

Chris Laroo/AA/USEPA/US
EPA-OAR,OTAQ,ASD

Received Date:
05/15/2008 01:55 PM
Transmission Date:
05/15/2008 01:55:52 PM

To "Glenn, Doug (GE Infra, Transportation)"
<doug.glenn@ge.com>
cc "Kelly, Brian E (GE Infra, Transportation)"
<Brian.Kelly1@ge.com>, chris.sharp@swri.org, "Ducharme,
David J (GE Infra, Transportation)"
bcc

Subject RE: 1033 Loco PM Proposed Changes

Doug,

That sounds like a way forward. I envision that since this change will only apply to locomotives, it would go into the standard setting part (part 1033). I look forward to seeing your proposal.

Regards,

Chris

"Glenn, Doug (GE Infra, Transportation)" <doug.glenn@ge.com>



**"Glenn, Doug (GE Infra,
Transportation)"**
<doug.glenn@ge.com>

Sent by: "Glenn, Doug (GE Infra,
Transportation)"
<doug.glenn@ge.com>

Received Date:
05/15/2008 08:59 AM
Transmission Date:
05/15/2008 08:59:40 AM

To Chris Laroo/AA/USEPA/US@EPA

cc "Kelly, Brian E (GE Infra, Transportation)"
<Brian.Kelly1@ge.com>, <chris.sharp@swri.org>,
"Ducharme, David J (GE Infra, Transportation)"
<David.Ducharme@ge.com>, <dustin.osborne@swri.org>,
Matt Spears/AA/USEPA/US@EPA, "Steve Fritz"
<sfritz@swri.org>, <steven.j.mitchell@emdiesels.com>,
Joseph McDonald/AA/USEPA/US@EPA

Subject RE: 1033 Loco PM Proposed Changes

Good morning Chris, thanks for the update.

We, at GE, have discussed this internally and still feel the steady state discrete mode dilution ratios need to be addressed. We will work on a proposal to address exactly what you mention below, to change dilution ratio at the same break points as those of the RMC phases.

Steve Mitchell, we are interested in you thoughts as well.

Thanks,
Doug

-----Original Message-----

From: Laroo.Chris@epamail.epa.gov [mailto:Laroo.Chris@epamail.epa.gov]
Sent: Monday, May 12, 2008 1:56 PM
To: Glenn, Doug (GE Infra, Transportation)
Cc: Kelly, Brian E (GE Infra, Transportation); chris.sharp@swri.org;
Ducharme, David J (GE Infra, Transportation); dustin.osborne@swri.org;
spears.matt@epa.gov; Steve Fritz; steven.j.mitchell@emdiesels.com;
Mcdonald.Joseph@epamail.epa.gov
Subject: RE: 1033 Loco PM Proposed Changes

Doug,

First, I apologize for not getting back to you sooner on this. I had a very hectic April. Excuses aside, we did not address the issue of long sample times during discrete mode testing. Currently the RMC is a viable way to get around the long sample times associated with discrete mode testing.

The only solution that I see that could resolve the discrete mode issue would be to allow you to change your minimum dilution ratio at the same break points and for the same modes where it is done for the RMC. At this time EPA does not have any plans to revise the regulations to allow this. Our belief is that once labs start becoming familiar with the RMC, they will prefer to run that in place of discrete mode. If GE strongly feels that adjustments should be made to minimize the discrete mode sample time, please propose a way forward and I will discuss it with my colleagues here to see if we are in agreement that something should be done.

In regards to your question on 1033.525(c), Joe McDonald is going to look into this and we will get back to you shortly.

Regards,

Chris Laroo
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Office of Transportation and Air Quality Assessment and Standards
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"Glenn, Doug (GE
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Sent by: "Glenn,
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Received Date:
04/02/2008 10:07
AM
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04/02/2008
10:07:15 AM

To
Chris Laroo/AA/USEPA/US@EPA,
"Steve Fritz" <sfritz@swri.org>,
<steven.j.mitchell@emdiesels.com>
, Matt Spears/AA/USEPA/US@EPA,
<dustin.osborne@swri.org>,
<chris.sharp@swri.org>

cc
"Kelly, Brian E (GE Infra,
Transportation)"
<Brian.Kelly1@ge.com>, "Ducharme,
David J (GE Infra,
Transportation)"
<David.Ducharme@ge.com>

Subject
RE: 1033 Loco PM Proposed Changes

Hello everyone. I am just now getting a more detailed study of the new regulations (1033 and 1065), and I would like to get clarification, from this group, on the dilution ratio subject we worked on.

The modification to 1033.520 for the RMC and 1065.140(e)(2) make the extremely high (85:1) dilution ratios a non-issue as we will be able to reset the minimum dilution ratio based on the maximum engine exhaust flow within a given "test interval." Note, "test interval" is 1065 wording, while 1033.520 refers to "test phases," not "test interval." The definitions in 1065.1001 "Test interval means a duration of time over which you determine brake-specific emissions....In cases where multiple test intervals occur over a duty cycle, the standard setting part may specify additional calculations that weight and combine results to arrive at composite values for comparison against the applicable standards."

The modifications to 1065.170 address the concerns for excessive filter loading (>400 microgram) on a filters.

However, I do not see how the changes to 1065.140(e)(2) address the extremely high (85:1) dilution ratio that will be seen when sampling PM under 1033.515 Steady State Discrete Mode. EPA recognized this early on in their original January 16, 2008 EMA/EMTC proposal as item #4 (see attached). GE, EMD and SwRI also recognized this in our proposal (attached pdf) on the last slide, item #4.

Are the excessive dilution ratios resulting from proportional sampling under 1033.515 steady state discrete mode addressed somewhere that I haven't seen?

Thanks,
Doug

Oh, one more thing. I did not see anything in 1033.525 smoke testing that talked about how to process the smoke data that was collected, like part 92.131? 1033.525(c) just says to "Compare the recorded opacities to the smoke standards applicable to your locomotive." Nothing about the determination of the 3 sec, 30 sec or steady state values.

-----Original Message-----

From: Laroo.Chris@epamail.epa.gov [mailto:Laroo.Chris@epamail.epa.gov]
Sent: Thursday, February 14, 2008 9:40 AM
To: Glenn, Doug (GE Infra, Transportation); Steve Fritz;
steven.j.mitchell@emdiesels.com
Cc: spears.matt@epa.gov
Subject: Re: 1033 Loco PM Proposed Changes

Doug, Steve, and Steve:

Thank you for taking the time to put together the proposal on the change to the line haul RMC test cycle. As proposed this will provide relief on the long sample times that would be imposed at some notches in the test cycle due to the new 140(e)(2) minimum dilution ratio requirement. Per your discussion with Matt Spears on 2/12/08 and the follow-up conversation that I had with him, EPA will revise the line-haul test cycle in 1033.514 Table 1 as proposed in your proposal discussed at the

EMTC meeting on 2/11/08. Furthermore, we will also be making some changes to 1065.170(a)(2), 1065.170(a)(2)(i), 1065.170(a)(2)(ii), 1065.170(a)(2)(iii), and 1065.545(a)&(b) as an outcome of your discussion with Matt on 2/12/08. Please note that per your discussion with Matt, we will not be accepting the portion of your proposal (item #5) that would allow you to vary your sampling times within phase for the RMC.

Fortunately we were able to get these changes into the LocoMarine FRM. We did this with about 10 minutes to spare. Although I do not have a copy of the new reg text for 1033.514 Table 1, I can assure you that the removal of Notches 6 and 7 from phase 2, the addition of Notches 6 and 7 to phase 3, the revised time in mode for notches 6 and 7, as well as the revised weighting factors for phases 2 and 3 will be done per your proposal.

The revisions to 1065 that are listed above are attached for your review. The change to 170(a)(2) makes note that the actions listed in (a)(2)(i)-(iii) are available for "each filter", meaning that you can reset your minimum dilution ratio for each phase of the test cycle (for example, you can reset the minimum DR for each of the 3 phases of the line-haul RMC). The changes to 170(a)(2)(i)-(iii) effectively reorder the actions and now only limit action (ii) to discrete mode testing with actions (i) and (iii) applying to RMC, transient, and DM testing. We also changed the limit of filter face velocity from 25 cm/s to 50/cm/s in action (i), thus allowing to you go on to actions (ii) and (iii) after only dropping your filter face velocity to 50 cm/s (this change was due to some recent information we received about artifact formation at FFVs below 50 cm/s).

If you have any questions or concerns, please let me know. Unfortunately at this time, if you have issue with our way forward it is effectively too late for changes this time around, and we would have to make the corrections in a future rulemaking. Hopefully this will be well received and we can put these issues to rest.

(See attached file: Part 1065.170(a)(2)(i-iii) and 545(a) and (b).pdf)

Regards,

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[attachment "Proposal for Addressing Proportionality Issue with Locomotive Testing at Low Speed N.doc" deleted by Chris Laroo/AA/USEPA/US] [attachment "1033_PM_proposal.pdf" deleted by Chris Laroo/AA/USEPA/US]