



MEMORANDUM: 19-016
DATE: April 22, 2019
TO: Eric Donovan, Chairman, L-42 Surveillance Panel
FROM: Dylan Beck *DJB Bego*
SUBJECT: L-42 Reference Oil Testing from October 1, 2018 through March 31, 2019

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

DJB/djb/mem19-016.djb.doc

cc: Frank Farber

Jeff Clark

L-42 Surveillance Panel

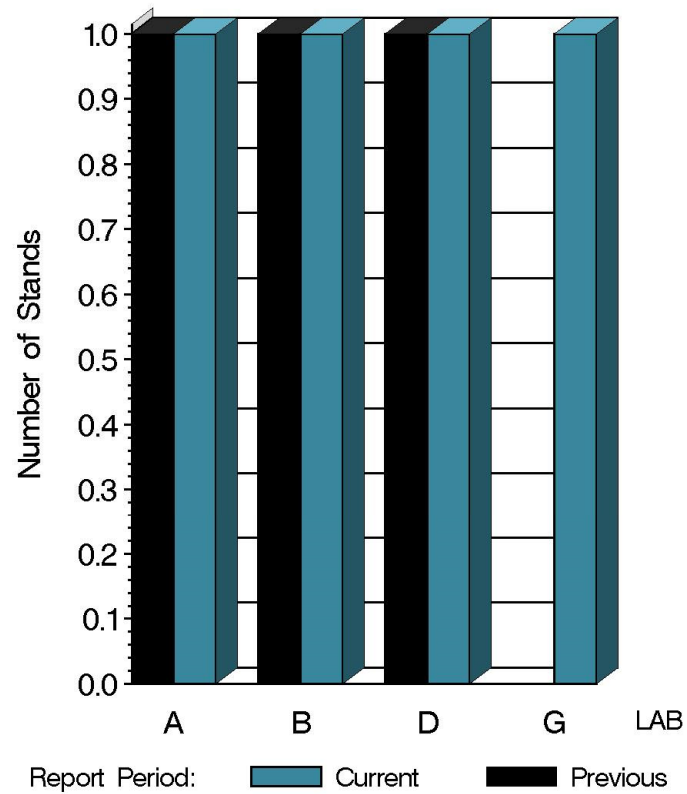
<http://www.astmtmc.cmu.edu/ftp/docs/gear/142/semiannualreports/142-04-2019.pdf>

Distribution: email

L-42 (D7452)

	Reporting Data	Calibrated on 3-31-19
Number of Labs	4	4
Number of Stands	4	4

BY-LAB STAND DISTRIBUTION



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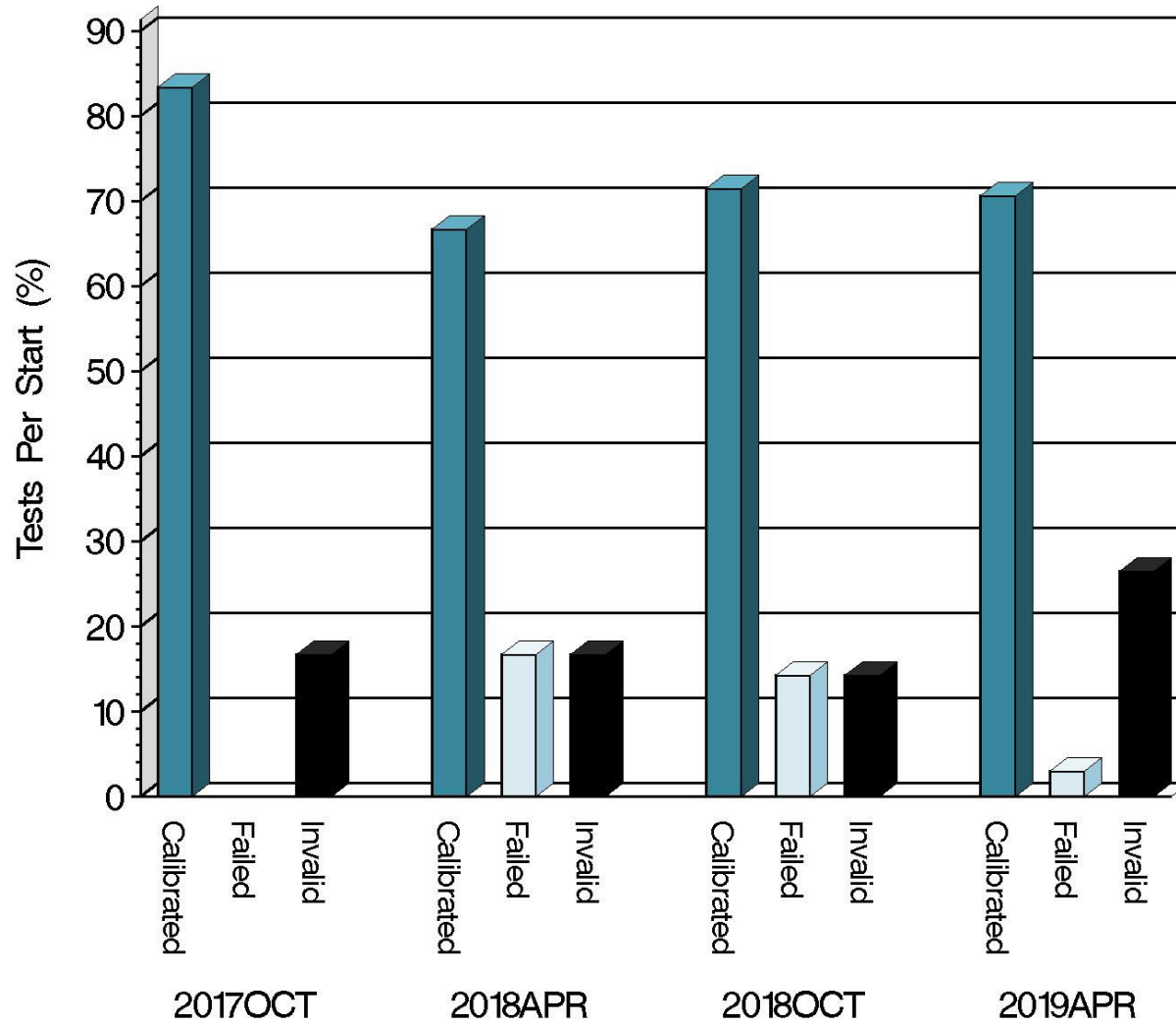
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Test Distribution by Oil and Validity

					Totals	
		113	117	119	Last Period	This Period
Accepted for calibration	AC	0	24	0	5	24
Rejected (Mild)	OC	0	0	0	1	0
Rejected (Severe)	OC	0	1	0	0	1
Rejected (Precision)	OC	0	0	0	0	0
Accepted discrimination	AS	7	0	0	0	7
Unacceptable discrimination	MS	0	0	0	0	0
Invalidated discrimination	LS	6	0	0	0	6
Invalidated calibration	LC	0	9	0	1	9
Aborted	XC	0	0	0	0	0
Acceptable information run	NI	0	0	1	0	1
Total		13	34	1	7	48

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CALIBRATION ATTEMPT SUMMARY



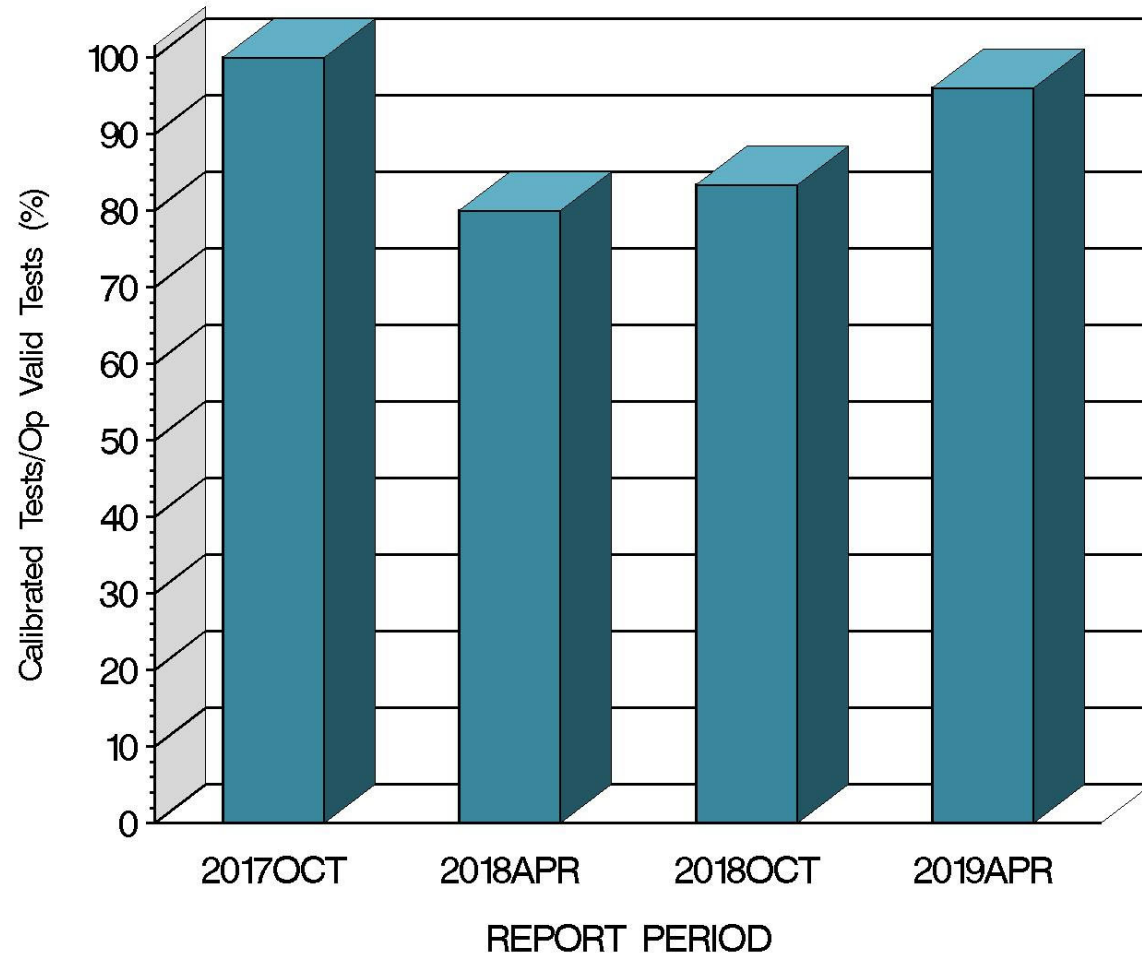
Resolution

Report Period

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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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CAUSES FOR LOST TESTS

Lab	Cause	Oil		Validity				Loss Rate		
		113	117	LS	LC	XC	XI	Lost	Starts	%
B	Stand settings changed after test. Not used for cal sequence.		●		●			1	11	9.1%
	Critical parameter outside of spec.		●		●			4	11	36%
		●		●				1	3	33%
G	Stand settings changed after test. Not used for cal sequence.		●		●			3	12	25%
		●		●				3	7	43%
	Critical parameter outside of spec.		●		●			1	12	8.3%
		●		●				2	7	29%
Lost		6	9	6	9	0	0			
Starts		13	34	48	48	48	48			
%		46%	26%	13%	19%	0%	0%			

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			Coast Side Pinion Scoring		
Oil	Gear Batch	N	Mean	Std. Dev.	Average Δ/s
117	044GP103/P8AD078	1	17.0	.	-1.09
117	C1L925/P8AD078X	24	21.4	5.14	-0.30

		Pooled Standard Deviation			
Lab	Coast Side Pinion Scoring Δ/s	df	Coast Side Pinion Scoring	Coast Side Ring Scoring	Shock Series I Coast Side Ring Scoring
A	0.64	1	6.36	3.54	0.00
B	-0.58	5	1.47	0.98	0.00
D	-0.83	8	3.05	1.48	0.00
G	0.18	7	6.57	4.71	0.00

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SUMMARY OF SEVERITY & PRECISION

Severity
Severity remained within limits throughout the period.
Precision
Precision remained within limits throughout the period.

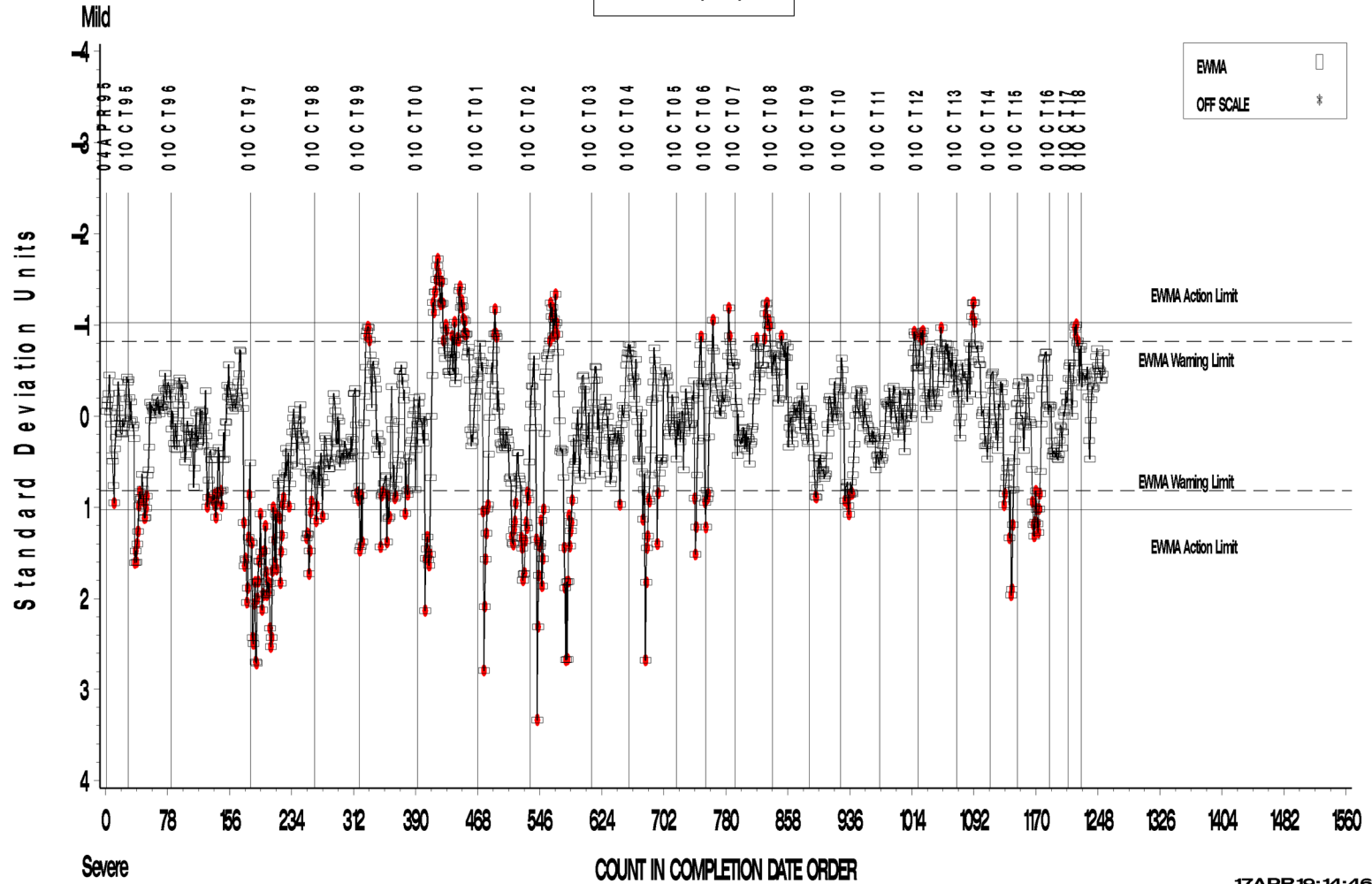
Industry control charts follow.

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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Severity Analysis



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Test Monitoring Center

<http://astmtmc.cmu.edu>



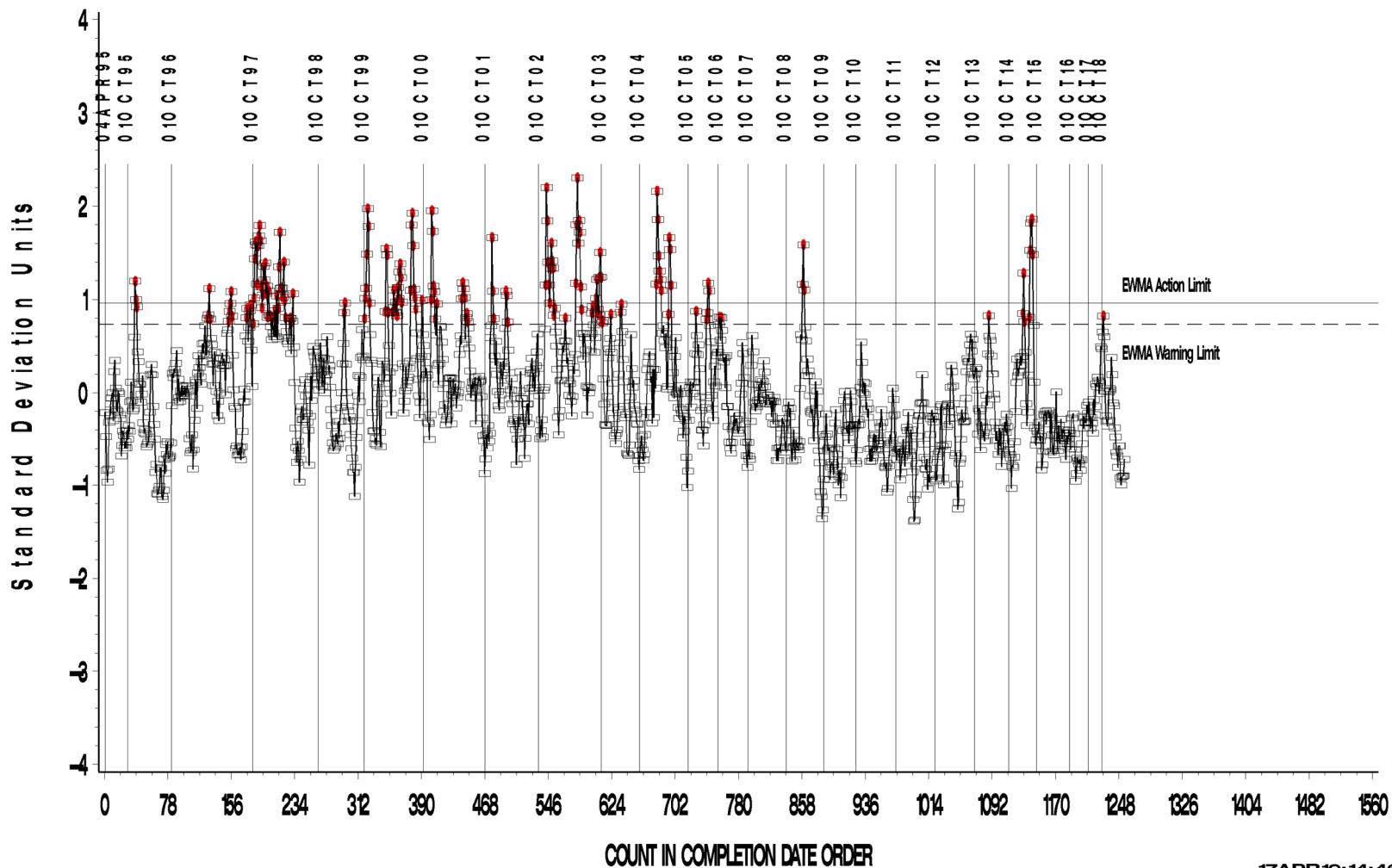
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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Precision Analysis



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Test Monitoring Center

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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

CUSUM Severity Analysis



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Test Monitoring Center

<http://astmtmc.cmu.edu>



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TIMELINE ADDITIONS

Effective Date	Information Letter	Event
Feb 13 th , 2019	19-1	<p>Clarification was added to section 9.6.1 to include the addition of a discrimination oil run to the calibration requirements if any of the special circumstances listed within the section occur.</p> <p>In addition, the graphic in figure A6.2 has been updated to further distinguish the location of the axle cooling spray nozzle.</p>

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LAB VISITS

Two L-42 lab visits were conducted during this period. During one visit it was pointed out that there was a small crack in the stand's transmission block. The engineer in charge noted that a replacement part had been ordered and would be replaced by the end of the current reference period. The crack did not appear to be in a location that would impact the test.

All other reviewed elements of the test were found to be in accordance with the procedure.

INFORMATION LETTERS

Information letter 19-1 was issued during this period. Clarification added to section 9.6.1 and figure A6.2 was updated.

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STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
113	18	70	35.2
116-1	0	0	0.0
117	31	720	360.0
119	6	108	54.0
Total	55	898	449.2

At surveillance panel direction, the TMC has procured oil 117 as a replacement oil for 116-1. This is a J2360 oil which produces somewhat milder scoring. The oil has been implemented for use as the new “pass” oil with a correction factor +6% for the pinion scoring result and +4% for the ring scoring result.

119 oil is currently being evaluated as a replacement oil to 113 discrimination oil. 119 has not yet been approved by the surveillance panel.