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C13 INFORMATION LETTER 07-1
Sequence No. 1
February 14, 2007

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: C13 Mailing List

SUBJECT: 1. Deleted Substitute Fuel Sulfur Measurement Method
2. Operational Quality Index Assessment Added

The C13 Surveillance Panel approved the following changes to the C13 test procedure:

1. Test Method D 129 has been removed from the list of substitute fuel sulfur measurement methods. Section 11.5.1.2 has been modified accordingly.

2. The use of Quality Index to determine operational validity was approved, effective February 1, 2007. Annex A12 has been modified accordingly.

The modified sections of the procedure are attached. The updated version of the test procedure, designated as "C13 Draft 11 – January 30 2007", is available in its entirety from the TMC web site (www.astmtmc.cmu.edu/docs/diesel/cat_c13/procedure_and_ils/) or by contacting the TMC for a hardcopy.

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John L.Zalar
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Attachments

c: ftp://astmtmc.cmu.edu/docs/diesel/cat_c13/procedure_and_ils/il07-1.pdf

Distribution: Email

Remove from Section 2.1:

D 129 Standard Test Method for Sulfur in Petroleum Products[4]

11.5.1.2 Total Sulfur, % wt., Test Method D 5453 (D 2622 or D 4294 can be substituted)

A12. DETERMINATION OF OPERATIONAL VALIDITY

A12.1 *Quality Index Calculation*

A12.1.1 Calculate Quality Index (QI) for all control parameters according to the DACA II Report. Account for missing or bad quality data according to the DACA II Report.

A12.1.2 Use the U, L, Over Range, and Under Range values shown in Table A12.1 for the QI calculations.

A12.1.3 Round the calculated QI values to the nearest 0.001.

A12.1.4 Report the QI values.

A12.2 *Averages*

A12.2.1 Calculate the average for control and non-control parameters, and report the values. Note that, with the exception of non-QI and ranged parameters, the averages are not directly used to determine operational validity but may be helpful when an engineering review is required (A12.4).

A12.3 *Determining Operational Validity*

A12.3.1 QI threshold values for operational validity are shown in Table A12.1. Specifications for non-QI control parameters and ranged parameters are also shown in Table A12.1.

A12.3.1.1 A test with all control parameter QI values greater than or equal to the threshold value and with averages for all non-QI control parameters and all ranged parameters within specifications is operationally valid provided that no other operational deviations exist that may cause the test to be declared invalid.

A12.3.1.2 Perform an engineering review to determine operational validity for a test with any control parameter QI value less than the threshold value shown in Table A12.1.

A12.4 *Engineering Review*

A12.4.1 Perform an engineering review when a control parameter QI value is below the threshold value. A typical engineering review involves investigation of the test data to determine the cause of the QI value below threshold. The purpose of the review is to determine whether a real control problem existed and the possible impact on the test. For example, a test has a low QI value for fuel flow. An examination of the fuel flow data may show that the fuel flow data contains several over range values. An examination of exhaust temperatures may help determine whether the instrumentation problem affected real fuel flow or only affected the data acquisition.

A12.4.2 Conduct engineering reviews for reference tests jointly with the TMC. For non-reference tests, optional input is available from the TMC for the engineering review.

A12.4.2 Determine operational validity based upon the engineering review and summarize the decision in the comment section the test report. Supporting documentation may be included at the end of the test report. The final decision regarding operational validity rests with the laboratory.

TABLE A12.1
QUALITY INDEX CALCULATION VALUES

Control Parameter	Units	Quality Index Threshold	Quality Index U & L Values		Over & Under Range Values	
			U	L	High	Low
Speed	r/min	0.000	1802.5	1797.5	1937	1663
Fuel Flow	kg/h	0.000	1203	1197	1364	1036
Inlet Air Temp.	°C	0.000	26	24	79.8	-29.8
Intake Man. Temp.	°C	0.000	40.5	39.5	67.4	12.6
Fuel In Temp.	°C	0.000	40.4	39.6	61.9	18.1
Coolant Out Temp.	°C	0.000	88.4	87.6	109.9	66.1
Oil Gallery Temp.	°C	0.000	98.3	97.7	114.4	81.6
Exhaust Back Press.	kPa	0.000	6.3	5.7	22.4	-10.4
					Over & Under Range Values	
Non-QI Control Parameter		**Units**	**Specification**		**High**	**Low**
Inlet Air Pressure		KPa	93 ± 1.5		175	11
Ranged Parameter		**Units**	**Range**		**High**	**Low**
Intake Manifold Pressure		KPa	275 – 285		554	6