

Universal Waste – Bulb Crushing
Stakeholder Public Meeting
October 14, 2014
Meeting Notes

Location: DEQ - Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Start: 1:11 pm
End: 2:58 pm

Public Attendees:

Scott Beierwaltes, Aircycle
David L. Wilson, VDOT
Jeffrey Howard, Babcock and Wilcox
Hugh Hensley, VADOC
Bernadette Reese, US Navy
Earl Waterfield, US Navy
Robert P. Barksdale, VADOC
Andrea Barbieri, EPA-R3

John Pickelhaupt, O'Brien & Gere
Dennis Slade, Dominion
Kathy Lett, EPA
Debbie Spiliopoulos, Northern Regional Commission
Paul James, Ft. Eustis
Tom Griffin, Greener Results
Craig Norris, Ft. Lee
Matt Weeks, Ft. Lee

Staff Attendees:

Justin Williams
Leslie Romanchik
Sonal Iyer
Pat McMurray

Deb Harris
Jason Miller
Ryan Smith

Agenda Item: Welcome

Discussion: Justin Williams, DEQ, welcomed everyone to the meeting and asked everyone to introduce themselves. He then provided a brief overview of the purpose of the meeting.

Agenda Item: Overview

Discussion: Leslie Romanchik, DEQ, presented the history of the universal waste (UW) lamp rules and the bulb crushing amendment for UW lamps in the hazardous waste (HW) regulations under 9VAC20-60. This background included an overview of the previous stakeholder meetings which were held in May 2011 and Feb 2013 including a review of the issues identified during those meetings. A summary of the proposed changes to the regulations was presented including explanation of the requirements such as the demonstration of compliance with air monitoring requirements based on hours crushed which was made using risk-based calculations. An exemption from some requirements for generators crushing CESQG equivalent amounts of lamps is also included. The revised regulations which must ensure that requirements for crushing are as protective compared to not crushing have been sent for review by EPA. Initial indicators are that EPA will agree to the revisions.

Agenda Item: Stakeholder Feedback

Discussion: After the conclusion of the presentation, Ms. Romanchik and Mr. Williams asked the stakeholders if they had any comments regarding the draft text regarding bulb crushing.

Stakeholder Comments:

- The regulation indicates that monitoring shall occur during operation; however, the highest mercury levels are likely to happen during the drum change-out. It is during drum change-outs that the limit could be exceeded for the 30 seconds to 1 minute that the process takes. Drum change-outs may occur from 1 to 5 times a year depending on the amount of bulbs crushed and it usually takes less than 1 minute. Besides having workers use personal protective equipment, is there any way to allow for a variance from the acute value for this sporadic event?
- It should be noted that the mercury level that may occur during the drum change-out is lower than the level that occurs when a box with ten bulbs falls over and bulbs break. Tests indicate that value is over 1 mg/m³ which exceeds the value from a drum change-out.
 - DEQ toxicologists explained that the standards in the regulation are risk-based and both a chronic value and acute value are provided. Staff will ask EPA to take into consideration these sporadic operational events and requested that the information be submitted for evaluation.
- It should be noted that not every drum change-out will exceed the acute level of .3 mg/m³, but it does and will occur.
 - DEQ staff explained that the acute air emission value was based on a ten minute exposure. For the chronic exposure, an EPA calculation was used which takes into account the time of exposure over days and years and hours. Additionally, some

information is available from a study done by EPA Region 3 about ten years ago but that study's objective was not the same so the data has to be considered carefully. DEQ has not done a study.

- The chronic level as presented will not be an issue for the bulb crusher units as they operate under negative pressure and are designed to capture mercury so that the exposure is minimized. The main issue is the acute level during the drum change-out
- Do the limits contemplate the use of respiratory protection?
 - DEQ staff responded that is an issue for OSHA. While companies will need to insure their workers are properly protected in accordance with OSHA that is not the purpose of the crushing requirement of the hazardous waste regulations. DEQ's concern is with the operation of the unit and the impacts from it to both human health and the environment. As we are dealing with mercury as our constituent of concern, we are looking at air emissions but not in the same way that OSHA would. Also, air emissions are being evaluated as part of the necessary protectiveness demonstration as compared to not crushing.
 - It was noted that the protectiveness standard used for the comparison is that no bulbs break in the non-crushing option. It is noted that does not occur in the real world as these bulbs when stored will often break but it is the comparative standard that we have to work with on the demonstration.
 - DEQ staff noted that they have worked diligently to balance stakeholder needs in consideration of the potential impacts of bulb crushing. DEQ has and continues to work with EPA on this issue
- Destination facilities – are there any in Virginia? And if not, why are there standards for these facilities?
 - No, there are no destination facilities in Virginia; however, the standards can be use by generators for due diligence if needed, i.e., to evaluate destination facilities that they send their bulbs to.
- Closure and financial assurance? Is this for large quantity handlers?
 - Yes, if you are a large quantity handler of universal waste and you crush bulbs, you will need to provide closure plans and financial assurance for your crushing operation.
- Based on the revisions, it seems like there is much more of a burden for crushing over not crushing even though crushing is safer overall. Why is DEQ not promoting the safer option by using the available technology to handle bulbs?
- For instance, there is a push to go to high efficiency (HE) bulbs/lamps that provide a much greater energy-savings; however, for some CESQGs such as commercial buildings, if they do the switch to HE lamps, it is conceivable that they could go over their crushing time or the number of bulbs crushed limit? Can the 220 bulbs be an average over the year or it is a per month count? In our opinion, it needs to be practical to allow events such as going to energy-saving HE lamps. It was noted that HE bulbs do contain less mercury and last longer so it is a good thing when the switch to HE takes place.
- What if you are a small quantity handler and one time you go over the limit, are you going to need to provide closure?
 - One of the purposes of the closure and assurance is to prevent issues with “fly by nights” that come in set-up crushing, crush massive amounts, make money and then leave a mess behind. DEQ will look more into this issue.
- Business events and small quantity generator events in the counties, are those an issue?
 - Not an issue unless you are crushing. If just collecting, no issue as long as the collection is under UW requirements.
- What about residues in the drums?
 - If the residues meet the definition of UW, then yes, they can be added to the drum. Note, filters are to be managed separately as HW. They can be exempt under 40CFR261 if they are reclaimed but filters are not UW.
- The secondary filtration requirements for the crushing room will be a difficult requirement and does not seem necessary as the crushers have HEPA filters already so how are we to filter the air for something that has all ready been filtered through a HEPA? Is there something that DEQ has in mind for this secondary ventilation system?
 - The separate filtration for the ambient air of the room in which the crushing takes place is like a secondary containment system. HEPAs can be used. This is a precautionary standard to insure that there are not emissions from the crushing operation.
- How does DEQ envision this secondary system would work?
 - The crushing room would need to have its air exhaust filtered prior to exhausting to the outside or another part of the building.
- We think that is a problem and an additional HEPA will do nothing for emissions concerns. Anything that can be caught by a HEPA in the crusher is all ready caught and anything that comes through that HEPA is going to pass through the next HEPA as it did the first. So what good is it?
 - DEQ staff noted that the secondary system is redundant but it is needed to balance protectiveness while allowing crushing to continue. Yes, this is redundant, but that is part of our regulatory scheme for all areas and operations. The driver for any of the redundancy in our regulations is the “what ifs” - what if the drum tips over during change out, what if the crusher malfunctions then the room's air filtration system is the back up to “contain” the issue within the room. Note, as we don't know everything that is available or what might become available, the regulations will also allow for alternative systems after demonstration/justification.
- Venting to outdoors? It seems that the regulations are just adding on to the requirements for crushing. If we have redundant filtration, then why the exhaust to outside as well?
- In EPA study, when trying to clean the mercury in the air, they just ran the crushing unit to clean the air in the enclosure. Could we do just that for the secondary filtration option?
 - DEQ staff indicated that may be where the use of alternative standards could be used.
- Perhaps we could allow the CESQG level to be exempt from other requirements such as the secondary filtration as those are the folks that are crushing smaller number of bulbs?
 - Unfortunately, if they get out of control what is then?

- If you have a bulb crushing that is operating at orders of magnitude less than the levels, do you still need the secondary filtration?
 - Yes, as air monitoring is only required once per year. The secondary filtration is there as the balancing act; however, if you can demonstrate because emissions are always controlled, then DEQ may be able to allow variance/exemption.
- Regarding required monitoring when the crusher is modified, does that include modifications for routine maintenance?
 - No, that is not the intent as routine maintenance is not modification. DEQ will check the regulation for that issue.
- Why can you not consider broken bulbs in the protectiveness demonstration? The reality is that there is no secondary containment for a box with lamps and that some of the lamps almost always break. To not consider breakage is to not consider the issue that lamps break when stored prior to shipping in a box.
- With all the burdens on crushing, why would anyone crush? Even though crushing is better for the environment, people will go back to storing, boxing, and shipping to avoid the burdens.
- The Navy is cut to the bones for funding and crushing is so much better than the storage/boxing as you have to keep buying aftermarket containers (cost \$60-\$70 each) as the boxes never come back in usable condition. It is ridiculous to force people to go back to storage/boxing that is costly and has more impact potential on workers and the environment. Why make these crushing regulations difficult as crushing is a good thing to do?
- VDOT staff noted that they were concerned mostly about the secondary filtration requirement as were the other stakeholders.
 - DEQ staff noted that crushing under the hazardous waste generator requirements is allowed as an option for those that can manage the bulbs as hazardous waste in lieu of universal waste as generators are allowed to treat hazardous waste in tanks or containers (less than 90 days).

At the conclusion of the comments, Justin Williams asked that specific recommendations be provided to Leslie Romanchik by 11/3/14 and it is hoped that a proposed regulation will be going to the Virginia Waste Management Board for approval to go to public comment at their next meeting.

DEQ staff noted that the process is far from over and estimated that it will be 12-18 months before the regulation is finalized and then EPA will need to process the regulations for authorization which may take another 12 months.

As there were no final comments, the meeting was then adjourned.