

Kliphuis, Trais, NMENV



From: McCauslin, Susan - DOE [susan.mccauslin@wipp.ws]
Sent: Wednesday, January 18, 2012 2:24 PM
To: Kliphuis, Trais, NMENV
Cc: Chavez, Rick - RES; Kehrman, Bob - RES; Stone, Anthony - DOE
Subject: RE: ventilation
Attachments: Training Matrix 011812.xls

Follow Up Flag: Follow up
Flag Status: Completed

Hi Trais,

Below is our response to your question regarding ventilation. Also, I have attached a training matrix in response to your earlier request for that information.

The use of category A.4.b was based on the recommendation of the NMED when they determined that the proposed ventilation language changes should be handled as a Class 2 PMR because of a decrease in monitoring. The Permittees agree with this classification for two reasons. First, monitoring in active RH TRU rooms that are not required to have the minimum ventilation would no longer be required by the Permit. Second, the PMR is proposing a change in the frequency of and procedures for reporting.

With regard to the ventilation rate, the overriding regulation is MSHA. The NMED acknowledged in the response to comments on the revised draft permit regarding the establishment of the VOC monitoring requirements: "NMED attempted to balance their authority to impose permit conditions necessary to comply with the RCRA miscellaneous unit environmental performance standards with NMED's general policy of deferring to the primary administrative authority on issues that are directly related to regulations issued by another authority. NMED believes that imposition of VOC Room-Based Concentration Limits that are protective of worker health in the event of a roof fall, and the deletion of the description of specific ground control program activities from the revised draft permit, represents an appropriate balance of NMED's RCRA Authority and the more general authority of OSHA and MSHA." (Response to Comment N.1-32 in Module IV of the revised draft permit). The Permit requirement that the Permittees follow MSHA practices is not being changed by this PMR (See Attachment A2, Section A2-2a(3), page A2-8, lines 5-9 for a description of how ventilation rates are determined and Table E-1, Page E-15 "MSHA Air Quality Monitor" which requires daily check of air quality to assure MSHA requirements are being met). The 35,000 scfm specified in the modeling was proposed based on MSHA requirements for the type and amount of equipment present in the room when CH TRU waste emplacement is underway. So, there are two different requirements in the Permit. One is a general requirement to maintain safe operating conditions for workers as defined by MSHA which applies to all occupied portions of the underground. The second is a specific requirement that applies to a specific set of circumstances (i.e., workers in a room adjacent to a filled CH TRU waste room). These requirements are intended to complement each other and not be in conflict. The PMR does not propose to change the operational conditions related to MSHA and only proposes to implement what has already been adjudicated during the application process.

The modification is principally removing an inconsistency between Attachments A2 and O. Attachment O in essence requires that if a person is in an active waste room (either CH or RH), the minimum ventilation is required. Attachment A2 agrees, except that waste handling must also be underway for the requirement to apply. Clearly, Attachment O is the more stringent requirement, hence the modification cannot be made as a Class 1 since the Permittees are seeking to remove some of the stringency.

One way to remove the inconsistency is to make the language in Attachment O agree with Attachment A2 by including the "when waste emplacement is underway" in all the appropriate locations in Attachment O. This is what the original request did. However, this would create the situation that would allow a worker to be in a room adjacent to a filled CH TRU waste room without the minimum ventilation if waste emplacement is not underway. According to the model,



however, this worker would not be protected from the roof fall since the ventilation rate is below the minimum. Consequently, the Permittees are imposing the additional requirement that any time a worker is adjacent to a filled room, the minimum is needed. A worker one room over, however, does not need this protection because he is not at risk from the roof fall scenario. Therefore, it is necessary to clarify the general statement in Attachment A2 and Attachment O to avoid imposing a minimum ventilation rate in areas where the MSHA requirements are sufficient. The goal of the modification is, therefore, to make the specific requirement (minimum ventilation rate) applicable to the specific conditions that were modeled for both Attachments A2 and O and to remove any unintended consequences, like overriding the MSHA general requirement in areas where there is no basis for such a change.

Please feel free to call me if you have any further questions or need any further information.

Susan McCauslin
(575) 234-7349

From: Kliphuis, Trais, NMENV [mailto:trais.kliphuis@state.nm.us]
Sent: Tuesday, January 17, 2012 3:28 PM
To: McCauslin, Susan - DOE; Chavez, Rick - RES
Cc: Kieling, John, NMENV
Subject: RE: ventilation

Hi Susan,

Thank you for the responses.

The continued concern is that the expansion of purpose of the ventilation changes is affecting the Class 2 category applicability. That is, the modification was justified as a Class 2 by Item A.4.b of Appendix 1 of 40 CFR 270.42 (incorporated by 20.4.1.900 NMAC). As I understand, in order to qualify under this category the changes must relate to monitoring, reporting, sampling or maintenance. In the September 2011 request, the description of the modification indicated that these changes were maintenance related (maintenance workers adjusting ventilation louvers). If the modifications are more than this, it should still fit within the Appendix 1 - A.4.b or fit in another class 2 item. How do these changes which now appear to be changes to operational conditions (not monitoring, reporting, sampling or maintenance) continue to fall in this category?

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From: McCauslin, Susan - DOE [mailto:susan.mccauslin@wipp.ws]
Sent: Thursday, January 05, 2012 2:09 PM
To: Kliphuis, Trais, NMENV
Cc: Chavez, Rick - RES; Kehrman, Bob - RES
Subject: RE: ventilation and "described" versus "specified"?

Trais, below are our responses to the comments you relayed via email yesterday. Please let me know if you would like to discuss further, thanks.

COMMENT: Specifically, when we look at Figures 3 and 4 of the PMR Item 2 we see that the worker on the bottom left of Fig 3 who is “preparing the next disposal room” (also potentially doing RH emplacement although not shown in the Figure) and with the new language this worker would not be covered if there was a fall in the active room.

RESPONSE: First, RH TRU waste was not a consideration during the original permit hearings when these figures were prepared by the NMED, so this individual is not doing RH-type activities. You are correct in observing that in Figure 3 in the PMR such an individual would be subject to undiluted concentrations of VOCs if the a minimum ventilation rate is not enforced. However, that is the case under the current Permit if waste handling is not underway and no one is present in the active room. It was necessary to **assume** someone was at this location in order to have an exposed individual (Assumption #9 in D9-ATT 1-2.1.1 of the original permit application). We are not sure what this individual would be doing in terms of “preparing the next disposal room”. The probability of someone being there at the time of an open room roof fall is negligible for two reasons: First, roof falls in open rooms are not considered credible events since the rooms are inspected regularly and corrective action (at the waste face which is where this event has to happen for there to be a release) would be taken if roof conditions were not acceptable. (Note that we would have to report such unacceptable conditions to the NMED per Part 4, Section 4.6.1.3. We have never had to submit such a report due to our ground control practices). Second, the time workers spend downstream of the waste is controlled through the use of as low as reasonably achievable principles and is minimized as required by Permit Attachment A4. Furthermore, rooms are waste ready when they are turned over to waste operation—this includes an inspection by the NMED, so there is little waste readiness activity that must be performed.

Even if this event were to occur, the exposures would not be life-threatening. In the Permittees application in 1996, the exposure of this individual was less than 2 ppmv for any VOC from the open room roof fall for a duration of about thirty seconds (See D9-ATT 1-2.1.2 Calculations and Table D9-ATT 1-3). This number is, of course subject to the reasonableness of the assumptions used, including an assumption that the source of VOCs does not deplete. Even if the ventilation were zero when the roof fall occurs, then the assumed concentrations in the 110 cubic feet of drum headspace (5.2 cubic feet times 21 drums) would be diluted by the 14,850 cubic feet of clean air in the room or by a factor of 135 rendering concentrations in the few ppmv range. These would be further diluted by the clean air in the drift where the worker is located. Finally, the exposure times would be short, for example the time for a worker to adjust the louvers for the active room. Clearly, these exposures are not life-threatening, even with zero ventilation. As a practical matter, these workers carry VOC detection devices to assure working conditions are acceptable. The threshold for working is 5 ppmv regardless of the ventilation rate. This is 40 times below the permit limit for protecting workers.

COMMENT: In addition to this, there is still also concern about removing the ventilation requirement for RH active rooms. According to staff, the requirement was subject to extensive discussions between NMED, the Permittees, and stakeholders, as well as a public comment period and a hearing, during renewal in 2010 and the Permittees’ current concerns were not raised when the specific requirement was added to the Permit (Attachment O) during that process.

RESPONSE: The discussions during the pre hearing negotiations and during the hearing for the RH TRU modification were with regard to the generation of hydrogen by RH TRU waste and not with regard to VOC emissions and the protection of workers from such emissions. The Permittees submitted an analysis with the RH TRU waste Permit Modification Request (Supplement 3) that addressed such emissions in a very conservative manner. It shows that at worst, the highest contribution was 8 percent for 1,1 Dichloroethene (which is no longer considered to be a carcinogen). The Permittees offered to reduce the limits to accommodate the maximum effect from RH TRU waste. In the final permit, it was concluded that no change was needed since the levels were low, the accident scenarios did not apply, VOC buildup would occur slowly, and room-based monitoring would detect any such buildup.

The Permittees readily admit that they should have commented on this topic when commenting on the draft Permit in 2010. However, the Permittees did not recognize the unintended consequences of the inconsistency between Attachment O and Attachment A2 until the issue arose in 2011, at which time a modification was submitted.

COMMENT: NMED's written testimony stated the following: "The minimum active room ventilation rate [35,000 scfm] condition is based on the direct relationship between the minimum active room ventilation rate and the underground worker exposure concentration of VOCs in an open room. Any decrease in the active room mine ventilation rate would result in an increase in the concentration of VOCs in an open room."

and concluded: "NMED believes that specification of the minimum active room ventilation rate of 35,000 scfm when workers are present is appropriate."

RESPONSE: We realize that the testimony reached this conclusion. However, the current language in Attachment A2 and the language in the original permit (Attachment M2) implies that this conclusion is only of concern when workers are present and waste handling operations are underway. The conclusion reached by the NMED in their testimony is why we agree that any worker next to a filled CH Room must be protected by the minimum ventilation rate—consistent with what was modeled. Our PMR was prepared to assure that protection. Our basis is that such a worker is the subject of the model used. However, since the RH waste mission was not considered at that time, the assumption was that waste emplacement was always next to a filled room (except for Room 7). The situation of workers in rooms that were not adjacent to filled rooms was not separately evaluated. That evaluation occurred in the RH PMR Supplement 3. Our conclusion is that there is not a RCRA exposure basis for establishing a minimum ventilation rate for non-adjacent areas since the accident scenarios will not affect such workers and the workers are normally upstream from the waste, consistent with the ALARA principles.

COMMENT: I believe the language I proposed and the draft versions I sent last week would address these concerns while still provide for the stated intent of the modification. Please let me know your thoughts.

RESPONSE: The PMR states three purposes for the modification: Add definition a of a filled room; revise language relative to when 35,000 scfm is needed and when reporting is required; and revise the related reporting requirement. Our November 18 comment added two other purposes: Clarify that there are no minimum ventilation requirements for areas that are not subject to the "filled room" model (other than those specified by MSHA) and add a definition of a active room. Your changes accomplish 4 of the 5, however, they would result in minimum ventilation rates for areas that are not subject to VOC risks. We agree that subjecting Room 7 to the minimum at all times when it is active is acceptable since it will not impact other ventilation needs. However, we are unsure what technical basis there is to impose minimums other than those already required in the Permit via the MSHA requirements (See Attachment A2, Section A2-2a(3), page A2-8, lines 5-9 for a description of how ventilation rates are determined) and Table E-1, Page E-15 "MSHA Air Quality Monitor" which requires daily check of air quality to assure MSHA requirements are being met.

COMMENT: And finally, I would like to know whether you have a preference for the definitions below? ("described" versus "specified") Don Hancock believes "the convention in the permit would be "specified" rather than "described" though both terms are used."

Current version in draft:

1.5.19. Filled Room

"Filled Room" means a room in an Underground Hazardous Waste Disposal Unit as described in Permit Part 4 will no longer receive waste for emplacement.

1.5.20. Active Room

"Active Room" means a room in an Underground Hazardous Waste Disposal Unit as described in Permit Part 4 that contains emplaced TRU mixed waste and is not a filled room

Proposed:

1.5.19. Filled Room

"Filled Room" means a room in an Underground Hazardous Waste Disposal Unit as specified in Permit Part 4 that will no longer receive waste for emplacement.

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RESPONSE: James Bearzi pointed out at a meeting with the NMED during the renewal process that the Parts are the conditions (aka requirements) and the Attachments clarify the Parts. Therefore "specified" would be the better of the terms. Specified is also consistent with Section 1.5.16.

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From: Kliphuis, Trais
Sent: Wednesday, January 04, 2012 2:49 PM
To: McCauslin, Susan - DOE
Cc: Chavez, Rick - RES; Kehrman, Bob; Kieling, John, NMENV
Subject: ventilation and "described" versus "specified"?

Greetings,

Although Don seems to be OK with the current draft, we are having some internal debate over the ventilation change.

Specifically, when we look at Figures 3 and 4 of the PMR Item 2 we see that the worker on the bottom left of Fig 3 who is "preparing the next disposal room" (also potentially doing RH emplacement although not shown in the Figure) and with the new language this worker would not be covered if there was a fall in the active room.

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