



Emeaba Kalu Kelly

From: Staebler, Douglas A <[REDACTED]>
Sent: Friday, October 28, 2016 2:54 PM
To: Chhatre Ravindra
Cc: Emeaba Kalu Kelly; Price, Stephen J.; Zakar Frank; [REDACTED]
Subject: RE: DCA16FP003; Silver Spring; Materials Laboratory Lab Examination - Exemplar Regulators- November 1, 2016
Attachments: NTSB piping 2.JPG

Ravi,

Per our discussion this morning, on Monday October 24th, during the testing of the two regulators and inspection of the associated piping from the basement of building 8701, we noted how the section of ¾" piping from the relief vent of the lower regulator to the male side of the union, the one that was found disconnected, had been rotated clockwise as it no longer aligned with female side of the union that was still connected to the vent stack. I mentioned to Frank and the group present that this would not be the typical direction a person would turn a fitting; into the threads further tightening the fitting. The resistance to turning pipe fittings in this direction, particularly fittings that have been set for many years, is usually very high and a lot of force would have been needed to accomplish this. To do this, a pipe wrench would have been used on the nipple that was connected to the regulator, and the force required would have left very noticeable wrench marks on this fitting. I did not observe any noticeable wrench marks on this fitting. This made me question how this small section of piping was rotated into the threads in the clockwise direction.

I went back to pictures from the scene and looked over the photo of the regulator and vent piping as found (attached). This photo shows the regulators and meter rack collapsed in a south-eastern direction (back wall running east-west), a direction that I believe would have created this rotation if the union was still connected at the time of the incident and collapse of the meter assembly. We also had noted that the 1" pipe on the lower half of the regulator's vent stack was slightly bent, and the force to create this would have required the lower regulator to still be connected during the collapse. Considering these observations, I feel we must investigate the piping and alignment more thoroughly to determine if the union being intact at the time of the collapse is in fact a possible scenario. We should also closely examine the nipple that pulled out of the upper regulator, as it appears to have been deformed when it pulled out. The direction of how it was deformed may also indicate what direction the regulators and piping were being pulled.

The question would then be how the union separated in the course of the event, and what forensic investigation could be performed to determine that? We should try and identify the potential pull out forces that would be generated upon the relevant union joints in the event of the forced collapse of an intact meter assembly. We should also test to determine the expansion effect upon the union fittings and threads as a result of being engulfed in temperatures at least high enough to melt the aluminum components of the two regulators; could this cause the union to loosen and separate with little affect on the threads?

I would like us to discuss this at our next lab testing session if possible.

Doug

From: Zakar Frank [REDACTED]
Sent: Friday, October 21, 2016 4:15 PM
To: Staebler, Douglas A; [REDACTED]
Cc: Chhatre Ravindra; Vorderbrueggen John; Emeaba Kalu Kelly; Budinski Michael; Helmer Gary; Price, Stephen J.; Zakar Frank
Subject: FW: DCA16FP003; Silver Spring; Materials Laboratory Lab Examination - Exemplar Regulators- November 1, 2016

Dear Party Members

Since Ravi Chhatre is out the office and investigating another accident, I am providing this advanced notice regarding the addition of another laboratory session.

The NTSB Materials Laboratory has planned an additional laboratory examination session – this one will involve disassembly of the exemplar gas regulators.

This is to inform you that the examination of the exemplar gas regulators will start on November 1, 2016.

During this session, we will disassemble three exemplar mercury-containing gas regulators and one exemplar non-mercury gas regulator.

Attached is the proposed test protocol.

This examination will take place at the facilities of the NTSB, at: 490 L'Enfant Plaza East, SW, Washington DC 20594.

We will meet at the 6th floor reception area at about 9 a.m. From there we will go downstairs as a group to the basement lab.

In order to participate in the disassembly of the exemplar gas regulators, you will be required to wear a half-face respirator with filter cartridge that can handle mercury contamination.

You are required to bring your own fitted half-face mask and cartridge filters for handling mercury contamination.

You must have received training and certification in the use of a half-face mask respirator, and should have been fitted with one that matched your facial profile.

Now that we have two separate laboratory examination session, observe the following:

A respirator is not required for the lab session that will start on the week of October 24.

A respirator is required for the lab session that will start on November 1.

Please reply to this email stating whether you plan to participate in the disassembly of the exemplar gas regulators, starting on November 1, 2016.

If you plan to attend, please indicate that you will bring a half-face mask with appropriate filters.

Regards,

Frank Zakar
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National Transportation Safety Board
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