Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 06-073

DATE: October 9, 2006

TO: Brian Koehler, Chairman, High Temperature Cyclic Durability Test Surveillance Panel

FROM: Donald Lind

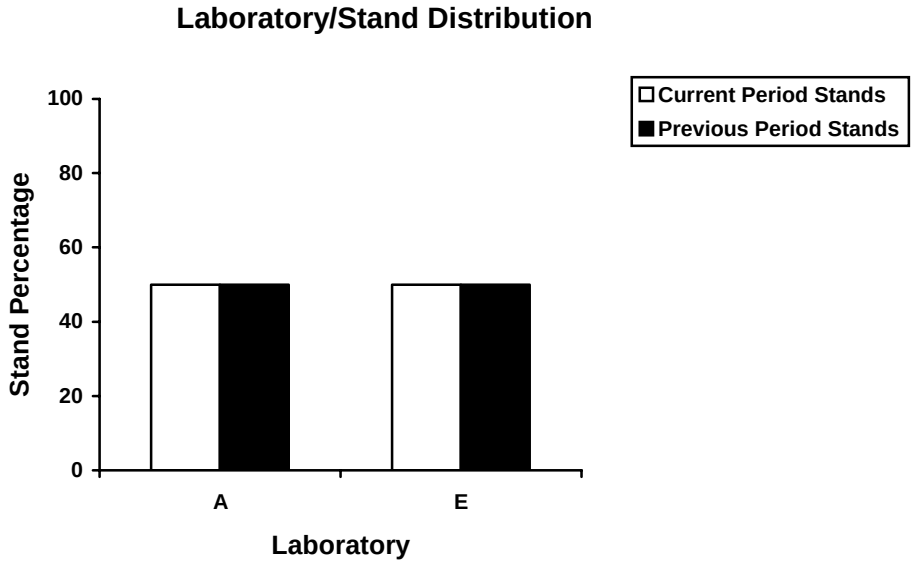
SUBJECT: High Temperature Cyclic Durability Reference Test Status from April 1, 2006 through September 30, 2006

The following is a summary of High Temperature Cyclic Durability reference oil tests that were reported to the Test Monitoring Center during the period April 1, 2006 through September 30, 2006.

Lab/Stand Distribution

	Reporting Data	Calibrated as of 9/30/06
Laboratories	2	2
Stands	2	2

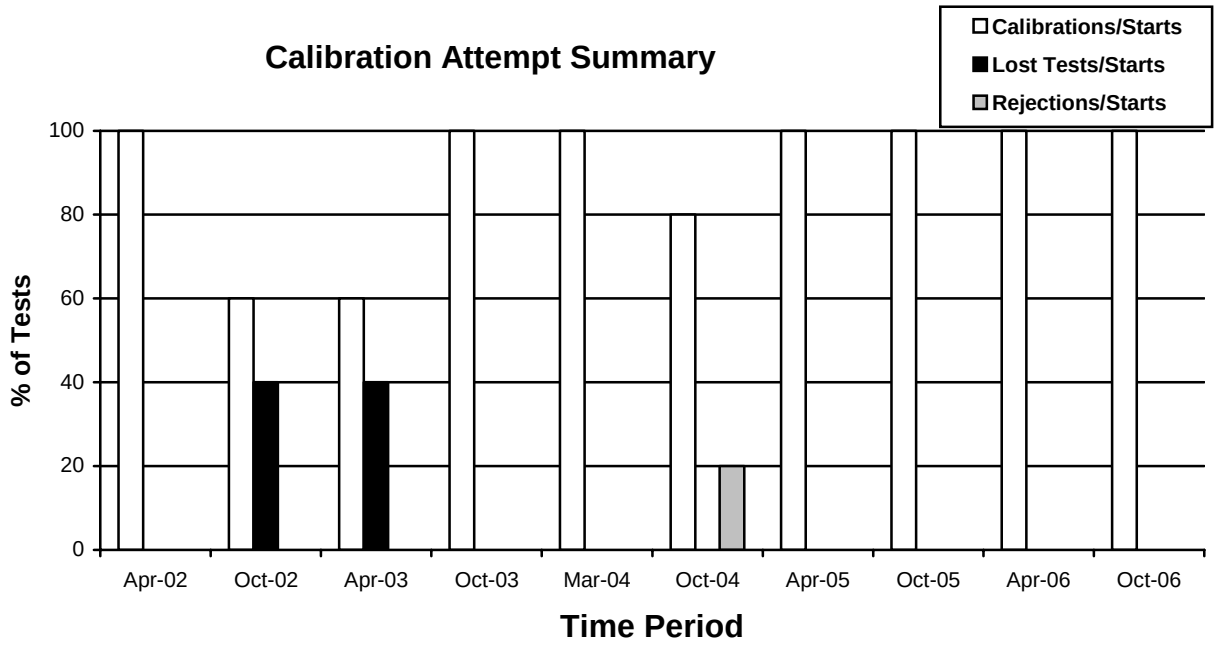
The following chart shows the laboratory/stand distribution:



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	3
Statistically Unacceptable	OC	0
Operationally Invalid, Laboratory Determination	LC	0
Total		3

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



The calibration per start, rejections per start, and lost test per start rates have remained the same with respect to the previous period.

Severity and Precision

Figure 1 is the industry control chart. Figure 2 is the industry control chart of the last 30 test results. There were two EWMA severity warning alarms this report period. The alarms were not related to any one lab or reference oil. There were no EWMA precisions alarms this report period. The average Δ/s for this period is -0.95 severe. The severe trend appears to be related to configuration 2 hardware. This severe trend has been evident since January of 2003. The surveillance panel reviewed the reference oil targets and determined that the targets were developed with a mix of different types of hardware. Since configuration 2 hardware is the only hardware available for testing, the surveillance panel has approved the use of new reference oil test targets using only configuration 2 data. These targets were effective September 11, 2006. Figure 3 illustrates what the industry control charts would look like if the new test targets were in effect since January of 2003.

Information Letters

There were no information letters issued during this report period.

TMC Lab Visits

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

Reference Oil

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. HTCT reference oils are shipped in quantities of 11 gallons per test.

Oil	Volume at TMC (Gallons)	Number of Tests Remaining at TMC	Number of Tests Remaining at Labs	Total Number of Tests Remaining
150-2	114	10	3	13
151-3	0	0	6	6
155	*	*	2	**

* 466 Gallons (Multiple test area usage)

DML/dml

Attachments

c: High Temperature Cyclic Durability Test Surveillance Panel
Frank M. Farber
ftp://ftp.astmtmc.cmu.edu/docs/gear/htct/semiannualreports/htct-10-2006.pdf

Distribution: Email

Listing of Tables and Figures Included as Part of This Report to the High Temperature Cyclic Durability Test Surveillance Panel

Table 1 is the High Temperature Cyclic Durability Test Industry Timeline.

Figure 1 is the Industry control chart for Cycles to Unsynchronized Shifts.

Figure 2 is the Industry control chart of the last 20 results for Cycles to Unsynchronized Shifts.

Figure 3 is the Industry control chart with the new reference oil test targets.

Table 1

	High Temperature Cyclic Durability Industry Timeline	
Effective Date	**Topic**	**IL#**
19960701	Surveillance Panel Approved Acceptance Bands and Targets	
19970324	Forms and Data Dictionary Changes, Version 19970128	97-1
19961210	Change to Allow Replacement of Main Box Shift Rail Cover With Aluminum Plate	97-1
19970918	Replacement of Appendix X1 With Annex A5 (Editorial Changes)	97-2
19971110	Revision to Coast Down Time Measurement	97-3
19980209	Revisions to Shift Time Definition and Inclusion of Shift Time Plot	98-1
19980215	First Test on New Synchronizer Assembly (Part Number 320KB459)	
19980626	Defined Acceptable Hardware Configurations. Revised Report Forms and Data Dictionary to Document Hardware Configuration Utilized.	98-2
19990413	Clarified the Calibration Period, Allows Non-reference Oil Tests to Start Up to and Including the Last Day of the Calibration Period.	99-1
19990625	Redefined Acceptable Hardware Configurations.	99-2
20000613	Required the Use of Wellman Single Batch Friction Plates for Tests Starting On or After 6/13/00	00-1
20020920	Failing Reference Oil Run Requirement	02-1
20020920	Test Hardware Correction and Revisions	02-1
20030916	Report Forms and Data Dictionary	03-1
20040101	Cleaning Solvent Specification	03-1
20041203	One Quart Test Oil EOT Save Requirement Dropped	04-1
20050221	Revised Solvent Specification	05-1
20050504	Surveillance Panel Use of Donated Reference Oil Test Programs	05-2
20050504	Guidelines for Shortening or Lengthening Reference Oil Calibration Periods	05-2
20050504	Updated Test Precision	05-2
20050504	Rounding Test Results Using ASTM E 29	05-2
20050504	Piston, High Low Range Shift Outside Diameter Specification	05-2
20050504	Test Sponsor Company Name Change	05-2

Figure 1

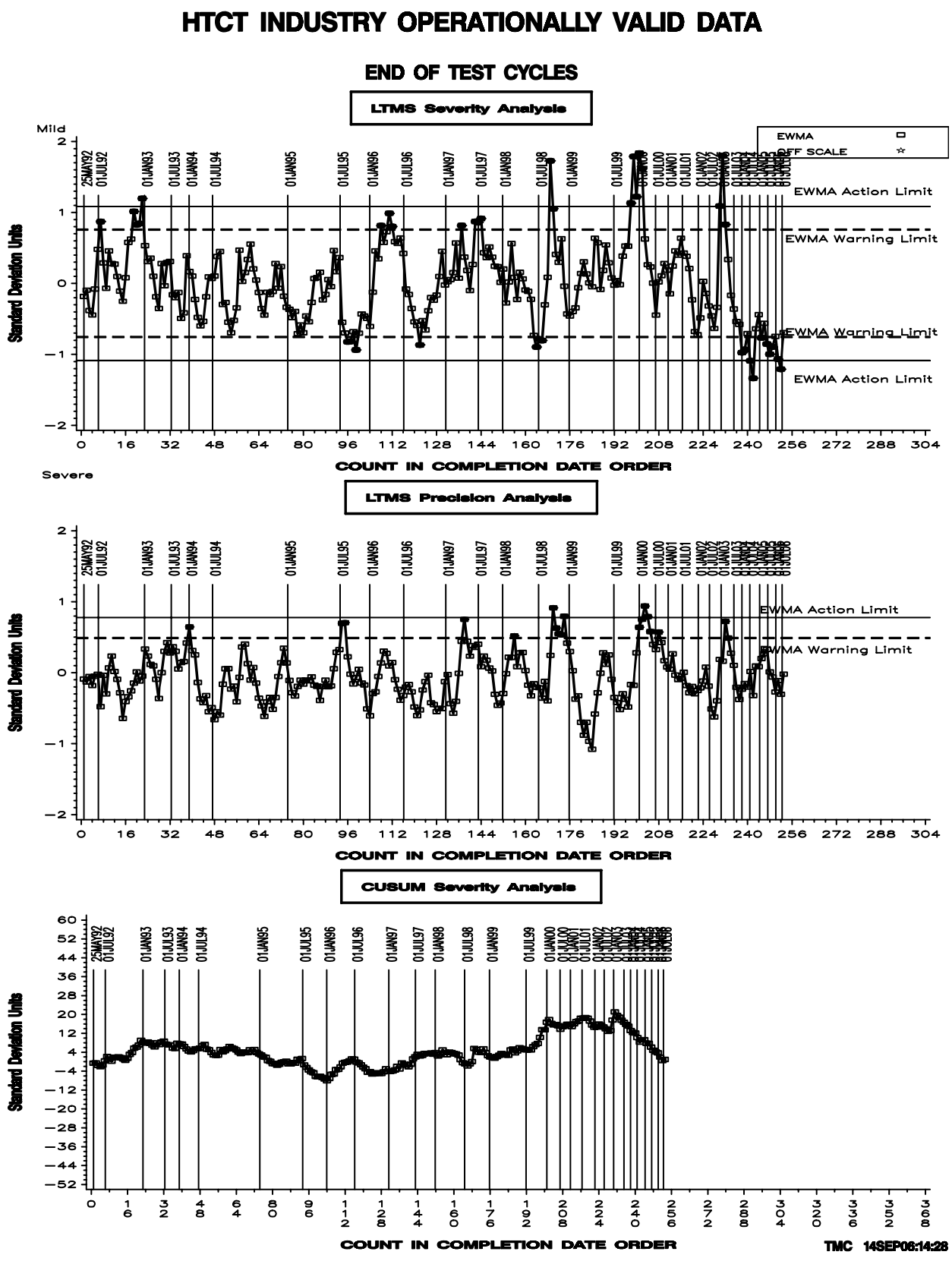
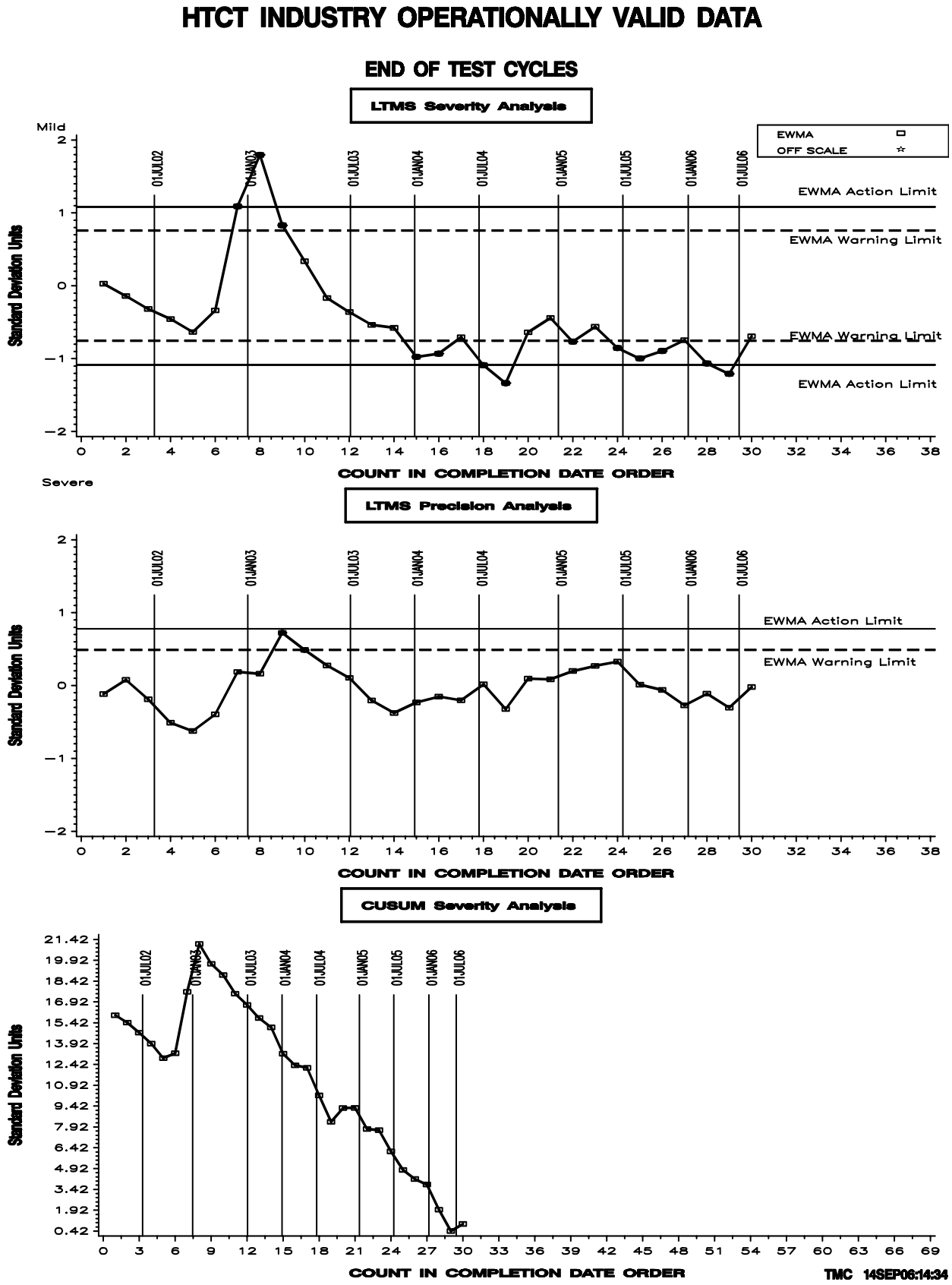
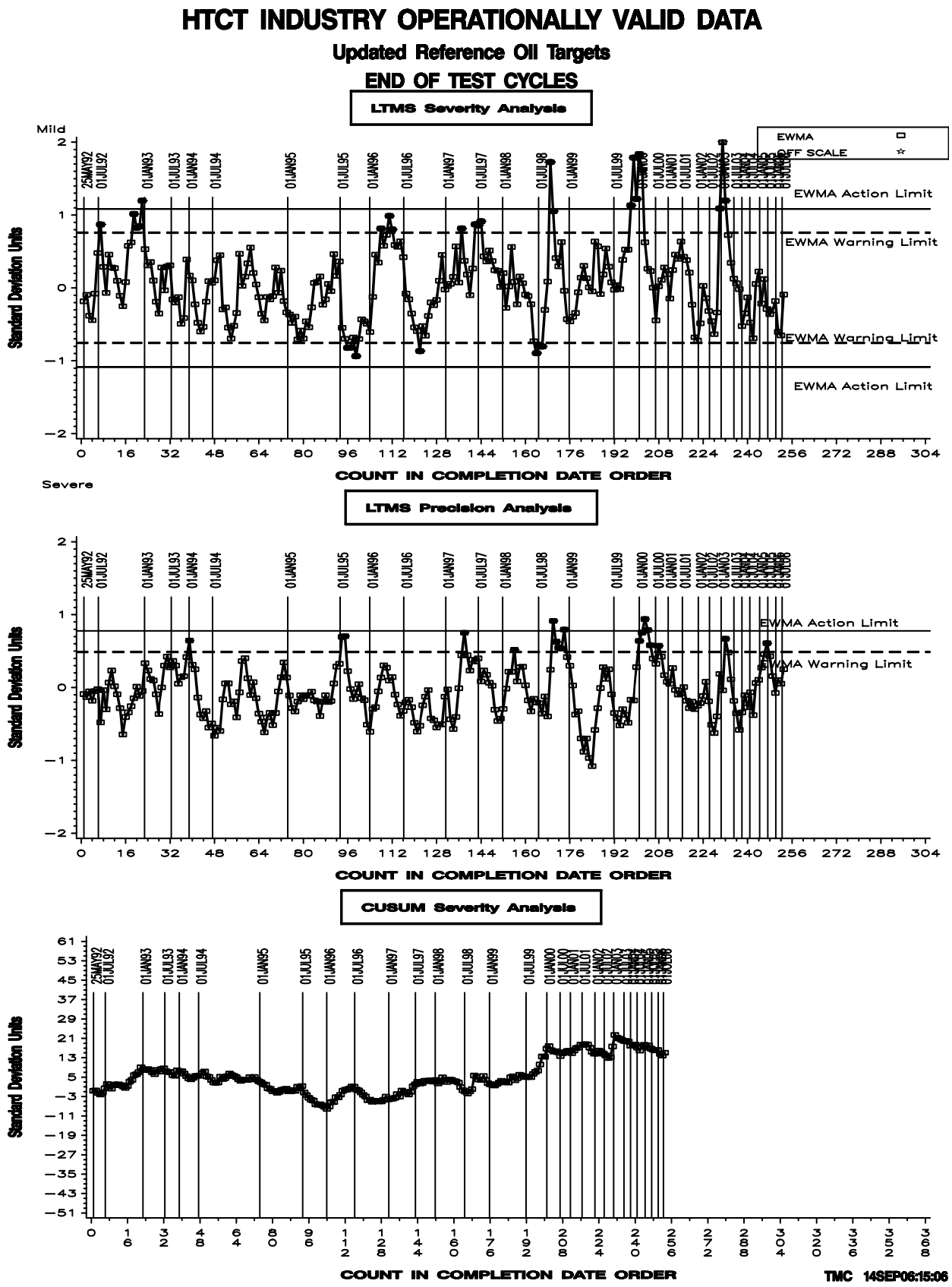

HTCT INDUSTRY OPERATIONALLY VALID DATA
END OF TEST CYCLES
LTMS Severity Analysis
Mild
Severe
EWMA
OFF SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
EWMA Action Limit
EWMA Warning Limit
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
CUSUM Severity Analysis
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
TMC 14SEP06:14:28

Figure 2


HTCT INDUSTRY OPERATIONALLY VALID DATA
END OF TEST CYCLES
LTMS Severity Analysis
Mild
Severe
EWMA
OFF SCALE
EWMA Action Limit
EWMA Warning Limit
EWMA Warning Limit
EWMA Action Limit
01JUL02
01JAN03
01JUL03
01JAN04
01JUL04
01JAN05
01JUL05
01JAN06
01JUL06
Standard Deviation Units
COUNT IN COMPLETION DATE ORDER
LTMS Precision Analysis
EWMA Action Limit
EWMA Warning Limit
CUSUM Severity Analysis
TMC 14SEP06:14:34


HTCT INDUSTRY OPERATIONALLY VALID DATA
Updated Reference Oil Targets
END OF TEST CYCLES
LTMS Severity Analysis
Mild
Standard Deviation Units
EWMA
OFF 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
TMC 14SEP06:15:06