



# Test Monitoring Center

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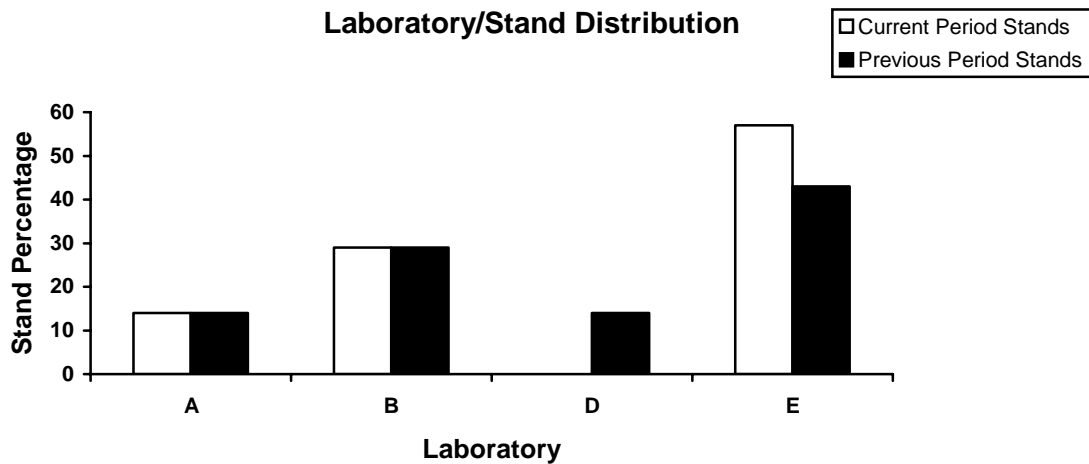
MEMORANDUM: 07-010  
DATE: April 6, 2007  
TO: Dale Smith, Chairman, L-33-1 Surveillance Panel  
FROM: Donald Lind  
SUBJECT: L-33-1 Reference Test Status from October 1, 2006 through March 31, 2007

The following is a summary of the L-33-1 reference oil tests that were reported to the Test Monitoring Center during the period October 1, 2006 through March 31, 2007.

### Lab and Stand Summary

	Reporting Data	Calibrated as of 3/31/07
Number of Laboratories	3	3
Number of Storage Boxes	7	4

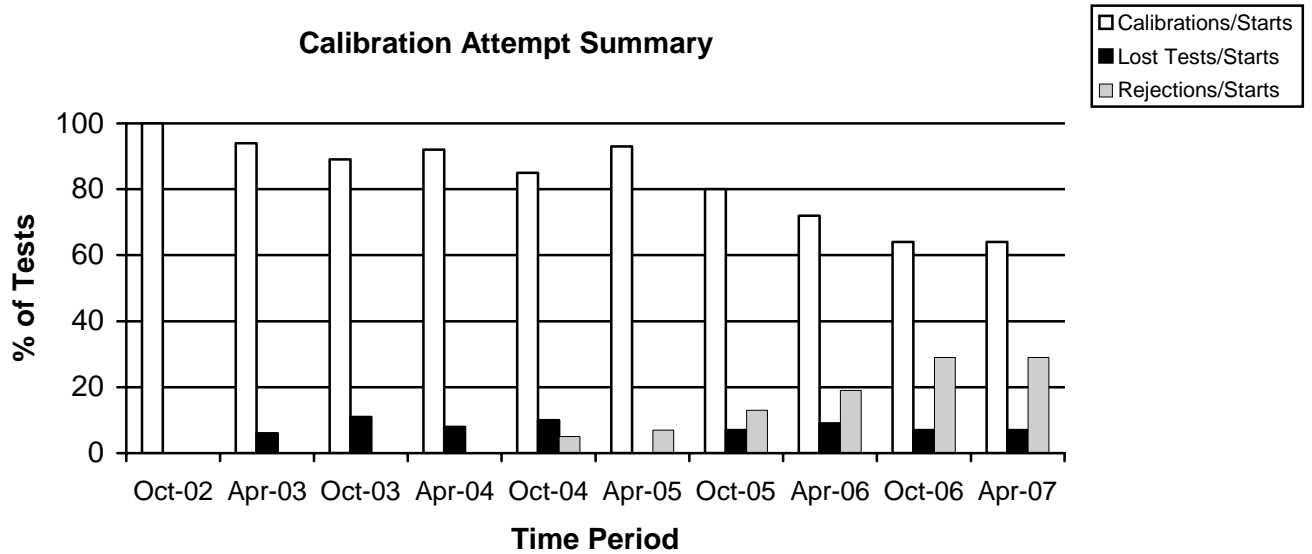
The following chart shows the laboratory/stand distribution:



The following summarizes the status of the reference oil tests reported to the TMC:

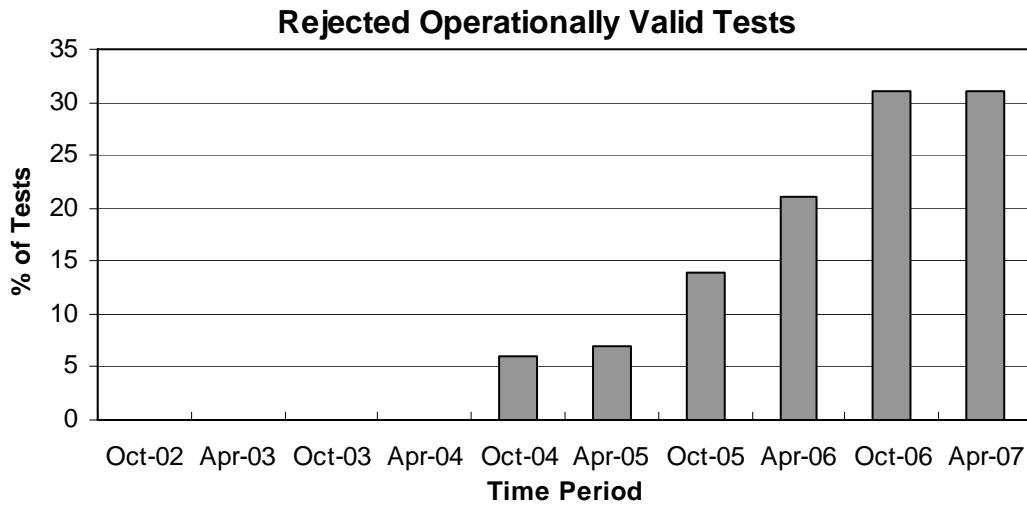
	TMC Validity Codes	No. of Tests
Operationally and Statistically Acceptable	AC	9
Failed Acceptance Criteria	OC	4
Operationally Invalid (Lab Judgement)	LC	1
Operationally Invalid (Lab / TMC Judgement)	RC	0
Aborted	XC	0
<b>Total</b>		<b>14</b>

Calibrations per start, lost tests per start and rejection per start rates are summarized below:

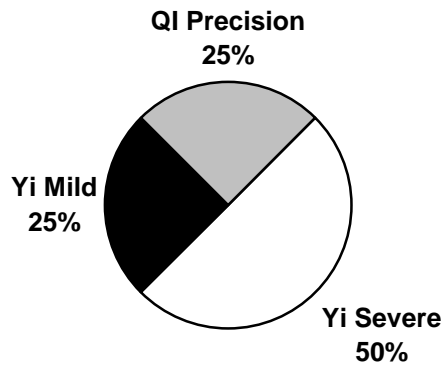


The calibration per start rate ,rejected per start rate, and lost test per start rate have all remained the same when compared to the previous period.

There were four statistically rejected operationally valid tests reported this report period. All four tests were from the same lab (E).

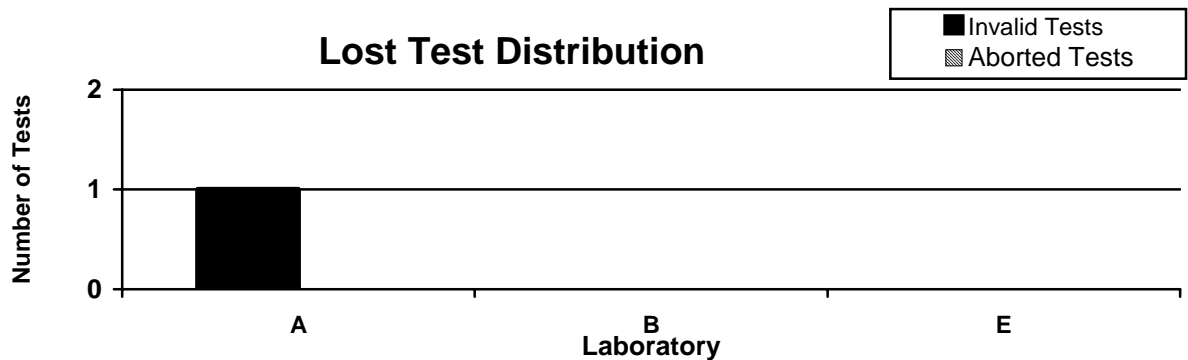


### Distribution of LTMS Stand Alarms



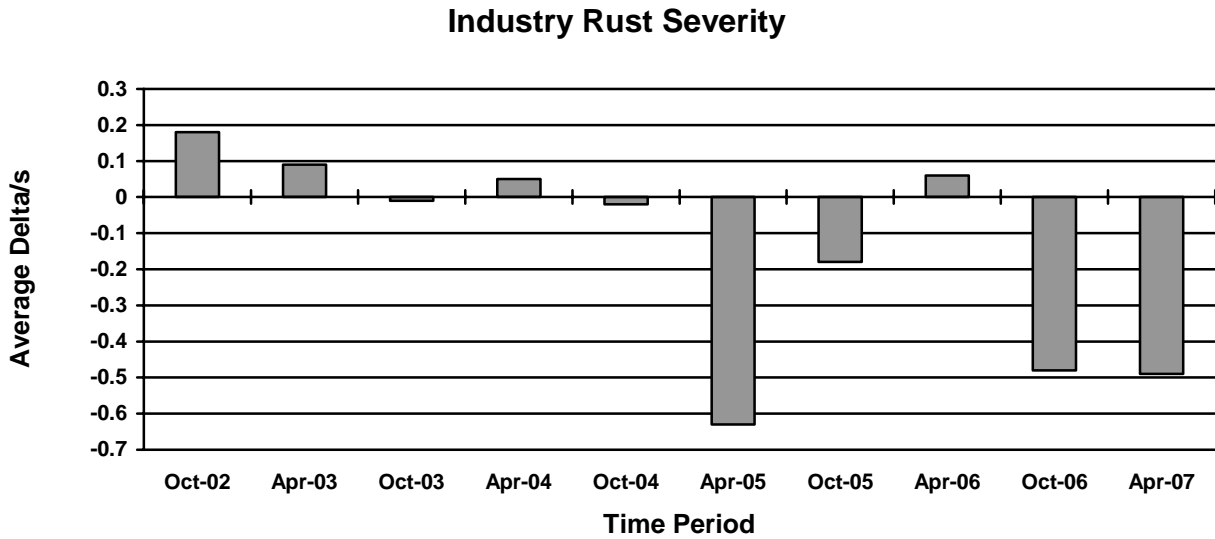
Two tests failed the acceptance criteria severe, one test failed the acceptance criteria mild and one test failed the EWMA precision criteria this report period.

The laboratory distribution of lost tests is shown below. A detailed list of reasons for tests declared operationally invalid or aborted is shown in Table 2.

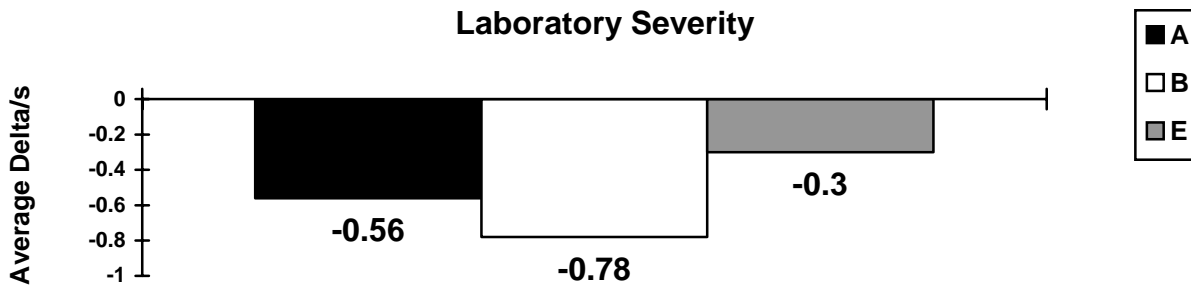


Severity and Precision

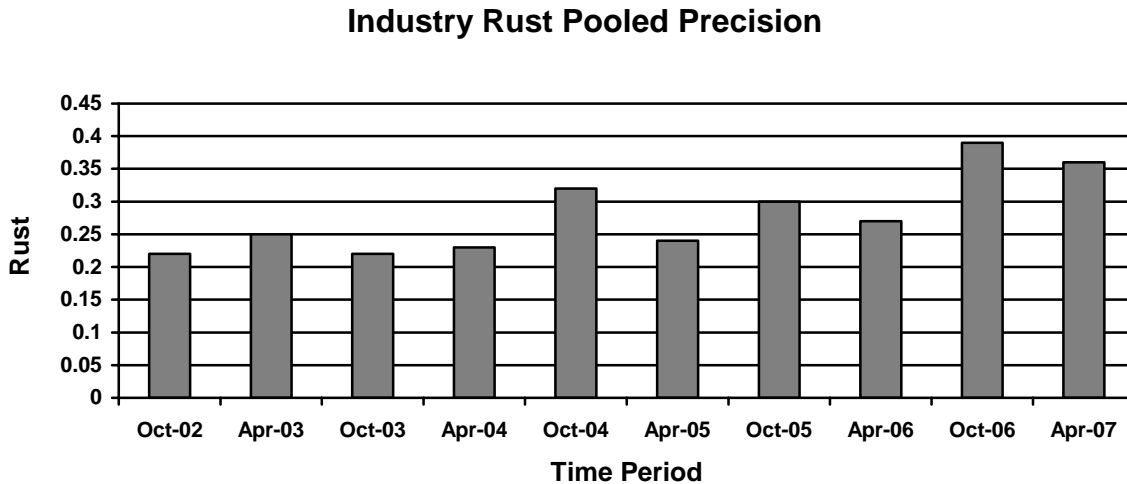
A total of 13 operationally valid test results were reported this period. The mean delta/s for this period is -0.49 severe, which equates to -0.18 merits. All of the 13 operationally valid tests reported this period were conducted on V01.1 hardware. Severity for the 13 operationally valid test results is severe of target as indicated in the chart below and Figure 1.



Shown below is a summary of the average rust  $\Delta/s$  for all laboratories reporting data this report period.



The industry precision estimate for this report period is 0.36 merits (pooled s). Precision this report period has improved compared to previous period as shown below:



### Industry Control Charts

Figure 1 is the Industry EWMA severity and precision charts of tests completed through March 31, 2007. Figure 2 is the Industry EWMA severity and precision charts of the last 30 tests completed through March 31, 2007. There were six industry EWMA severity alarms (two warning and four action), and three industry EWMA precision alarms (two warning and one action) triggered this report period. The alarms do not appear to be related to any one lab, stand, or reference oil.

### TMC Lab Visits

There was one lab visit conducted this report period with no discrepancies to report.

### Information Letters

There were two information letters issued this report period. Information Letter 06-03, Sequence Number 7 was issued on October 9, 2006 and Information Letter 07-01, Sequence Number 8 was issued on March 12, 2007. Items changed with this information letter are documented in the L-33-1 timeline (Table 1).

Reference Oils

The following is a listing of reference oils with the expected number of tests remaining at the Test Monitoring Center and at the testing laboratories. L-33-1 reference oils are shipped in quantities of 1 gallon per test.

Reference Oil	Lab A	Lab B	Lab E	TMC
123	0	0	0	0
123-2	6	5	3	224
151-3	9	9	3	*
155	4	2	4	**

\* 14 Gallons (Multiple test area usage)

\*\* 455 Gallons (Multiple test area usage)

## Attachments

c: L-33-1 Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/gear/1331/semiannualreports/1331-04-2007.pdf>

J. L. Zalar

F. M. Farber

Distribution: Email

**Listing of Tables and Figures Included as Part of This Report to the L-33-1 Surveillance Panel**

Table 1 is the L-33-1 Industry Timeline.

Table 2 Summarizes the Reasons for Lost Tests.

Figure 1 is the Industry Control Chart for L-33-1 Rust.

Figure 2 is the Industry Control Chart of the last 30 test results for L-33-1 Rust.

**Table 1**  
**L-33-1 Industry Timeline**

Effective Date	Topic	Information Letter Number
20030106	New L-33-1 test procedure	02-1
20030507	Revised test unit assembly procedure	03-1
20030507	Revised specification for the abrasive blasting cabinet regulator	03-1
20030507	Revised electric fan motor RPM specification	03-1
20030507	Tests run on non-calibrated stands are deemed non-interpretable tests	03-1
20030507	Revision to light rust definition	03-1
20030507	Editorial changes	03-1
20030916	Addition of bearing replacement guidelines	03-2
20030916	Addition of Dana Bulletin No. 5304-2 for Drive Pinion Shaft Installation	03-2
20040101	Change in cleaning solvent specification	03-2
20050221	Revised Solvent Specification	05-1
20050221	Revised Cover Plate Guide Pin Requirement	05-1
20050221	Updated Test Precision	05-1
20050221	Donated Reference Oil Test Programs/Calibration Period Length Adjustment	05-1
20050221	Revised Footnote 2	05-1
20060207	Axle Cover Rating Template Serialization	06-1
20060721	Housing Cover Gasket Supplier Name and Address Change	06-2
20061009	Aluminum Differential Case, Area 2, Hub Inside Diameter Rating Template	06-3
20061009	Editorial changes	06-3
20070214	Revised Area 1 Rating Surface Description	07-1
20070214	Editorial Changes to Figures A1.8, A1.14, and A1.15	07-1

Table 2  
Lost Tests Summary

Tests declared operationally invalid or aborted are summarized below by laboratory, reason, number of lost tests, and percent of lost tests:

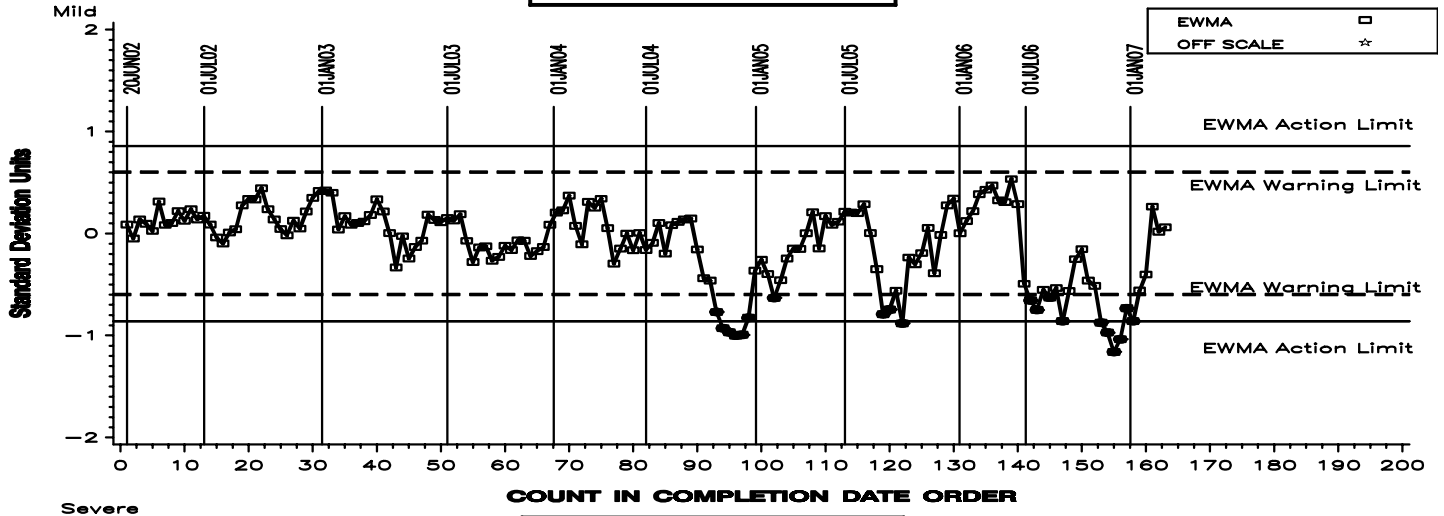
LAB	REASON	Tests Lost	% of Tests Lost
A	Exceeded downtime requirement during the storage phase of the test	1	33%



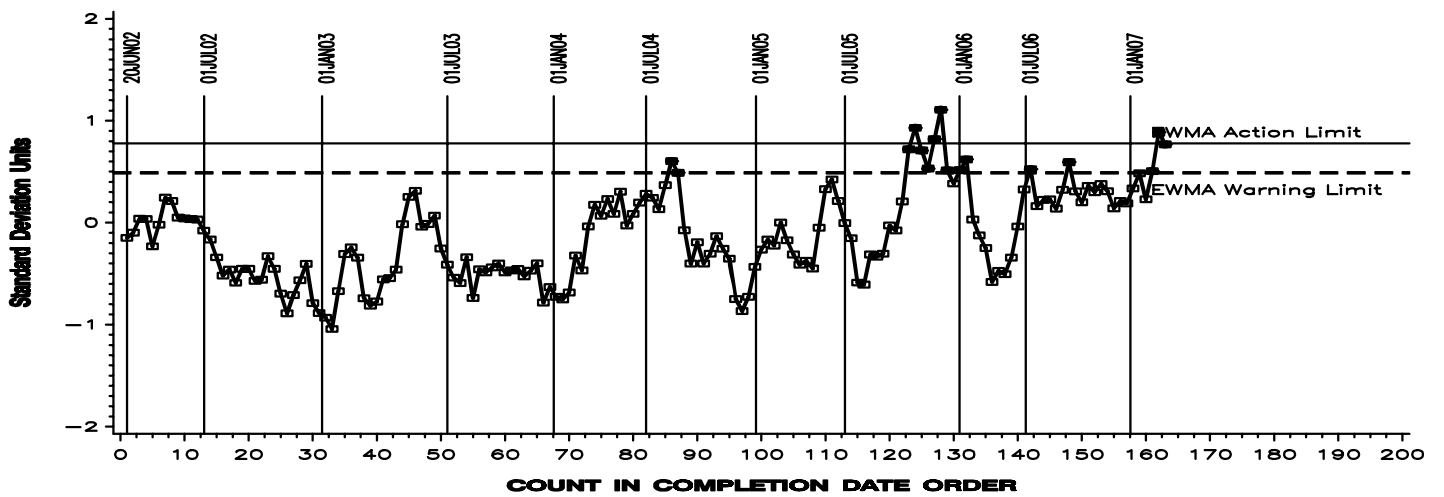
# L-33-1 INDUSTRY OPERATIONALLY VALID DATA

## FINAL RUST RESULT

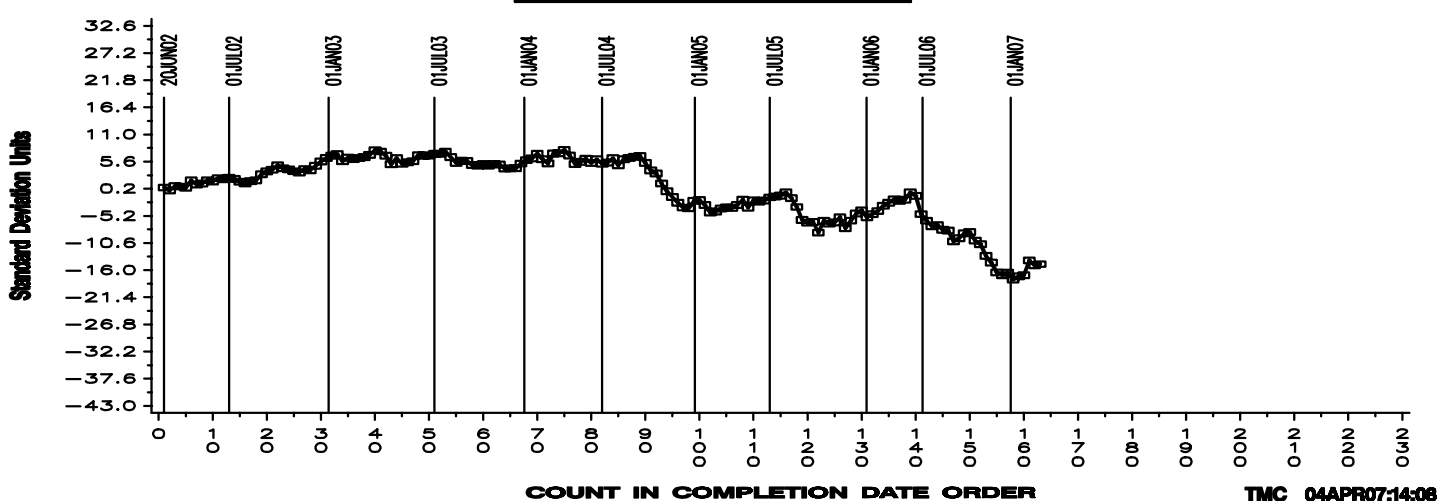
### LTMS Severity Analysis



### LTMS Precision Analysis



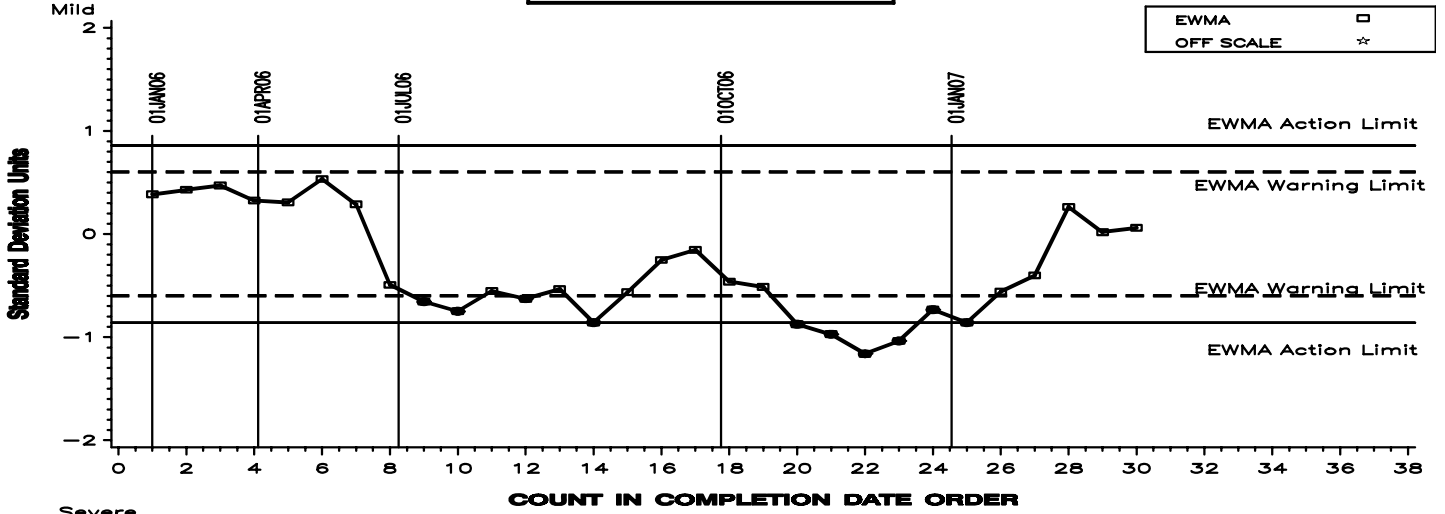
### CUSUM Severity Analysis



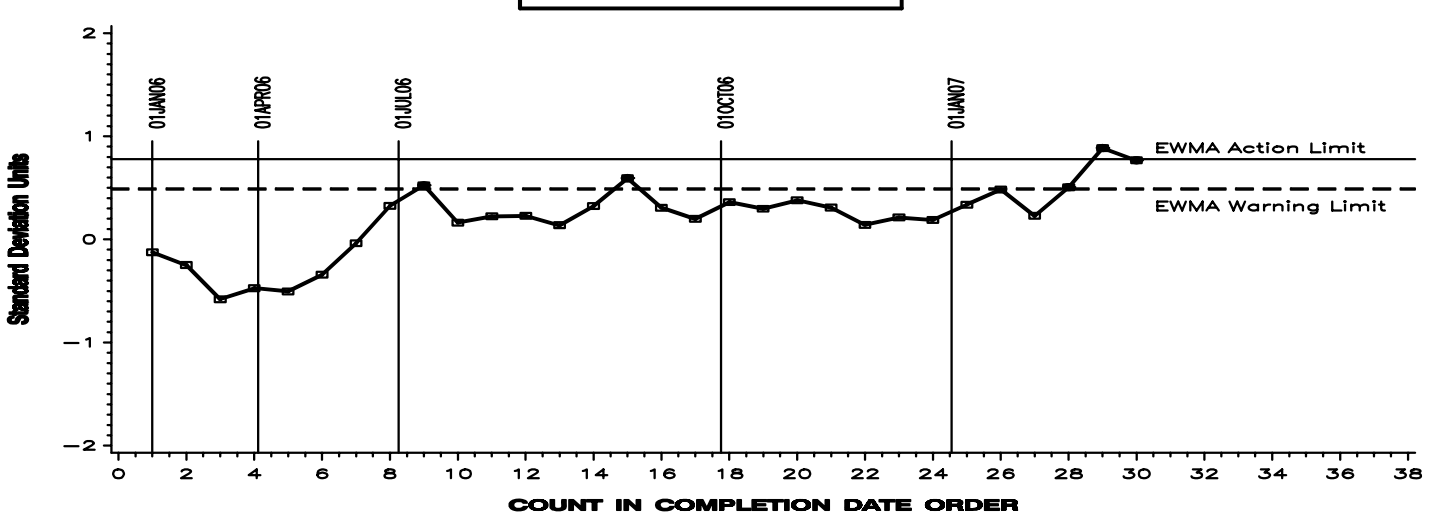
# L-33-1 INDUSTRY OPERATIONALLY VALID DATA

## FINAL RUST RESULT

### LTMS Severity Analysis



### LTMS Precision Analysis



### CUSUM Severity Analysis

