



[townhall.virginia.gov](http://townhall.virginia.gov)

## Proposed Regulation Agency Background Document

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) citation(s)</b>	9VAC20-60
<b>Regulation title(s)</b>	Virginia Hazardous Waste Management Regulations
<b>Action title</b>	Amendment 18 – Mercury-Containing Lamp Crushing
<b>Date this document prepared</b>	December 16, 2014

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 17 (2014) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

### Brief summary

*Please provide a brief summary (preferably no more than 2 or 3 paragraphs) of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation.*

The Virginia Hazardous Waste Management Regulations, 9VAC20-60, provide the standards for the definition and management of hazardous waste. These regulations incorporate by reference the federal hazardous waste management regulations as promulgated by the Environmental Protection Agency (EPA). In July 1999 (64 FR 36466), EPA added hazardous waste lamps containing mercury to the list of universal waste regulated under the Resource Conservation and Recovery Act (RCRA). The purpose of the universal waste sections contained in the regulations is to streamline and encourage recycling.

Currently, mercury-containing lamps are managed in accordance with the universal waste sections of 9VAC20-60 and crushing of these lamps for size reduction is allowed; however, the federal universal waste regulations do not allow crushing. In order to obtain approval for a state-equivalent program, Virginia submitted a request to EPA for the universal waste lamp requirements in 9VAC20-60 which include crushing. In 2003, EPA proposed Virginia's regulations for crushing for approval but later withdrew that proposal due to adverse comments received. As a result, Virginia's regulations do not operate in lieu of the Federal requirements. EPA recommended that Virginia make further changes to its universal waste regulations for mercury-containing lamps in order to address the comments and receive EPA approval for the mercury-containing lamp universal waste program.

Over the past years, DEQ has worked with EPA Region III in order to provide additional support for a demonstration of equivalency and to develop reasonable regulatory language. This was a lengthy process and included much discussion with EPA Region III. Risk based air emission standards for mercury were developed by DEQ and evaluated by EPA. Recently, EPA has indicated that the demonstration of equivalency was adequate and that the proposed regulatory provisions were acceptable.

This regulatory action also addresses mercury-containing lamp recycling facilities. Requirements for these facilities have been added to insure the proper management of mercury-containing lamps. The proposed regulatory amendment revises various sections of 9VAC20-60 to provide: (i) appropriate storage criteria for facilities that manage mercury-containing lamps prior to recycling; (ii) additional requirements for mercury-containing lamp recycling; and, (iii) revised requirements for small and large quantity handlers and destination facilities that crush or otherwise manage universal waste mercury-containing lamps. The sections proposed to be revised by this amendment are Sections 261, 264, 265, 273, and 1505.

### Legal basis

*Please identify the state and/or federal legal authority to promulgate this proposed regulation, including: 1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable; and 2) promulgating entity, i.e., agency, board, or person. Your citation should include a specific provision authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency/board/person’s overall regulatory authority.*

Section 10.1-1402 of the Code of Virginia authorizes the Virginia Waste Management Board (Board) to issue regulations as may be necessary to carry out its powers and duties required by the Virginia Waste Management Act (Act). Virginia code §10.1-1402(11) states:

“The Board shall carry out the purposes and provisions of this chapter and compatible provisions of federal acts and is authorized to:

11. Promulgate and enforce regulations, and provide for reasonable variances and exemptions necessary to carry out its powers and duties and the intent of this chapter and the federal acts, except that a description of provisions of any proposed regulation which are more restrictive than applicable federal requirements, together with the reason why the more restrictive provisions are needed, shall be provided to the standing committee of each house of the General Assembly to which matters relating to the content of the regulation are most properly referable.”

### Purpose

*Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Describe the specific reasons the regulation is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.*

The Virginia Hazardous Waste Management Regulations, 9 VAC 20-60, provide requirements for the effective management of hazardous waste in the Commonwealth, including the management of mercury-containing lamps by recycling facilities or universal waste handlers. This proposed amendment is intended to revise the current management requirements for these lamps to provide for better protection of human health and the environment.

### Substance

*Please briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the “Detail of changes” section below.*

In order to obtain EPA’s authorization for Virginia’s universal waste program for mercury-containing lamps, this amendment revises 9VAC20-60 as follows:

- Revises and adds additional requirements for mercury-containing lamp recycling facilities including testing, operational, closure and recordkeeping criteria, and if applicable, financial assurance requirements; and,
- Revises and adds requirements for small and large quantity handlers and destination facilities that manage mercury containing lamps.

**Issues**

*Please identify the issues associated with the proposed regulatory action, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, please indicate.*

The primary purpose of this regulatory action is to develop a set of performance standards and requirements that will allow for the crushing of mercury-containing lamps (fluorescent bulbs) in a manner that is protective of human health and the environment. Crushing of mercury-containing lamps has several benefits for businesses and will help to encourage recycling by making it more economical as compared to recycling intact lamps. Recycling results in the reduction of mercury in the environment which is important for protection of public health.

The advantages to businesses include: 1) reduces storage space over that needed to accumulate intact lamps; 2) reduces time and labor costs; 3) reduces emissions from lamp breakage that can occur during storage as well as during transportation; 4) reduces transportation costs; and 5) makes recycling more economical. Advantages to the general public include a reduction of mercury in the environment. Disadvantages to businesses may include additional regulatory requirements associated with lamp crushing, particularly the annual mercury monitoring requirements and associated costs and additional record keeping requirements. These may be offset by the cost advantages. Advantages to the Commonwealth are the promotion and encouragement of recycling; particularly the recycling of mercury which has known public health and environmental consequences if not disposed of properly. In addition, recycling promotes the Commonwealth’s stated waste management hierarchy (i.e., recycling is preferred over incineration or landfill disposal).

This regulatory action is needed in order to obtain Federal authorization for lamp crushing. Under federal rules, crushing is not allowed, but states can demonstrate that they have regulatory requirements and controls in place that provide the same level of protection. Currently, businesses in Virginia that are crushing mercury containing lamps may not comply with the Federal requirement and risk possible enforcement action by the EPA.

**Requirements more restrictive than federal**

*Please identify and describe any requirement of the proposal which is more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are*

*no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.*

The proposed regulation is not more restrictive than the federal requirements. The proposal is broader in scope than the analogous federal regulations.

### Localities particularly affected

*Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.*

The requirements of this proposal are applicable through-out the Commonwealth. Any locality which chooses to use a lamp crushing unit for the management of their universal waste lamps will be subject to the requirements of this proposal for handlers of universal waste lamps.

### Public participation

*Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal, the impacts of the regulated community and the impacts of the regulation on farm or forest land preservation.*

In addition to any other comments, the Board is seeking comments on the costs and benefits of the proposal, the potential impacts of this regulatory proposal and any impacts of the regulation on farm and forest land preservation. Also, the Board is seeking information on impacts on small businesses as defined in §2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments for the public comment file may do so by mail, email or fax to: Debra Harris, Department of Environmental, 629 East Main Street, P.O. Box 1105, Richmond, VA 23218; phone: 804-698-4209; fax: 804-698-4019; or, email: Debra.Harris@deq.virginia.gov. Comments may also be submitted through the Public Forum feature of the Virginia Regulatory Town Hall web site at: <http://www.townhall.virginia.gov>. Written comments must include the name and address of the commenter. In order to be considered, comments must be received by 11:59 pm on the last day of the public comment period.

A public hearing will not be held following the publication of this stage of this regulatory action.

### Economic impact

*Please identify the anticipated economic impact of the proposed new regulations or amendments to the existing regulation. When describing a particular economic impact, please specify which new requirement or change in requirement creates the anticipated economic impact.*

<p><b>Projected cost to the state to implement and enforce the proposed regulation, including:</b>  <b>a) fund source / fund detail; and</b>  <b>b) a delineation of one-time versus on-going</b></p>	<p>There are no anticipated net increases in costs to the state associated with implementing and enforcing the proposed regulation.</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------

<b>expenditures</b>	
<b>Projected cost of the new regulations or changes to existing regulations on localities.</b>	There may be an increase in costs to local governments who may be subject to annual monitoring requirements estimated to be \$500 - \$1500 per year, however, these costs may be offset by cost saving realized due to reduced time and labor costs as well as reduced transportation and recycling costs associated with managing spent fluorescent lamps.
<b>Description of the individuals, businesses, or other entities likely to be affected by the new regulations or changes to existing regulations.</b>	Many businesses, both large and small, may generate spent fluorescent bulbs; however, the changes only affect businesses that crush mercury-containing bulbs prior to recycling. This may include predominately local governments, state agencies, government military facilities and medium to large businesses.
<b>Agency’s best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected.</b> Small business means a business entity, including its affiliates, that: a) is independently owned and operated and; b) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.	Estimate less than 500 entities may be impacted by the proposed regulatory changes with less than 10% being small businesses.
<b>All projected costs of the new regulations or changes to existing regulations for affected individuals, businesses, or other entities. Please be specific and include all costs including:</b> <b>a) the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses; and</b> <b>b) specify any costs related to the development of real estate for commercial or residential purposes that are a consequence of the proposed regulatory changes or new regulations.</b>	Projected costs include: \$500 – \$1500 for annual monitoring (may only apply to less than 100 entities as many will be exempt from this requirement), additional recordkeeping requirements estimated to range between \$0 and \$1000/year and preparation of a closure plan (one time cost of less than \$5000) and annual demonstration of financial assurance estimated to be less than \$500/yr (this will only apply to a very small percentage of affected entities; perhaps less than 5%). There may be costs associated with new commercial real estate development for those that also wish to manage their mercury-containing lamps by crushing under the universal waste regulations. These regulations have certain requirements associated with air handling/filtration within the building; however, overall the associated costs for new construction are expected to be minimal. No costs associated with development of residential real estate.
<b>Beneficial impact the regulation is designed to produce.</b>	The intent of the regulation is to encourage the recycling of mercury-containing lamps and to reduce the releases of mercury to the environment.

**Alternatives**

*Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action. Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in § 2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.*

This regulatory action is necessary to minimize the risk to Virginia businesses that manage their universal waste lamps by crushing and to minimize any further problems with facilities that recycle mercury-containing lamps. Virginia businesses that manage their universal waste lamps by crushing are currently

subject to two conflicting sets of regulatory provisions under the Virginia and federal requirements. One alternative is to not amend the regulations and allow Virginia businesses to determine how best to adhere to both the state and federal requirements, which differ on lamp crushing. Revising the regulations will reduce the confusion by allowing Virginia to seek EPA authorization for its lamp crushing requirements. Crushing will allow Virginia businesses more flexibility in managing their mercury-containing lamps. In order for Virginia to receive approval from EPA for Virginia’s regulations to operate in lieu of the Federal, a revision to 9VAC20-60 is necessary.

### Regulatory flexibility analysis

*Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.*

This regulatory action is necessary as Virginia’s regulations allow crushing of lamps and in order to obtain Federal authorization for lamp crushing a regulatory amendment is needed. Under the federal rules, lamp crushing is not allowed; however, states can demonstrate that they have regulatory requirements and controls in place that provide the same level of protection. Currently, businesses in Virginia that are crushing mercury containing lamps may not comply with the federal requirement and risk possible enforcement action by the EPA. Therefore, this regulatory action is necessary to allow Virginia to demonstrate that we have regulatory requirements and controls in place and our regulations for crushing can be authorized. Once authorized, Virginia’s regulations will be effective in lieu of the federal rules and businesses in Virginia will have more protection as they will not have to risk possible enforcement action by the EPA under the federal rules.

The only other option is not to revise our regulations and allow the continued risk to Virginia businesses from possible action by EPA.

### Public comment

*Please summarize all comments received during the public comment period following the publication of the NOIRA, and provide the agency response.*

A NOIRA was published on April 9, 2012. During the comment period, comments were provided by two commenters. Those comments are provided below.

<b>Commenter</b>	<b>Comment</b>	<b>Agency response</b>
Cheryl Barnett Environmental Program Manager, Department of the Navy (Mid-Atlantic)	The Department of Defense (DoD) encourages VADEQ to seek EPA authorization for the mercury-containing lamp universal waste program. We also support continuation of the lamp crushing provisions of the regulations as outlined in 9VAC20-60-273. Crushing lamps provides DoD with regulatory flexibility in storing, managing and disposing of its universal waste while effectively supporting the DoD mission through facilities sustainment.	Recommendations accepted and taken under consideration during the drafting of the regulation.
Cheryl Barnett	Each installation that crushes lamps has a written Standard	Recommendations accepted and

<p>Environmental Program Manager, Department of the Navy (Mid-Atlantic)</p>	<p>Operating Procedure (SOP). The SOP meets the requirements of 9VAC20-60-273 B.3.c (2). The bulb crushers used at DoD installations meet the air pollution, human health monitoring and operational requirements stated in 9VAC20-60-273 B.3.b. and c. The DoD installations that perform lamp crushing operations crush the lamps at the generating installations and comply with the container management requirements for Universal Waste during accumulation, transportation and off-site disposal. Maintenance activities are routinely conducted and are documented in written logs. Operators are trained on the proper usage of the lamp crushing unit along with the appropriate Personal Protective Equipment to be used during crushing operations ensuring a safe and efficient management method for this waste stream. This training is documented for each operator. Recommendation: No change to this portion of the current regulations is warranted.</p>	<p>taken under consideration during the drafting of the regulation.</p>
<p>Cheryl Barnett Environmental Program Manager, Department of the Navy (Mid-Atlantic)</p>	<p>The Department of Defense (DoD) encourages VADEQ to seek EPA authorization for the mercury-containing lamp universal waste program. The DoD strongly urges VADEQ to seek to retain the lamp crushing provisions provided in the current regulations. Crushing facilitates significant volume reduction, minimizing hazardous waste generation, waste management efforts, transportation and disposal costs, and impact to the environment. For example, 1200 pounds of crushed lamps can be shipped in one triwall<sup>1</sup> container, whereas only 184 pounds of whole (uncrushed) lamps can be shipped in one triwall container. Shipping uncrushed lamps results in additional operator handling, an increased number of containers required, larger storage area requirements, increased shipping costs and greater environmental impact due to the potential for lamp damage during handling and transportation. Conducted in a safe and compliant manner, crushing reduces the potential for unnecessary exposure to mercury that can occur during standard container accumulation, storage, and transportation. The DoD has successfully and safely crushed lamps for several years in compliance with the VADEQ's regulations as evidenced by our compliance record.</p>	<p>Recommendations accepted and taken under consideration during the drafting of the regulation.</p>
<p>Scott Beierwaltes CEO, Air Cycle Corporation</p>	<p>We support the Virginia Department of Environmental Quality in its efforts to more fully define the operational requirements of lamp crushing, especially in the case of destination recycling facilities. Our company has created a nationwide network of lamp recyclers to service our customers, and we fully understand the safety and regulatory concerns that must be in place when processing large quantities of lamps. With regards to lamp crushing units, we also support the development of clear regulatory guidance related to their use and operation. Again, we have designed our device to exceed air quality emissions standards. And we strive to fully educate all of our customers on the importance of properly maintaining and safely operating the device, as well as their regulatory responsibilities related to storage and shipping. We support guidance that reinforces these measures. However, we would recommend against regulatory requirements that cause any undue burden or add additional</p>	<p>Recommendations accepted and taken under consideration during the drafting of the regulation</p>

	<p>costs to the operator. Our typical users crush only 2000-4000 lamps a year (average 40-80 per week). Any unnecessary requirements such as air permits, registration fees, reporting, and air quality monitoring would discourage the economical use of these devices.</p>	
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

Additionally, DEQ held two stakeholder meetings after publication of the NOIRA. These meetings were held on February 12, 2013 and October 14, 2014. Stakeholders strongly supported the agency’s efforts to obtain authorization from EPA for lamp crushing under 9VAC20-60. Additionally, Stakeholders supported the proposed requirements for mercury-containing lamp recycling facilities and retention of the universal waste lamp crushing by universal waste handlers. However, Stakeholders were concerned about the provisions for the secondary filtration units and monitoring. As these requirements were provided as part of the demonstration to EPA, the requirements have been retained. Additional information and recent data can be submitted during the comment period on these issues for further consideration.

There were also questions raised regarding the applicability of the requirements for developing a closure plan and providing financial assurance for large quantity handlers. To address this issue, clarifying language was added to state that these requirements only apply to generators who accumulate 5000 kilograms or more of universal waste lamps.

**Periodic review and small business impact review report of findings**

*Please (1) summarize all comments received during the public comment period following the publication of the Notice of Intended Regulatory Action and (2) indicate whether the regulation meets the criteria set out in Executive Order 17 (2014), e.g., is necessary for the protection of public health, safety, and welfare, and is clearly written and easily understandable. In addition, as required by 2.2-4007.1 E and F, please include a discussion of the agency’s consideration of: (1) the continued need for the regulation; (2) the nature of complaints or comments received concerning the regulation from the public; (3) the complexity of the regulation; (4) the extent to which the regulation overlaps, duplicates, or conflicts with federal or state law or regulation; and (5) the length of time since the regulation has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the regulation.*

No comments regarding small business impacts were submitted.

**Family impact**

*Please assess the impact of this regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one’s spouse, and one’s children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

There is no anticipated adverse impact on the institution of the family and family stability.

**Detail of changes**

*Please list all changes that are being proposed and the consequences of the proposed changes; explain the new requirements and what they mean rather than merely quoting the proposed text of the regulation.*



*If the proposed regulation is a new chapter, describe the intent of the language and the expected impact. Please describe the difference between existing regulation(s) and/or agency practice(s) and what is being proposed in this regulatory action. If the proposed regulation is intended to replace an emergency regulation, please list separately: (1) all differences between the **pre-emergency** regulation and this proposed regulation; and 2) only changes made since the publication of the emergency regulation.*

Current section number	Current requirement	Proposed change, intent, rationale, and likely impact of proposed requirements
9VAC20-60-261	Adoption of 40 CFR Part 261 by reference.	The requirements for mercury-containing lamp recycling facilities were added and the definition of hazardous waste clarified for wastes generated in other states. This was necessary to further address issues that arose from the improper management of mercury-containing lamps at facilities that recover or reclaim mercury from lamps.
9VAC20-60-264	Adoption of 40 CFR Part 264 by reference.	Specific requirements for all facilities that recover or reclaim mercury from lamps were added to this section under subdivision B.34. The intent is to provide proper management requirements for those that engage in mercury-containing lamp recycling. The revision is necessary to deal with issues that arose at mercury-containing lamp recycling facilities which did not have proper management controls.
9VAC20-60-265	Adoption of 40 CFR Part 265 by reference.	Specific requirements for all facilities that recover or reclaim mercury from lamps were added to this section under subdivision B.22. The intent is to provide proper management requirements for those that engage in mercury-containing lamp recycling. The revision is necessary to deal with issues that arose at mercury-containing lamp recycling facilities which did not have proper management controls.
9VAC20-60-273	Adoption of 40 CFR Part 273 by reference.	<p>The requirements for mercury-containing lamps that are managed as universal waste under subdivision B.3 of this section were revised. The revised requirements allow for crushing of lamps by universal waste handlers in accordance with the revised requirements of 9VAC20-60-1505. These requirements were revised to provide for better management practices for those that manage mercury-containing lamps as universal waste (e.g., having a closure plan and maintaining financial assurance).</p> <p>A requirement for destination facilities that recycle mercury-containing lamps to comply with the applicable requirements for mercury-containing lamp recycling facilities under sections 264 and 265 of this chapter was added.</p> <p>The intent is to provide proper requirements for those that manage mercury-containing lamps under the universal waste provisions.</p>
9VAC20-60-1505	Additional universal wastes.	The requirements for mercury-containing lamps that are crushed for size reduction by universal waste handlers were added to this section. These requirements were deemed appropriate to minimize any contamination issues that may result from the drum-top crushing of these lamps. As noted previously, the requirements were developed after considerable discussion with EPA regarding the needs for a state-equivalency program for universal lamps.

## Acronyms and Definitions

*Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the “Definition” section of the regulations.*

---

CFR – Code of Federal Regulations

DEQ – Department of Environmental Quality

EPA – United States Environmental Protection Agency