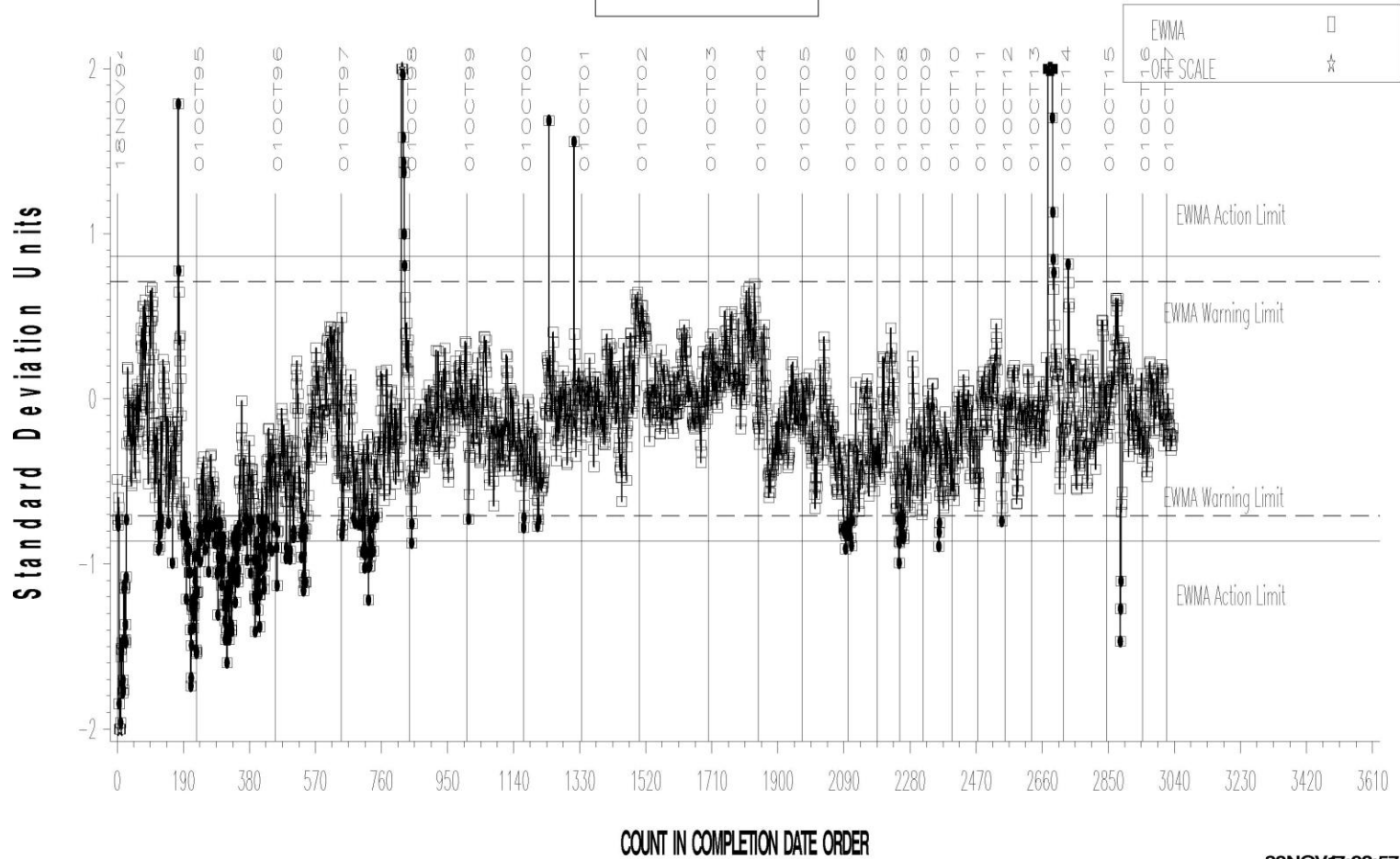


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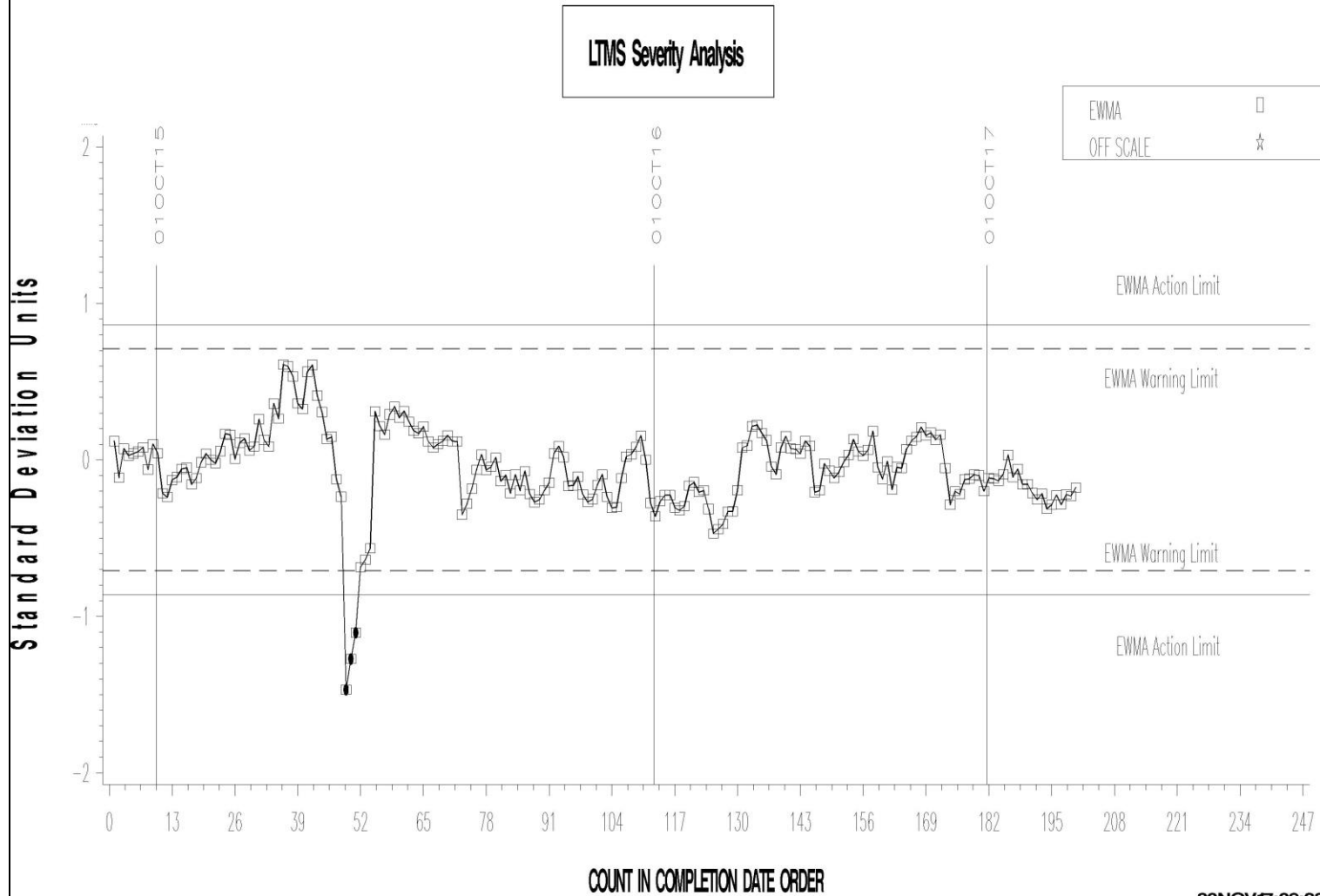
LTMS Severity Analysis



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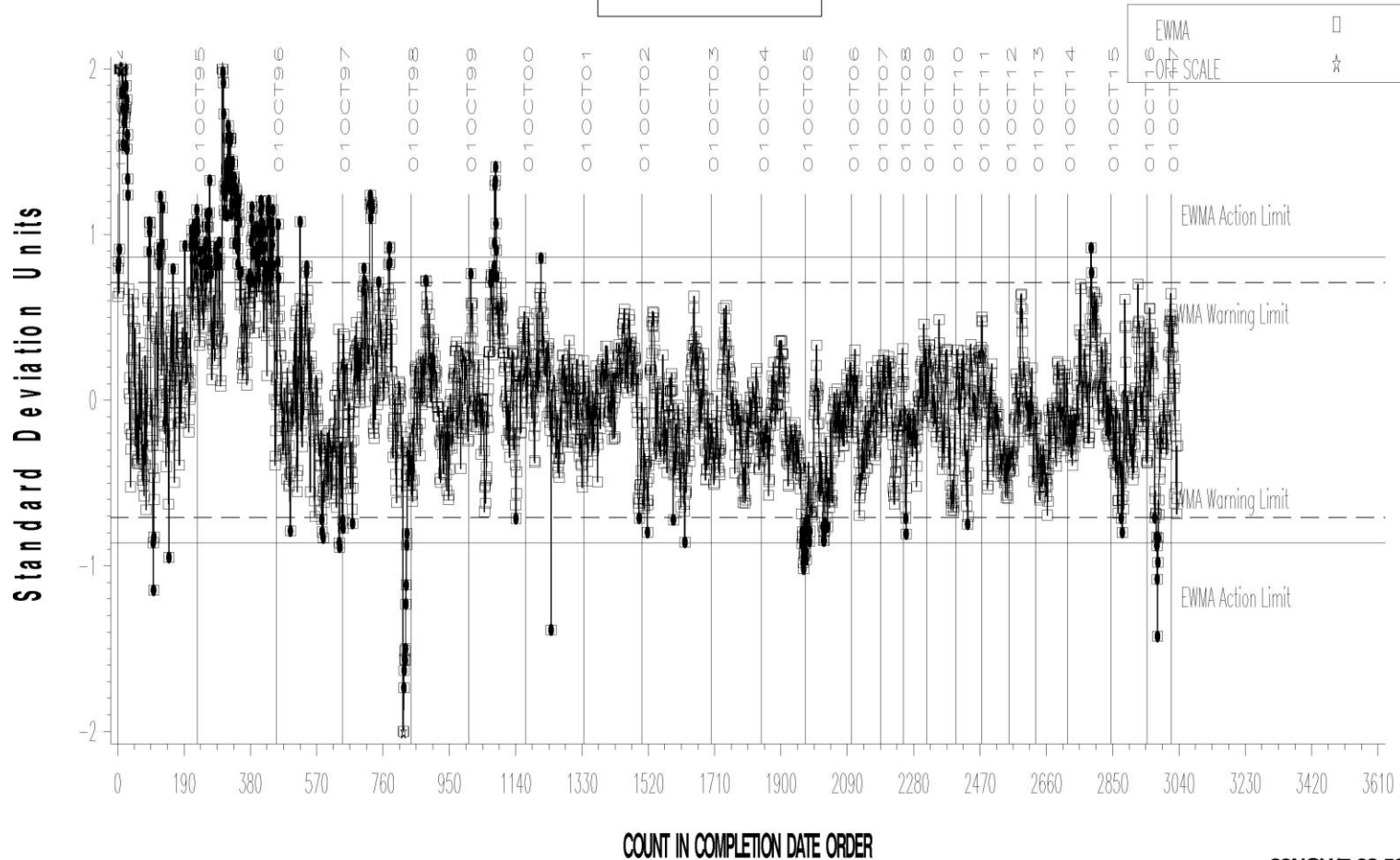
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LTMS Severity Analysis

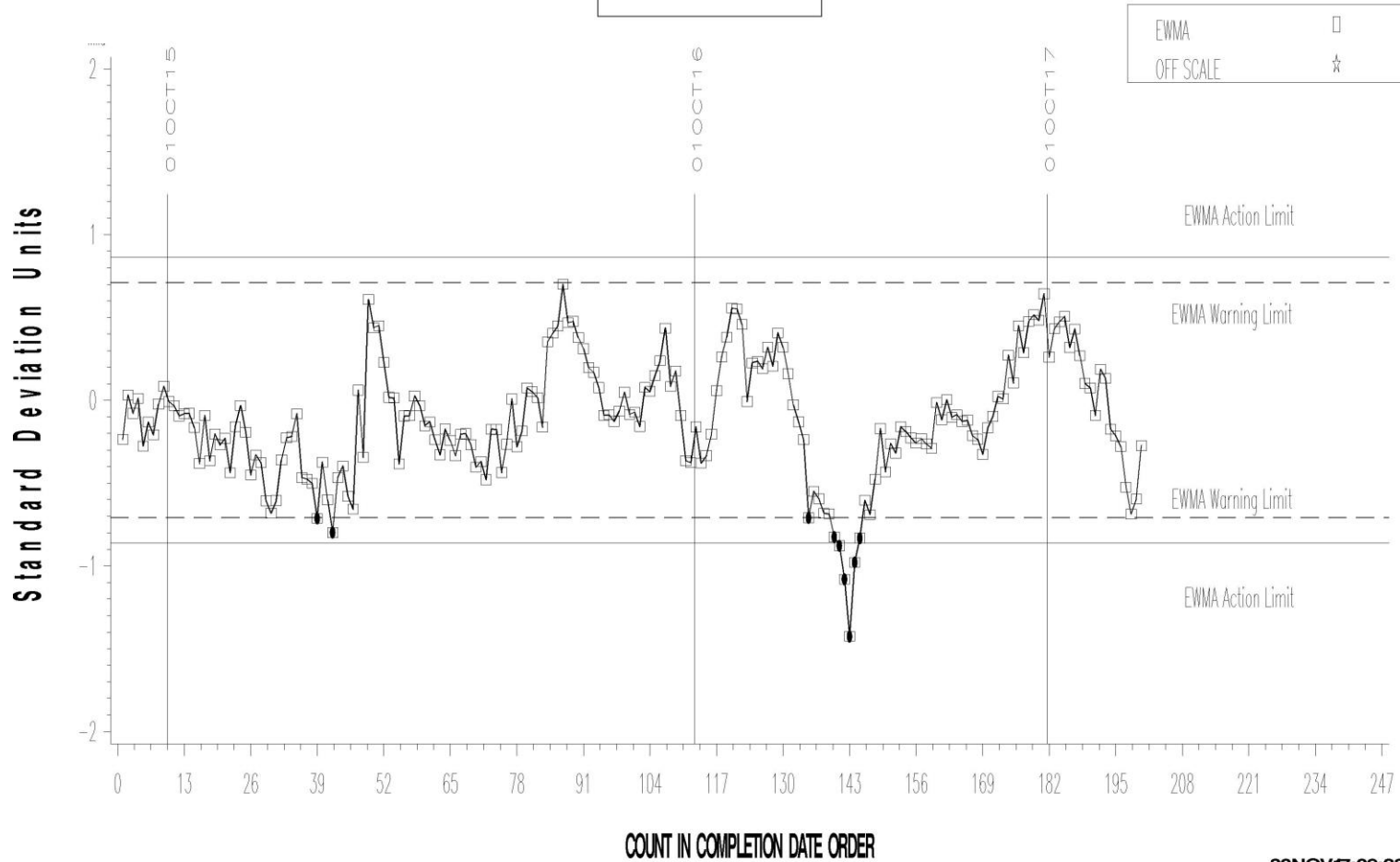


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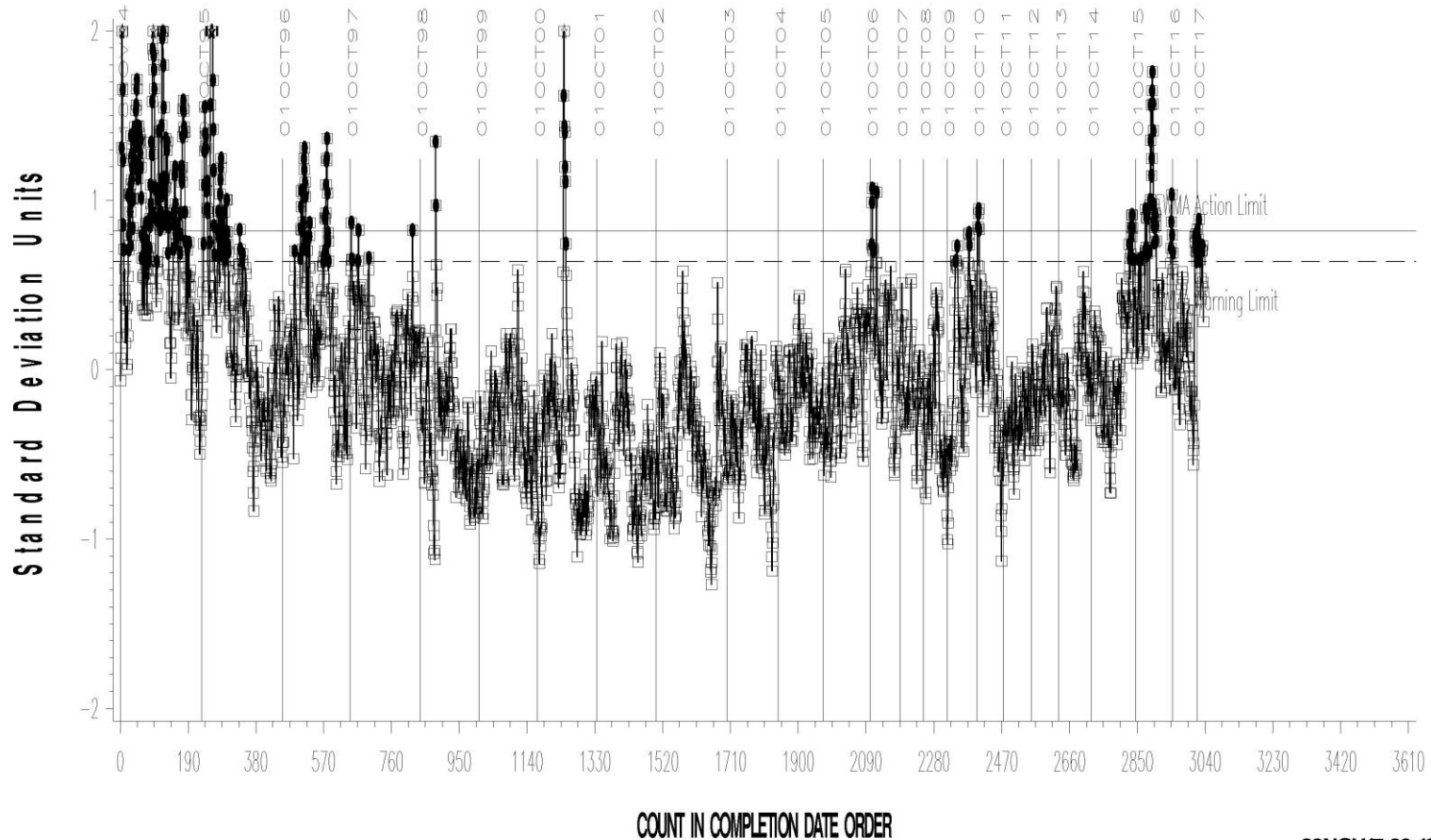
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# OSCT (D5662)

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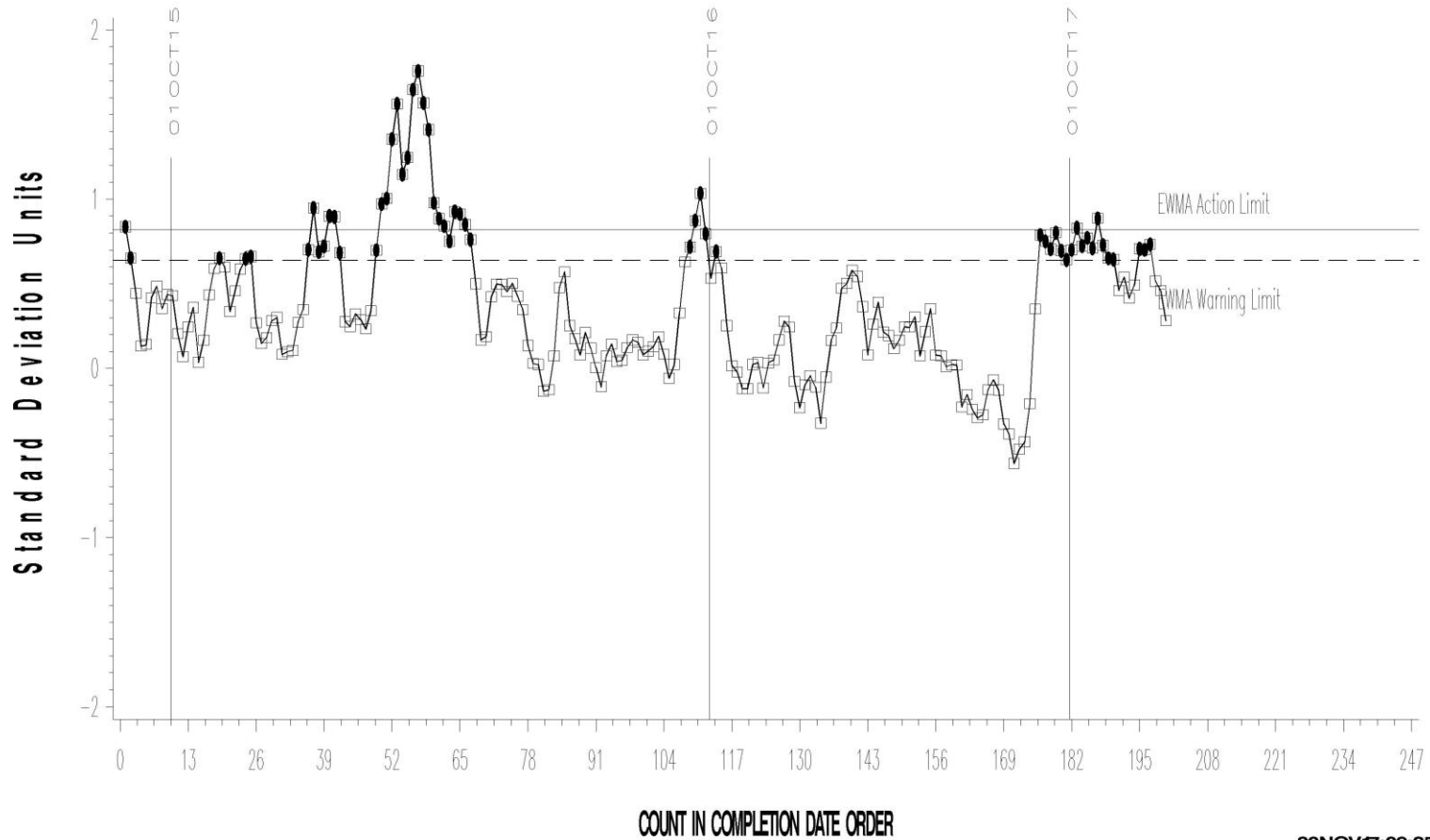


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# OSCT (D5662)

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REF. ELONGATION CHANGE AVG.

LTMS Precision Analysis



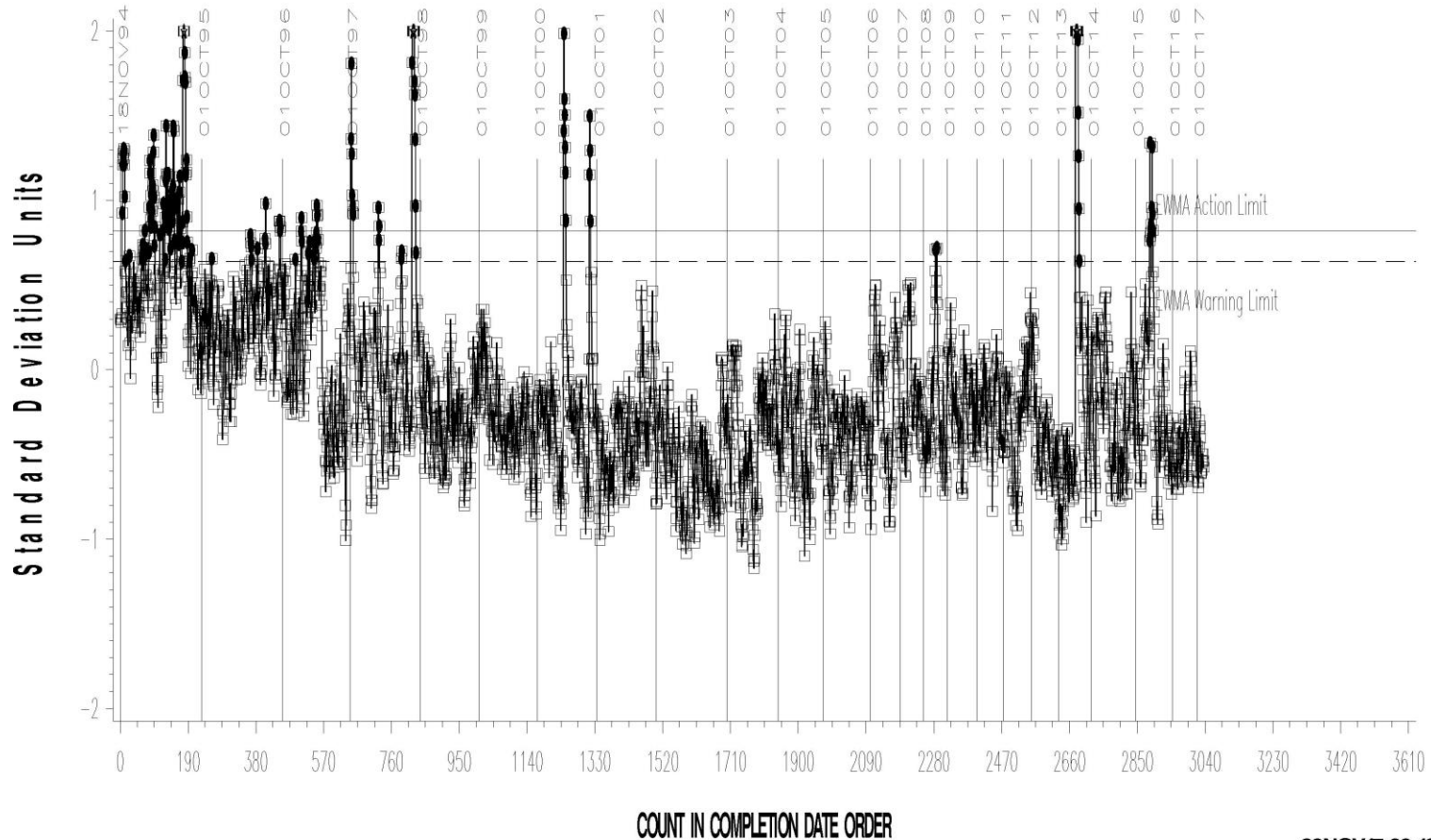
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LTMS Precision Analysis



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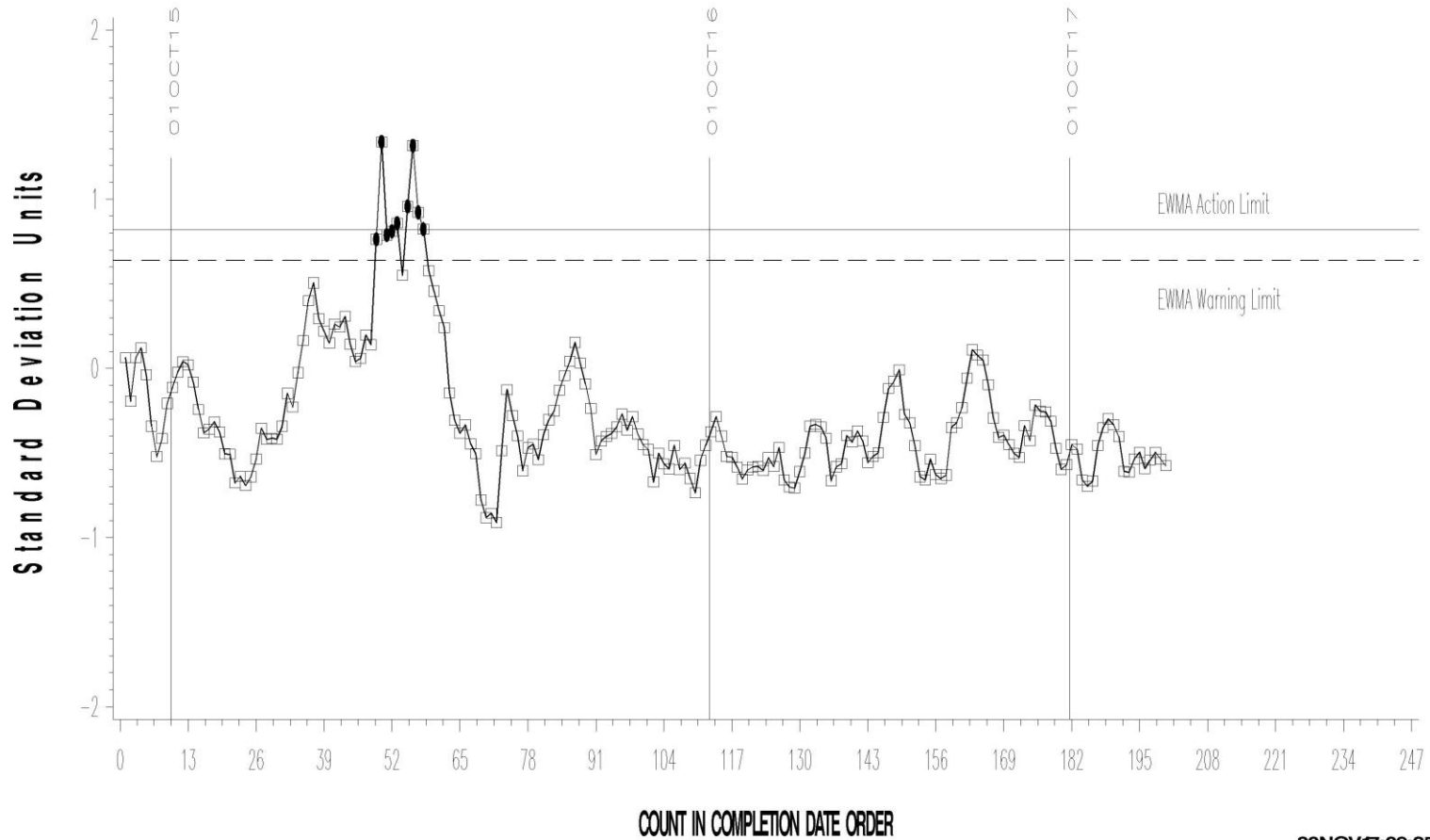


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LTMS Precision Analysis



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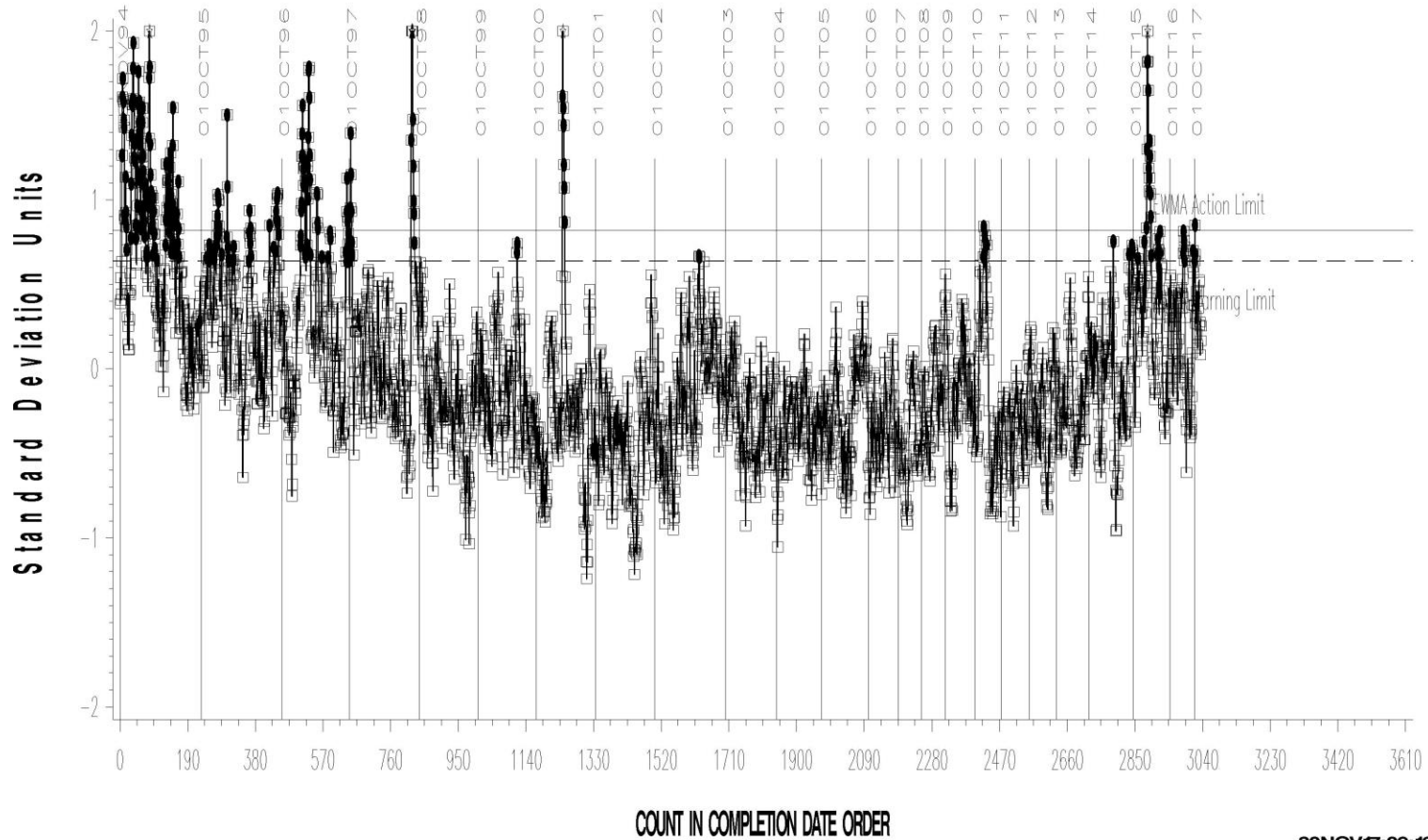


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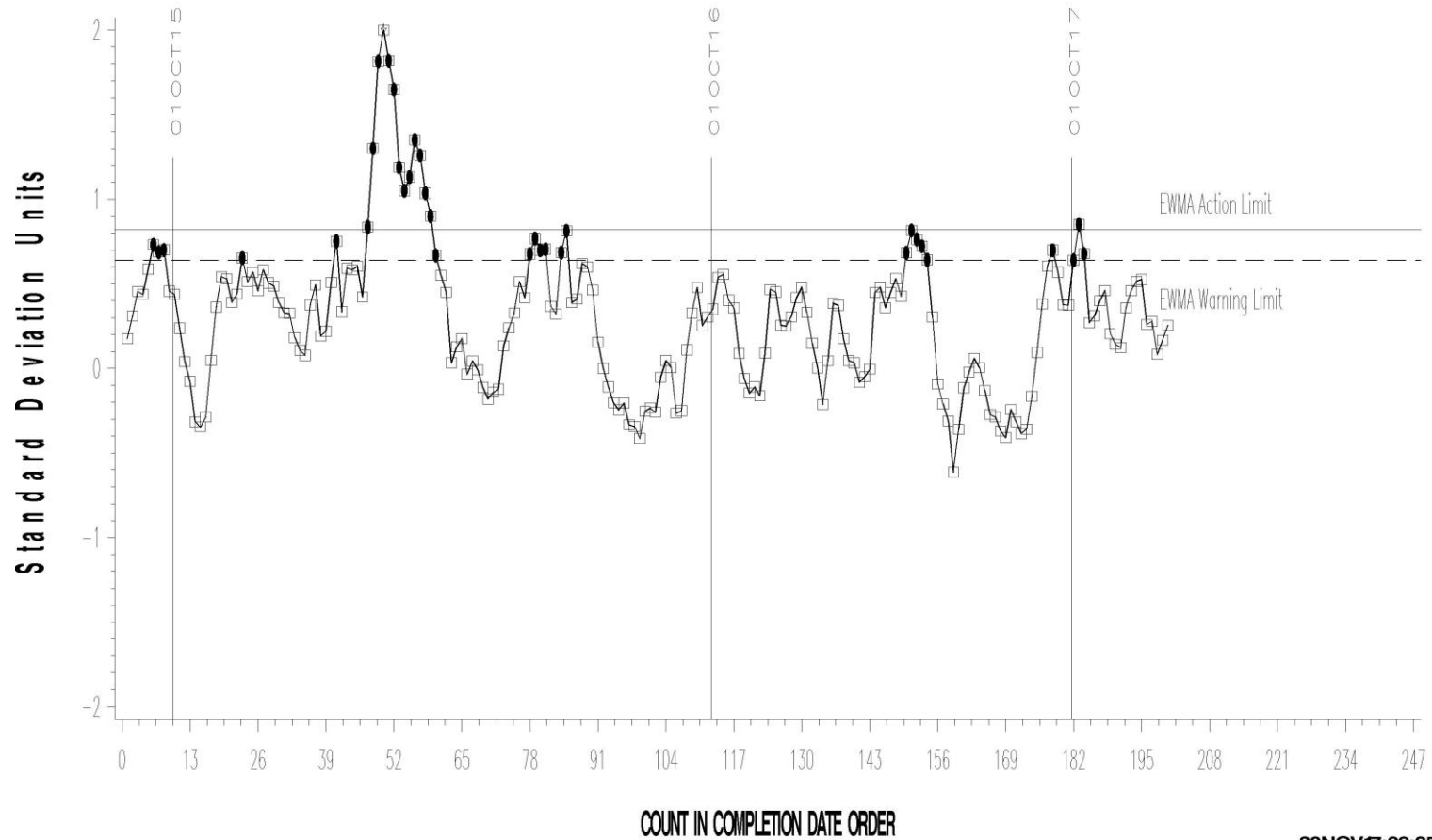


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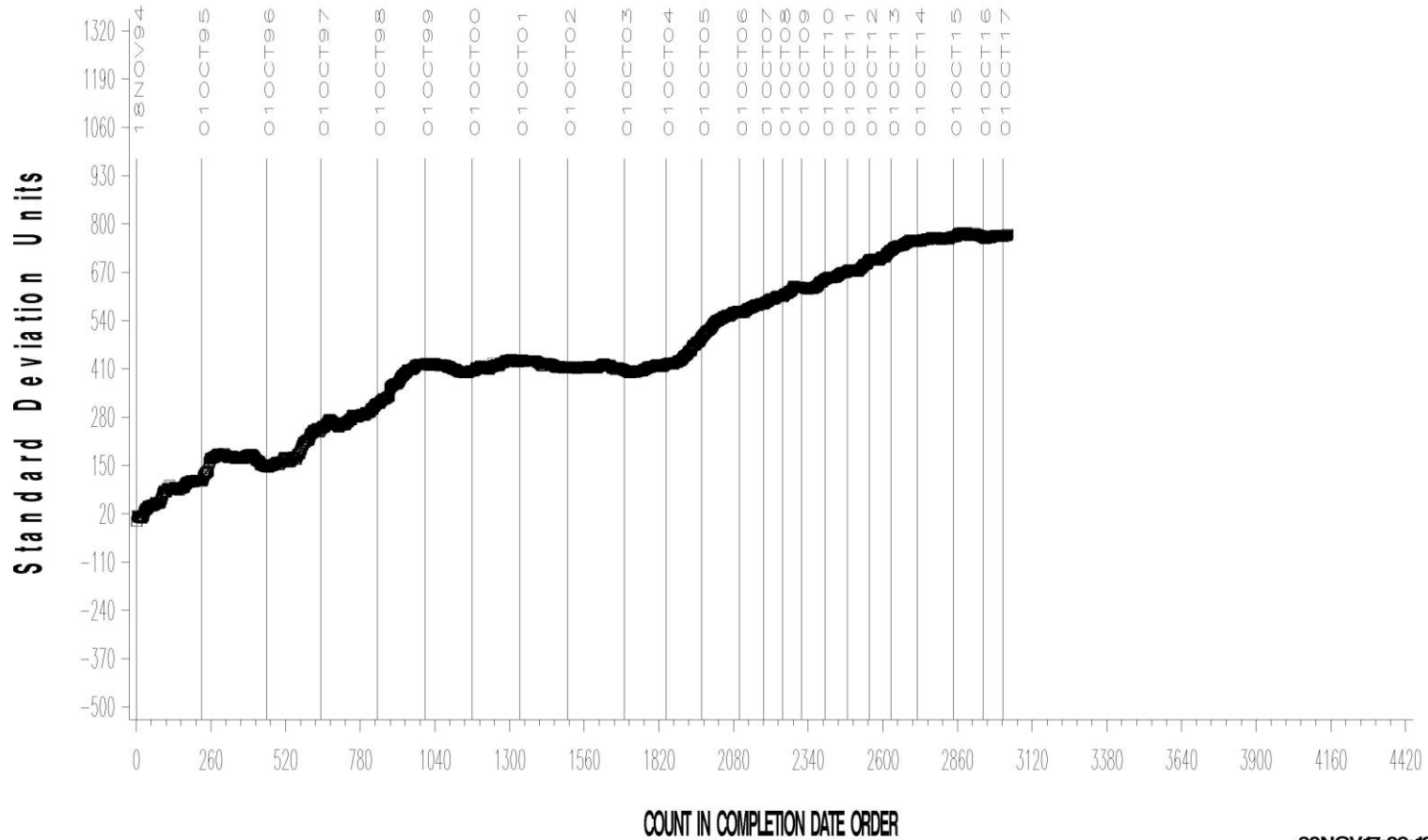
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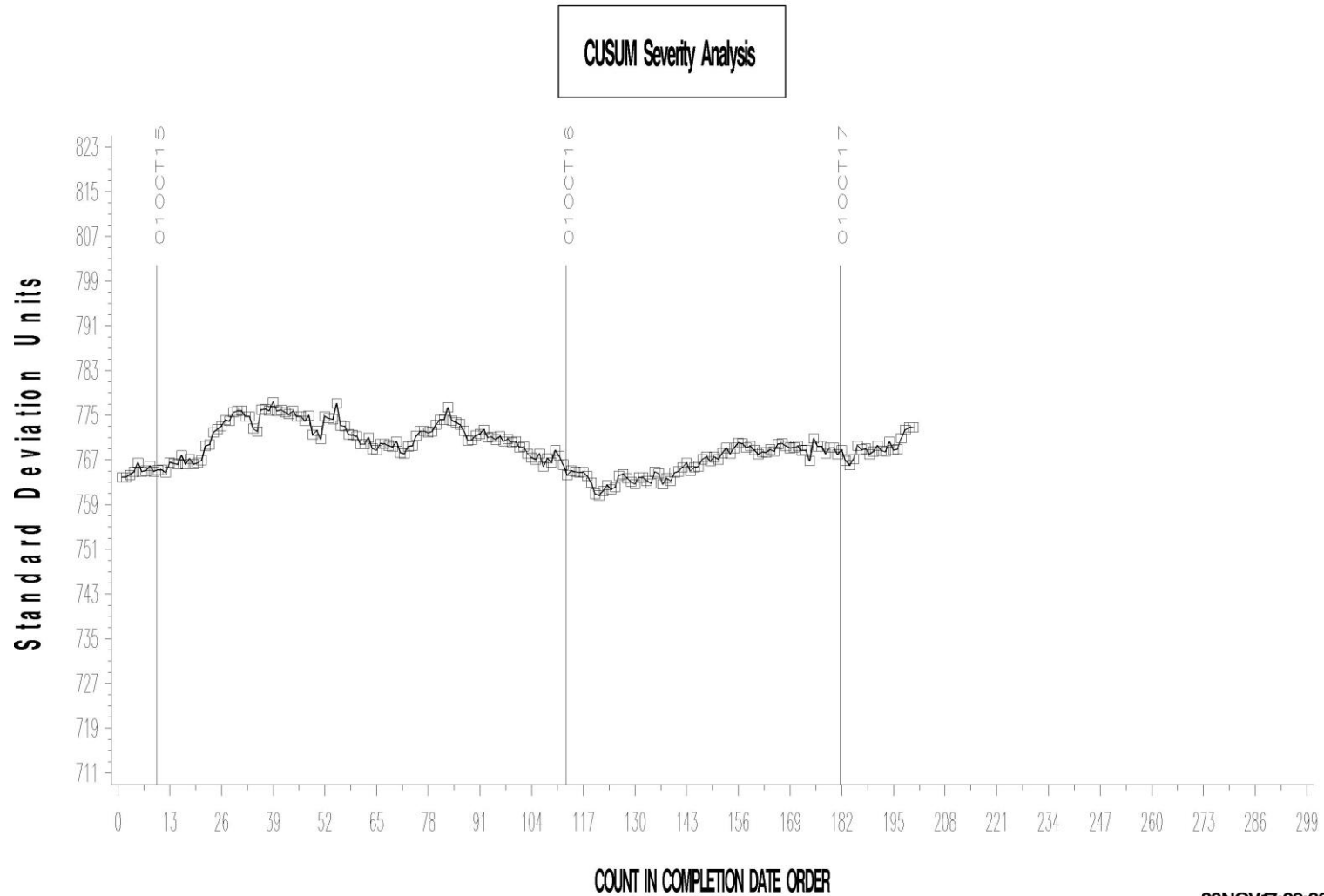
CUSUM Severity Analysis



30NOV17:09:18

# OSCT (D5662)

OSCT INDUSTRY OPERATIONALLY VALID DATA  
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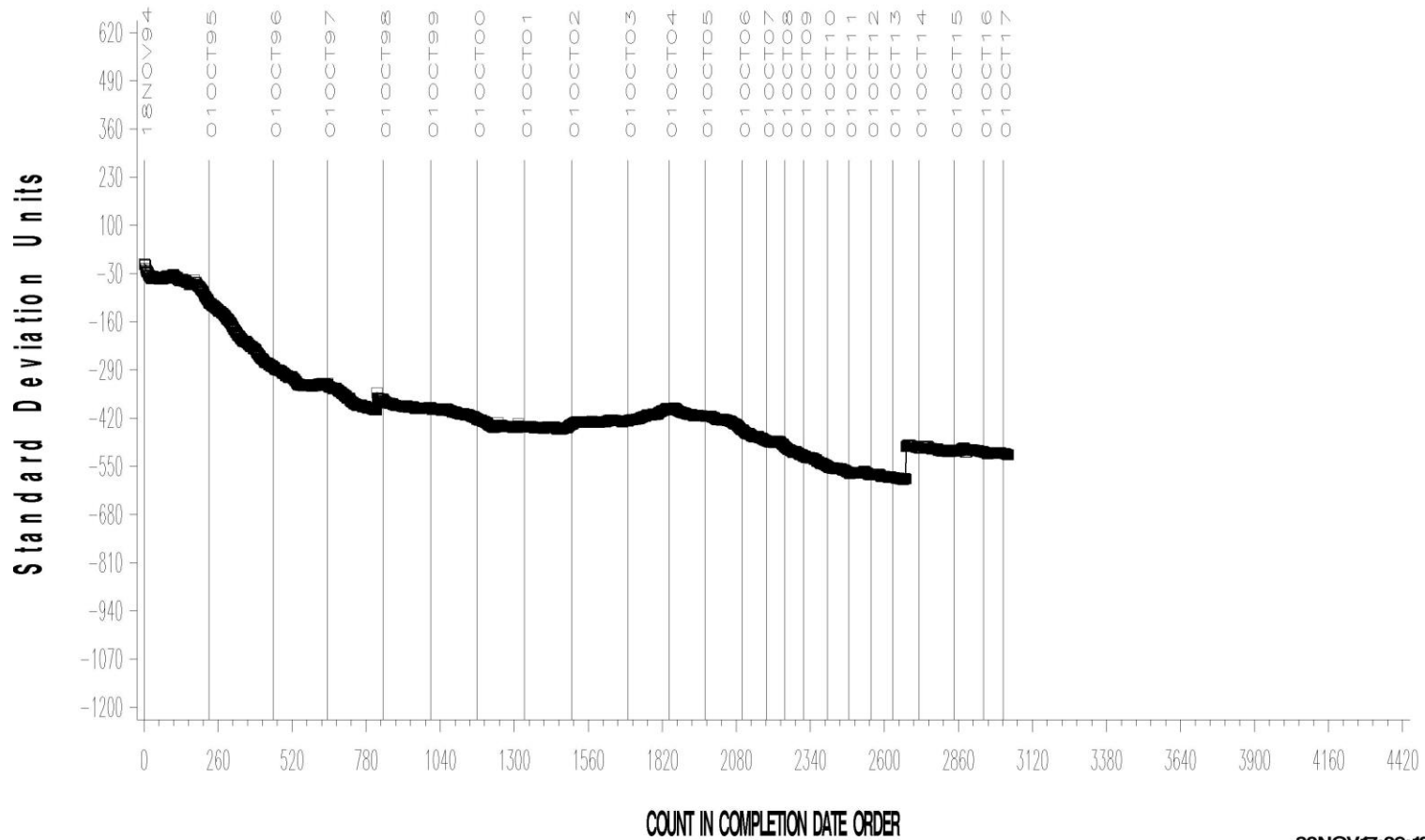
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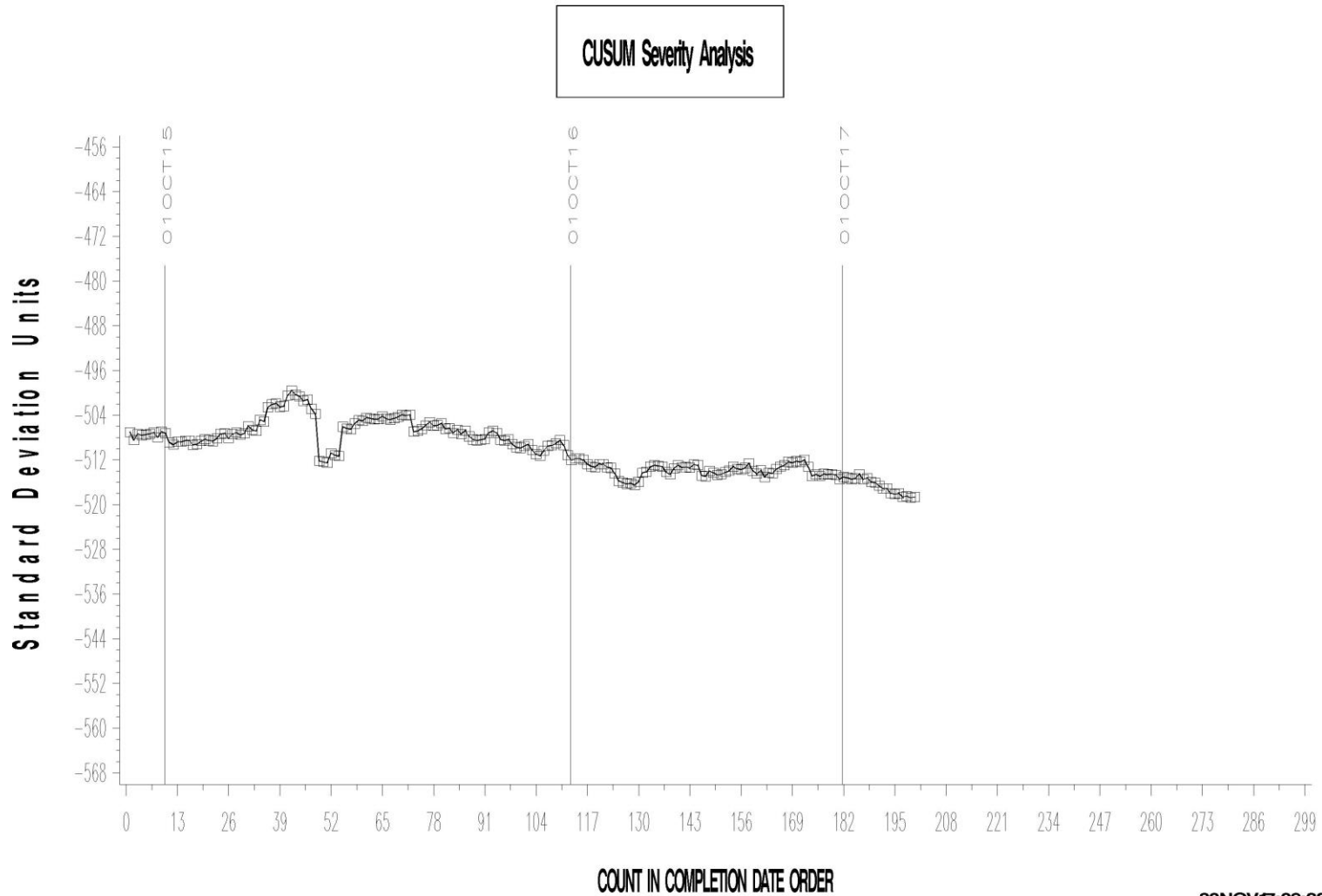
CUSUM Severity Analysis



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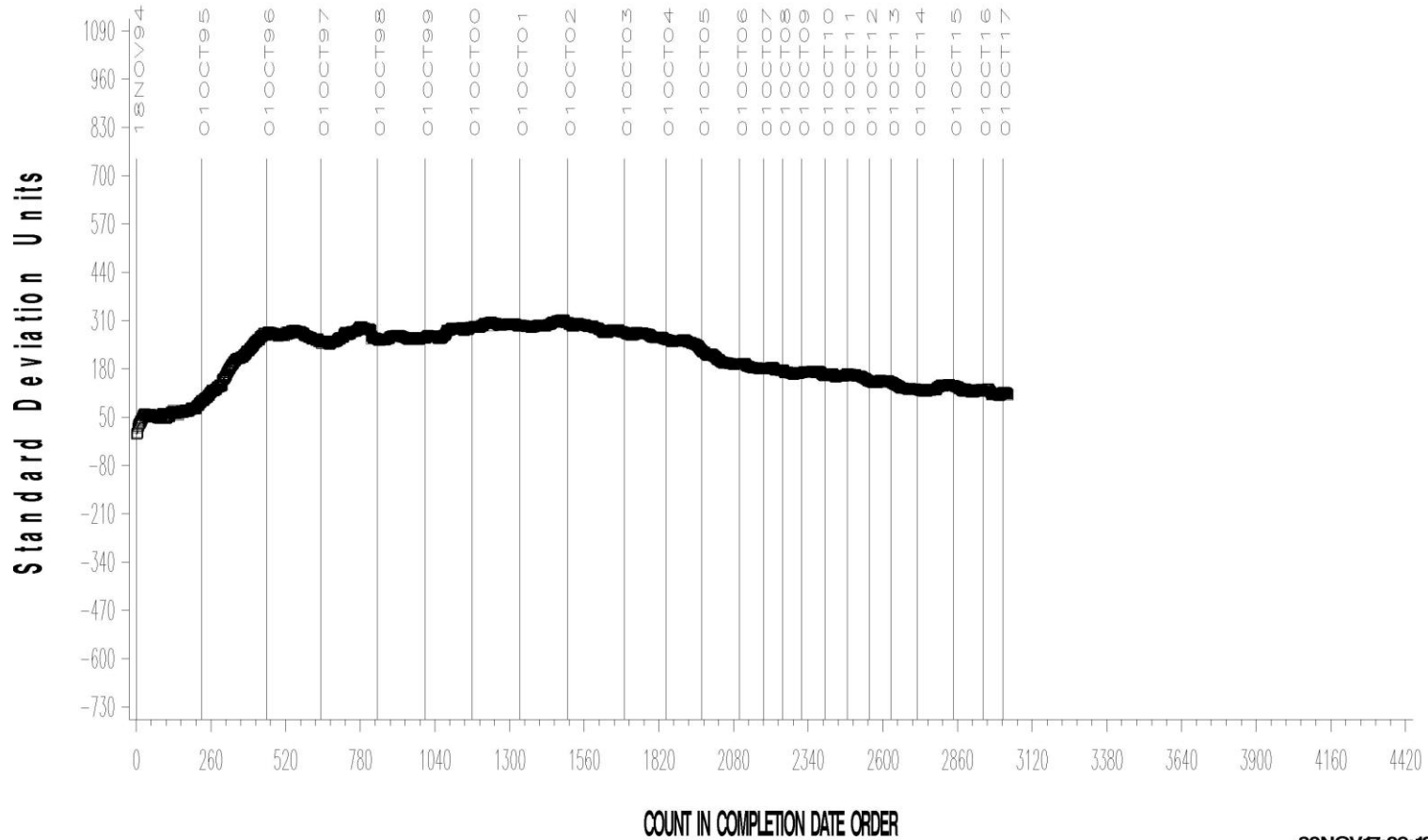
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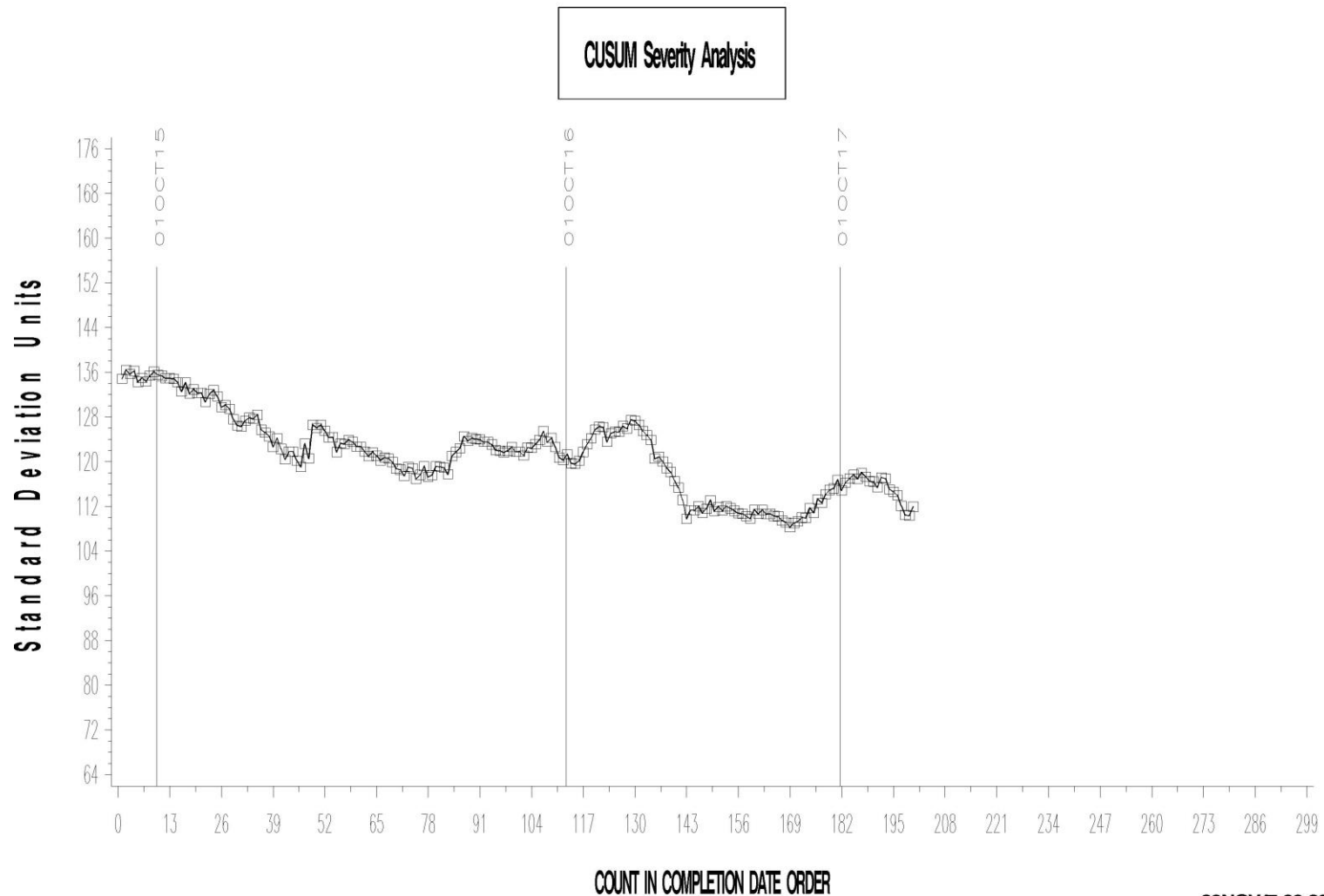
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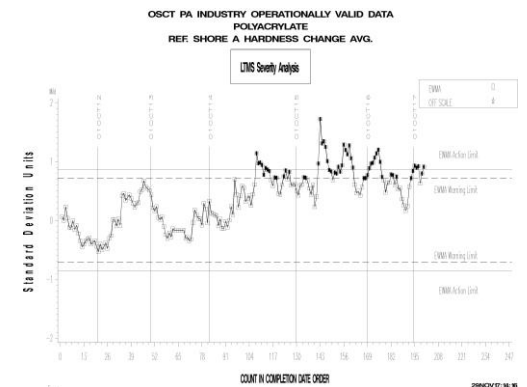
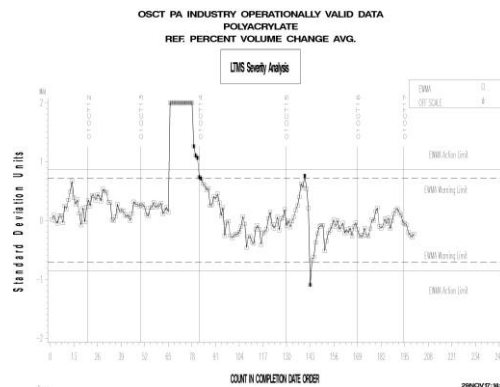
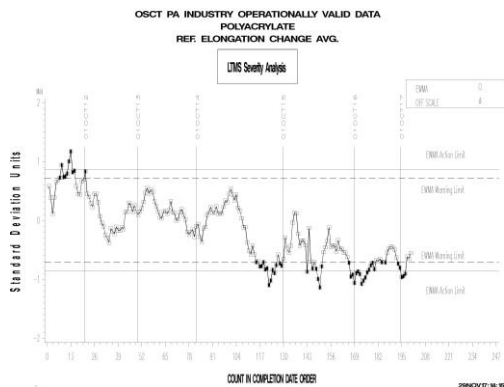
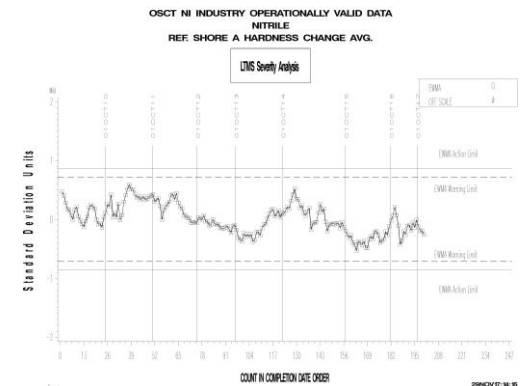
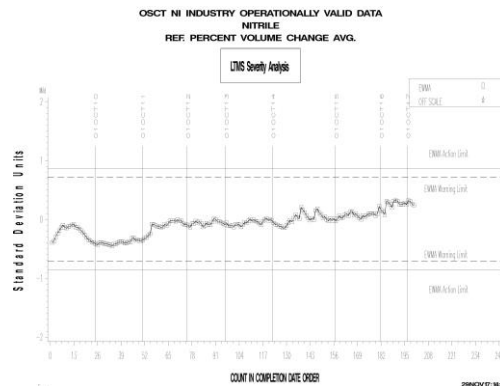
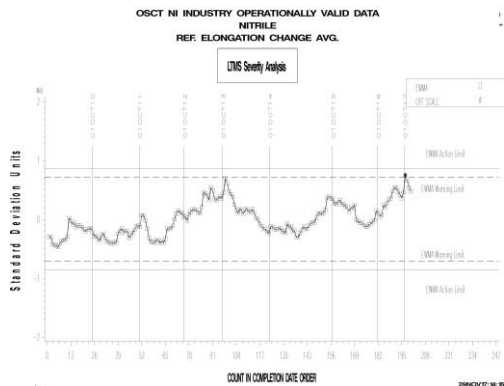
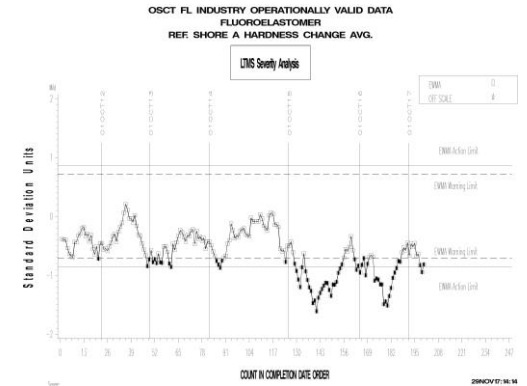
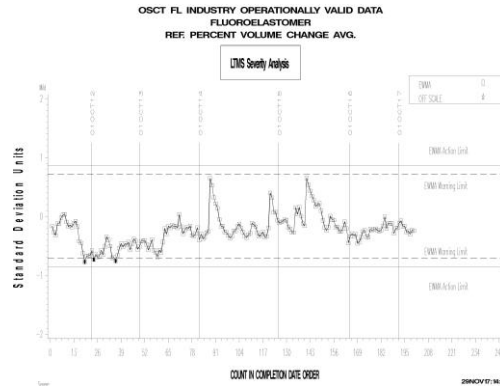
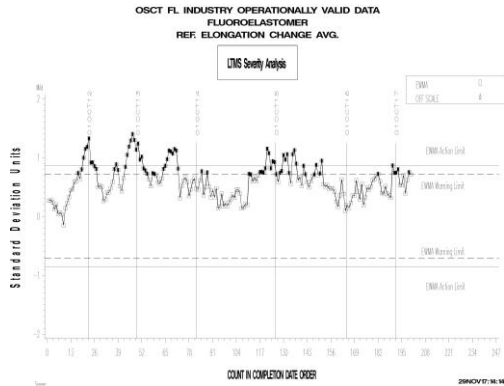


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BY-ELASTOMER SEVERITY

# OSCT (D5662)



# OSCT (D5662)

## TIMELINE ADDITIONS

Effective Date	Information Letter	Event
	None this period	

# OSCT (D5662)

## LAB VISITS

No OSCT lab visits were conducted during this period.

## INFORMATION LETTERS

No information letters were issued this period.

# OSCT (D5662)

## STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
160-1	30	28	5.6
161-1	1	0	0.0
168	14	0	0.0
169	32	1103	180.7
170	18	218	43.3
171	23	243	48.2
Total	118	1592	277.8

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. Oil 170 has been introduced as a replacement. Oil 160-1 is nearly depleted. Oil 171 is the same additive package in a different base oil and will be introduced as a replacement.