

Pennsylvania Technical Advisory Committee Diesel Powered Equipment

Robert DuBreucq
(814) 736-9547(Home)
(724)254-4001(Office)
email: dub@uplink.net

Gene Davis
(724)737-5213(Home)
(724)583-8807 (fax)
email: genedavis@charter.net

July 12, 2004

Joseph Sbaffoni, Director
Bureau of Deep Mine Safety
Fayette County Health Center
100 New Salem Road, Room 167
Uniontown, Pa 15402

Date Received: 7-19-04
By: Ada

	Handle	Copy	Orig-File
JAS			
DJS	✓		
AJM	✓		
SNAB			
PLH			
WBB	✓		
PRM			
EC			
TM			
JJA			
JDC			
LDS			
AB			
ACG		✓	
DJE			
JW			
TT			
...			

Re: Brookville -18M116D Personnel Carrier/
Locomotive/ Cummins 4BTA 3.9C
diesel engine
Sections 217-A and 218-A Alternate
Emissions Test Procedure

Dear Mr. Sbaffoni,

Article II-A of the Pennsylvania Bituminous Coal Mining Act of 1961 provides for the use of diesel powered equipment in underground bituminous coal mines. Section 224-A created a Technical Advisory Committee on Diesel Powered Equipment (TAC) for the purpose of advising the Secretary regarding implementation of Article II-A and evaluation of alternative technology or methods of meeting the requirements for diesel powered equipment as set forth in Article II-A.

On April 27, 2004, Brookville Mining Equipment Corporation requested an alternate test procedure to comply with Sections 217- A and 218-A. The TAC together with representatives from the Bureau of Deep Mine Safety traveled to Brookville on June 28th, 2004 in order to evaluate both the need for an alternate test procedure as well as the alternate test procedure it self.

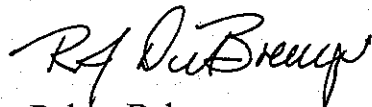
Investigation

The first test recorded was the five minute test procedure required by Sections 217-A and 218-A. We operated the engine in a torque stall condition for the required 5-minute duration. No external cooling device had been added to the equipment for this test. The equipment did operate for the required 5-minute duration in torque stall mode; however, the transmission did heat to an unacceptable level. After repeating the required test for both the treated and untreated emissions, and evaluating the amount of heat absorbed by the transmission oil, we do not believe it practical for this piece of equipment to be held in a torque stall condition for the required 5-minutes. After studying the required CO numbers recorded as part of this testing, we believe the 90-second Alternate Test will produce results very similar the required 5-minute test. Therefore, we believe the Alternate Test is warranted for this piece of equipment.

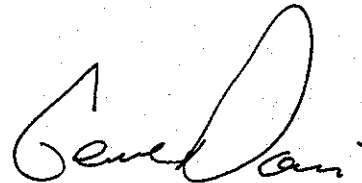
The CO emission numbers taken during these tests did comply with the requirements of the above-mentioned sections of law and were representative of the MSHA test results for this engine.

Recommendation

The TAC recommends approval of the attached Alternative Stall Test Procedure for the Brookville 18M116D equipped with a Cummins 4BTA 3.9C 116 hp engine and the DST after-treatment system. The TAC does not believe the use of this alternate testing procedure will reduce or compromise the level of health and safety afforded by the law.



Robert Dubreucq
TAC Member



Gene Davis
TAC Member

**ALTERNATIVE STALL TEST PROCEDURE FOR PA STATE ACT 182, ARTICLE II-A
DIESEL-POWERED EQUIPMENT**

ALTERNATE PROCEDURE, Section 217-A: (an alternative to items 8 through 14)

1. Place the equipment into an intake entry. Make sure no personnel are in front of or behind the equipment during test.
2. Set the brakes and chock the wheels.
3. Start the diesel engine and allow it to warm up to operating temperature.
4. Install the carbon monoxide CO sampling devices into the untreated exhaust gas port provided.
5. Allow CO sampling device to stabilize.
6. Put the transmission in high gear.
7. With brake still applied, put the engine at full throttle to induce converter stall for 90 seconds. Stop test immediately if any controls or indicators are not in their operating range, or if equipment moves while at stall.
8. Record three CO readings at 60, 75, and 90-second intervals during converter stall.
9. Return engine to low idle and put transmission in neutral. Allow the torque converter temperature to stabilize.
10. Take an average of the three readings.
11. Comply with record-keeping requirements pursuant to Section 214-A.

ALTERNATIVE PROCEDURE, Section 218-A: (an alternative to items 10-14)

1. Place the equipment into an intake entry. Make sure no personnel are in front of or behind the equipment during test.
2. Set the brakes and chock the wheels.
3. Start the diesel engine and allow it to warm up to operating temperature.
4. Install the carbon monoxide CO sampling device into the untreated exhaust gas port provided.
5. Allow CO sampling device to stabilize.
6. Put the transmission in high gear.
7. With brakes still applied, put the engine at full throttle to induce converter stall for 90 seconds. Stop test immediately if any controls or indicators are not in their operating range, or if equipment moves while at stall.
8. Record three CO readings at 60, 75, and 90-second intervals during converter stall.
9. Return engine to low idle and put transmission in neutral. Allow the torque converter temperature to stabilize.
10. Take an average of the three CO readings.
11. Install the carbon monoxide CO sampling device into the treated exhaust gas port provided.
12. Repeat steps (5) thru (10).
13. If CO reading for untreated exhaust gas is greater than twice the baseline established under 217-A(b), or if the CO reading for treated exhaust is greater than 100 ppm, the equipment has failed and must be serviced and retested before it is returned to regular service; and
14. Comply with record-keeping requirements pursuant to Section 214-A.