DCN FLEP-00007
COMMENTER Gates Corporation
SUBJECT EXCL5
COMMENT 3. EPA should allow for intentional crushing of lamps for management purposes. In the proposal, EPA expresses concerns about the "intentional breakage" of lamps prior to disposal. While Gates is not certain that intentional breakage of lamps would be an important issue under the conditional exclusion proposal, it urges EPA to allow companies to break discarded lamps. Broken lamps are greatly reduced in volume and much easier to manage. They can be stored in a smaller area and shipped at lower cost. EPA's concern regarding the breaking of lamps is apparently a concern regarding mercury emissions. Gates does not believe that such concern is warranted. First, the mercury emission level will be extremely low from even a large relamping operation. in most states, the emissions will be well below the level that will trigger control requirements under the Clean Air Act and its state counterparts. Second, companies can reduce or eliminate mercury emissions with proper management procedures. Under these procedures, companies would break the mercury containing lamps in sealed drums. The drums would vent to the atmosphere only through a filter that would capture the mercury emissions. Examples of such systems are attached to these comments. [See hard copy of Comment FLEP-00007 for attachments.] These systems are relatively low in cost and, over the life of a facility, should ensure that mercury emissions from lamp breaking are minimal.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519),

the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00011
COMMENTER General Motors
SUBJECT EXCL5
COMMENT Crushing/Treatment of Lamps (page 38297) GM recognizes that some handling requirements may be necessary, and that these should be designed to minimize exposure due to breakage. We strongly object however, to a total prohibition of pre-disposal management (i.e., crushing) of mercury containing lamps for the following reasons. Shipping intact tubes in protective (e.g., original) packaging would result in shipping a large volume of "air" at greatly increased costs. Properly controlled crushing of lamps can reduce shipment volume by as much as 80 per cent, with corresponding savings in shipping costs. Environmentally safe crushing of lamps can be accomplished through the use of properly designed equipment used according to specified procedures (e.g., crushing unit is tightly attached to the drum

which receives the crushed material to prevent dust leakage; proper filters are used, etc.). Crushed lamps can then be safely stored and shipped in the same sealed drums, to be landfilled intact, or to approved facilities for recycling. This procedure would minimize emissions as well. Further, such pre-disposal management (i.e., crushing) should not be considered "treatment", and would not require a RCRA permit, since the Agency has clearly stated (51 FR 10168, March 24, 1986) that: "Of course, no permitting would be required if a generator chooses to treat their hazardous waste in the generator's accumulation tanks or containers..." Immediate Containment (page 38293) We disagree with a requirement for "immediate" containment of broken lamps. It is totally impractical to expect that whenever a fluorescent tube is inadvertently broken, it will be "immediately" contained as if it were a material which would rapidly escape into the environment. The requirement should be that releases be contained "as soon as possible".

RESPONSE

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR ' 273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of

one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed above the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

Under today=s rule, residues from lamps that are inadvertently broken must be immediately contained to prevent further releases into the environment. Because mercury is readily volatilized, the Agency believes that this requirement is necessary to protect human health and the environment.

DCN FLEP-00020
COMMENTER Deere and Company
SUBJECT EXCL5
COMMENT Other specific comments on Option 1 follow: 1. Uncontrolled breaking of the tubes should be prohibited. Breaking in equipment designed for that purpose should be allowed.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00021
COMMENTER Indianapolis Power and Light Co.
SUBJECT EXCL5
COMMENT Indianapolis Power & Light strongly supports the ability of generators to engage in materials separation, and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other DSM programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or

process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a

typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00022
COMMENTER Cooper Industries
SUBJECT EXCL5
COMMENT We are particularly concerned that the Universal Waste proposal prohibits lamp crushing, and the exclusion is silent on it. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus reduces the storage and transportation costs. Crushing can be conducted safely, with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste

management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. the environmental concerns addressed by the federal prohibition on treatment of universal wastes by handlers. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be exposed to air-borne sources of mercury.

DCN FLEP-00025
COMMENTER Environmental Energy Group/NAEP
SUBJECT EXCL5
COMMENT Even assuming that Option 1 were selected, with respect to disposal of waste lamps, IAQ management clearly favors a prohibition on intentional lamp breakage. Lamps are a unique waste and should be recognized as such even with industry efforts to reduce mercury content.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00026
COMMENTER Thomas Industries, Inc.

SUBJECT EXCL5

COMMENT Crushing. We are particularly concerned that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be exposed to air-borne sources of mercury.

DCN FLEP-00029
COMMENTER Texaco, Inc.
SUBJECT EXCL5
COMMENT In regard to intentional breakage of mercury-containing lamps, Texaco supports alternative management standards as opposed to prohibiting such practices. During major building relamping programs, the use of the packaging in which the new lamps were shipped would result in a significantly higher volume of waste being managed in MSW landfills as the packaging material is commonly recyclable. As noted in the preamble, the use of special containers or steel drums to store and transport intentionally broken lamps is an environmentally responsible alternative.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain

potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal

regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00031
COMMENTER Potomac Electric Power Co.
SUBJECT EXCL5
COMMENT Pepco also strongly supports the ability of generators to engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. We believe that such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions and in compliance with existing environmental and safety standards. Nonetheless, as long as lighting wastes remain under the purview of Subtitle C regulation, such activities may be viewed as "treatment," thus requiring a Subtitle C permit. This will only serve to increase compliance costs and further prohibit participation in relamping programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00032
COMMENTER Niagara Mohawk
SUBJECT EXCL5
COMMENT 10. NMPC supports handling requirements to minimize mercury emissions during storage and transportation. Typically, the lighting waste is repackaged in the original boxes for transportation to its ultimate disposal site or is transported

in a recycling company's supplied boxes (i.e., heavy duty cardboard drums). NMPC feels that this helps to minimize the impacts on the environment and would support such an approach.

RESPONSE

The Agency would like to thank the commenter for supporting handling and packaging requirements. In today=s final rule, the Agency is finalizing management standards for hazardous waste lamps within the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards) for certain widely-generated hazardous wastes, and allows the Agency to set specific management standards to control potential emissions from such wastes.

Today=s final rule includes specific packaging standards for handlers of hazardous waste lamps to ensure the proper management of spent lamps and to prevent uncontrolled and unintentional breakage during storage and transport, therefore preventing releases of mercury to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00032
COMMENTER Niagara Mohawk
SUBJECT EXCL5
COMMENT 12. NMPC strongly supports the ability of generators to

engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other DSM programs.

RESPONSE

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the

Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition.. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00033
COMMENTER Brown and Caldwell
SUBJECT EXCL5
COMMENT The EPA has suggested as an option that requirements would be imposed on the storage and transportation of spent lamps that are inadvertently broken. It would be difficult for enforcement purposes to determine what is inadvertent and what is intentional. Invariably some lamps will break, even when on their way to the initial purchaser, so it is unclear to Client what purpose would be served by such requirements. The EPA has requested comment on whether generators should be allowed to intentionally crush lamps to minimize volume for storage or shipment. Client believes generators should be allowed to do this provided they are utilizing the described crusher method for disposal.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably

foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage

units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00042
COMMENTER Entergy Services, Inc.
SUBJECT EXCL5
COMMENT Onsite Handling Methods. Entergy strongly supports the ability of generators to engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such handling activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities clearly increases the costs of compliance and threatens Green Lights initiatives.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal

wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition . EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00052
COMMENTER S. Dakota Dept. of Env. and Nat. Res.
SUBJECT EXCL5

COMMENT It appears that the handling and transportation of the mercury-containing lamps are the areas where the greatest potential for harm exists.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. EPA has found that breakage of lamps during storage and transport is a significant contributor of mercury releases to the environment. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00052

COMMENTER S. Dakota Dept. of Env. and Nat. Res.

SUBJECT EXCL5

COMMENT Consider addressing the proper storage, handling and shipping of the lamps prior to disposal at the permitted solid waste landfill or reclamation facility as part of the requirements for the exclusion.

RESPONSE

The Agency is not finalizing the proposed conditional exclusion option, because it is not sufficiently protective of human health and the environment. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent

breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00061
COMMENTER Chesapeake Public Schools
SUBJECT EXCL5
COMMENT I would like you to reconsider the crushing of lamps at collection points. Would it be considered hazardous if the lamps are crushed under a filtered-air, negative-pressure control" This would greatly reduce the amount to be landfilled.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency

allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00064
COMMENTER Southern company Services, Inc.
SUBJECT EXCL5
COMMENT 7. The Southern Company supports the argument that each generator should have the ability to engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00068
COMMENTER H.B. Fuller Company

SUBJECT EXCL5
COMMENT In addition, we feel it is better off to allow the reclamation marketplace to address EPA's concerns related to the discarded lamp packaging and documentation. The reclaimer will be most interested in unbroken lamps and will encourage lamps be handled to prevent breakage.
RESPONSE
Today=s final rule includes specific packaging standards for handlers of hazardous waste lamps to ensure the proper management of spent lamps and to prevent uncontrolled and unintentional breakage during storage and transport, therefore preventing releases of mercury to the environment. The Agency does not share the commenter=s belief that the recycling market will encourage all hazardous waste lamp handlers to use appropriate packaging because under the universal waste rule, disposal is still a permissible management option.

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00076
COMMENTER The Southland Corporation
SUBJECT EXCL5
COMMENT Position on the Conditions of the Exclusion
Recordkeeping/Transportation. The Southland Corporation is

somewhat uncomfortable with the limited conditions proposed for the conditional exclusion. As generators of the waste, we remain ultimately responsible for the disposition of the lamps and would prefer to see recordkeeping requirements for transporters to ensure delivery to designated destination facilities and packaging requirements for storage and transportation to minimize environmental releases. Such requirements will serve to protect the interest of the generators in responsible downstream management.

Crushing. The Southland Corporation is concerned that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. Both of our professional installing lighting companies believe that crushing is practical and the most cost effective for The Southland Corporation. We strongly recommend that the conditional exclusion include provisions for sate. on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off site storage locations.

RESPONSE

EPA is not finalizing the proposed conditional exclusion. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program

may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps.

Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-00076
COMMENTER The Southland Corporation
SUBJECT EXCL5
COMMENT Air emissions due to breakage can be controlled through proper handling and packaging practices, and, as indicated earlier, the regulatory provisions should address crushing of lamps.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if

so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00077
COMMENTER Brown and Caldwell
SUBJECT EXCL5
COMMENT The EPA has suggested as an option that requirements would be imposed on the storage and transportation of spent lamps that are inadvertently broken. It would be difficult for enforcement purposes to determine what is inadvertent and what is intentional. Invariably some lamps will break, even when on their way to the initial purchaser, so it is unclear to Client what purpose would be served by such requirements. The EPA has requested comment on whether generators should be allowed to intentionally crush lamps to minimize volume for storage or shipment. Client believes generators should be allowed to do this provided they are utilizing the described crusher method for disposal.
RESPONSE
EPA is not finalizing the proposed conditional exclusion. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during

accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

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Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes

that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00078
COMMENTER Tennessee Valley Authority
SUBJECT EXCL5
COMMENT Concerns with the Proposal Onsite lamp crushers - Regardless of which regulatory option EPA chooses, qualified onsite lamp crushing should not be considered hazardous waste treatment. We believe that onsite lamp crushing can be a safe, cost effective alternative to shipping the uncrushed lamps. Because of problems created by lamp breakage during shipping, shipping lamps whole can present more risk to health and safety and the environment than shipping crushed lamps. For the last couple of years TVA has monitored operator mercury exposure from fluorescent bulb crushing. We have tested and found that commercially available crushers with vapor and dust collection systems emit very little mercury if operated correctly and do not exceed OSHA permissible exposure limits.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition . EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00078
COMMENTER Tennessee Valley Authority
SUBJECT EXCL5
COMMENT Storage, handling, and recordkeeping - The storage, handling, and recordkeeping requirements under the conditional exclusion and the universal waste options are unclear. To avoid unnecessary administrative costs, we believe generators should be allowed flexibility in how lighting wastes are stored, consolidated, and accounted for. Our experience indicates that routine lamp replacement is an ongoing activity and not a "batch" activity as EPA suggests. Requiring generators to maintain shipping records for lighting wastes that are not hazardous waste is an unnecessary administrative burden.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all

releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps.

Although the Agency appreciates the fact that the tracking requirement may be viewed as burdensome to some generators, the Agency points out that the final rule, including the tracking requirement, is not applicable to conditionally-exempt small quantity generators including many facilities performing routine lamp replacement. In addition, the final rule represents a significant reduction in the burden imposed upon fully-regulated generators compared to the previous requirement that hazardous waste lamps be managed as under full Subtitle C hazardous waste regulations. Given that the life span of mercury-containing lamps is approximately three to four years, businesses that participate in mass relampings may only dispose of lamps every few years.

DCN FLEP-00079
COMMENTER Voltarc Technologies, Inc.
SUBJECT EXCL5
COMMENT Crushing. Voltarc is especially concerned that the Universal Waste approach prohibits lamp crushing and the Conditional Exclusion is silent on this issue. Crushing is a practical approach to lamp disposal where lamps can be crushed at the generator's site and then transported to either a Subtitle D disposal facility or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. The storage of lamps in any

other manner is not efficient, Voltarc strongly recommends that the Conditional Exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it is also advisable to allow controlled crushing at off-site storage locations for small generators.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00079
COMMENTER Voltarc Technologies, Inc.
SUBJECT EXCL5
COMMENT We would also like to see packaging requirements for storage and transportation to minimize the chance of releases. These requirements would protect our interests as generators responsible for downstream waste management.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT

requirements for the transport of universal waste lamps.

DCN FLEP-00082
COMMENTER Square D Company
SUBJECT EXCL5
COMMENT Air emissions due to breakage can be controlled through proper handling and packaging practices, and, as indicated earlier, the regulatory provisions should address crushing of lamps.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

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The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00082
COMMENTER Square D Company

SUBJECT EXCL5
COMMENT We recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. Off-site controlled crushing would allow flexibility that should also be considered.
Comments on the Conditions of the Exclusion.
Square D does not agree with the limited conditions proposed for the conditional exclusion. As generators of the waste, we remain ultimately responsible for the disposition of the lamps and we would therefore prefer to see recordkeeping requirements for transporters to ensure delivery to designated destination facilities. Packaging requirements when storing and transporting are also needed to minimize environmental releases. Such requirements will serve to protect the interests of the generators, the agency and the public.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment and therefore is not finalizing the proposed conditional exclusion. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

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The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during

accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00084
COMMENTER Jeff Carmichael
SUBJECT EXCL5
COMMENT Another area of concern regarding the Subtitle D disposal option is regarding EPA's information on the air emission pathway. There is no mention or study regarding mercury vapor exposure from air emissions on landfill workers. Emission sources can be from the handling, breakage, and compaction of lamps, especially when large volumes of lamps are received. EPA may wish to impose some packaging requirements on bulk shipments of lamps to a landfill, which would decrease worker exposure to mercury vapors as the lamps are being deposited or compacted. Also, EPA needs to continue its studies on mercury landfill gas, its emission rate, and effect on landfill workers.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards). For the reasons explained in the preamble, the Agency has concluded that its proposed conditional exclusion is not sufficient to protect human health and the environment. Under the universal waste rule, untreated hazardous waste lamps may not be disposed of in a Subtitle D landfill.

Studies show that the greatest threat of mercury releases from the management of lamps is during storage and transport. The universal waste rule provides a format for controlling the management of spent lamps during storage and transport, while at the same time providing a more streamlined and less stringent set of standards than full Subtitle C management requirements.

Today=s final rule includes specific packaging standards for handlers of hazardous waste lamps to ensure the proper management of spent lamps and to prevent uncontrolled and unintentional breakage during storage and transport, therefore preventing releases of mercury to the environment. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably

foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

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The Agency continues to evaluate ongoing studies regarding mercury landfill gas.

DCN FLEP-00086
COMMENTER Northeast Utilities Service Co.
SUBJECT EXCL5
COMMENT V. Changes to Option 1. Under Option 1, generators must maintain a certification as to the destination of lighting wastes. 40 CFR 261.4(b)(16). NUSCO suggests that this certification not include reference to the amount of lamps involved. Maintaining such data imposes an unnecessary burden on generators. To keep track of actual numbers of bulbs disposed would require recordkeeping by a large number of different personnel involved in lamp change-outs, or require lamps to be segregated. NUSCO also recommends that generators with exclusive contracts with waste transporters or disposal/recycling facilities be allowed to make one annual certification.
RESPONSE
EPA is not adopting the conditional exclusion option for managing spent lamps. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards).

The universal waste rule includes a recordkeeping requirement to track waste shipments arriving at and leaving from large quantity handlers (those who handle more than 5,000 kilograms of total universal waste at one time). Large quantity handlers are required to keep records of each

shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement (no certification is required). Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers (those who handle 5,000 kilograms or less of universal waste at one time) are not required to keep records of shipments of universal waste lamps. The Agency believes that these requirements provide consistency with the current universal waste rule and adequately respond to concerns raised by commenters on the proposed rule, including those commenters requesting flexibility in recordkeeping requirements.

Although the Agency appreciates the fact that the tracking requirement may be viewed as burdensome to some generators, the Agency points out that the final rule, including the tracking requirement, is not applicable to conditionally-exempt small quantity generators. In addition, the final rule represents a significant reduction in the burden imposed upon fully-regulated generators compared to the previous requirement that spent mercury-containing lamps be managed as under full Subtitle C hazardous waste regulations. Given that the life span of hazardous waste lamps is approximately three to four years, businesses that participate in mass relampings may only dispose of lamps every few years.

DCN FLEP-00087
COMMENTER NECRRRA
SUBJECT EXCL5
COMMENT THEREFORE, BE IT RESOLVED THAT NECRRRA strongly supports the conditional exclusion as the best means of insuring the safe and cost-effective disposal of mercury containing lamps, and urges USEPA to develop stronger regulations governing storage, transportation, crushing, and recycling of mercury containing lamps.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

Under the universal waste rule as finalized today, collectors and transporters of hazardous waste

lamps are subject to management standards that are protective, while reducing the burden to generators and collectors, and at the same time ensuring that these waste are ultimately destined for fully regulated hazardous waste management facilities.

Studies show that the greatest threat of mercury releases from the management of lamps is during storage and transport. The universal waste rule provides a format for controlling the management of spent lamps during storage and transport, while at the same time providing a more streamlined and less stringent set of standards than full Subtitle C management requirements. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program

may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. the environmental concerns addressed by the federal prohibition on treatment of universal wastes by handlers. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be exposed to air-borne sources of mercury.

DCN FLEP-00090
COMMENTER The Boeing Company
SUBJECT EXCL5
COMMENT Mechanisms to demonstrate compliance. We do not support the proposed labeling, and shipment recordkeeping requirement. From an on-site waste management perspective, such requirements seem to defeat the purpose for selecting this waste stream apart from other hazardous wastes. This is because we believe the agency considers mercury lamps are deemed to be less hazardous than other hazardous wastes; therefore, they should merit less management control. The agency can help move wastes up the management hierarchy by promoting reclamation and efficient management of waste when adopting the less stringent management requirements. The additional benefit to this is that indirectly the agency is promoting more efficient on-site waste management by allowing generators to focus their efforts on wastes which are more hazardous to the environment.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards).

Under the universal waste rule as amended today, collectors and transporters of hazardous waste lamps are subject to management standards that are protective, while reducing the burden to generators and collectors, and at the same time ensuring that these waste are ultimately destined for fully regulated hazardous waste management facilities.

Today=s final rule includes specific packaging standards for handlers of hazardous waste lamps to ensure the proper management of spent lamps and to prevent uncontrolled and unintentional

breakage during storage and transport, therefore preventing releases of mercury to the environment. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment.

The universal waste rule includes a recordkeeping requirement to track waste shipments arriving at and leaving from large quantity handlers (those who handle more than 5,000 kilograms of total universal waste at one time). Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers (those who handle 5,000 kilograms or less of universal waste at one time) are not required to keep records of shipments of universal waste lamps. The Agency believes that these requirements provide consistency with the current universal waste rule and adequately respond to concerns raised by commenters on the proposed rule, including those commenters requesting flexibility in recordkeeping requirements.

DCN FLEP-00095
COMMENTER Allegheny Power System
SUBJECT EXCL5
COMMENT APS strongly supports the ability of generators to engage in materials separation and consolidation (e.g. crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other demand-side management programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency

allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00108
COMMENTER Union Electric Company
SUBJECT EXCL5
COMMENT We strongly support the ability of generators to engage in materials separation and consolidation (e.g., crushing) of all spent lamps, not just mercury-containing lamps, in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Allowing companies to separate and consolidate their spent lamps allows the materials to be more efficiently managed. Any prohibition on such activities drives up costs and further discourages participation in Green Lights and similar programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow

significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00114
COMMENTER Meijer, Inc.
SUBJECT EXCL5
COMMENT The Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. In Michigan the MDNR considers crushing as treatment and therefore cannot be performed on the generators site. This excludes a very viable method of reducing the volume of material entering the landfills. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of presenting flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing

for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00117
COMMENTER Dayton Power and Light Company
SUBJECT EXCL5
COMMENT Proposed Handling Requirements Not Cost-Effective.

> USEPA has requested comments on its proposal of additional handling requirements in hopes of minimizing mercury emissions during storage and transportation. The handling methods proposed by USEPA in the universal waste option will needlessly increase the cost of managing mercury-containing lamps. The same "emissions" that would occur if lamps are crushed on-site for consolidation will still occur at MSWLFs during the compacting process. Requiring mercury-containing lamps to be shipped intact will drive up transportation costs and artificially inflate disposal costs. The disposal cost at most, if not all, landfills is based on the amount of cubic yard size of the container. It does not take many intact lamps to occupy one cubic yard. It may be more cost-effective and environmentally protective to package the condensed lamp waste in thick, or double-lined polyethylene bags, similar to the handling of asbestos waste. The controlled consolidation of lamps would appear to be more protective of the environment than an ad hoc procedure of crushing the lamps as they are deposited at the MSWLF. Further, by not allowing consolidation before shipment (under either option), USEPA will cause transportation costs and vehicle emissions to increase. Consolidation of lamp waste allows for more lamps to be transported in one vehicle, reducing vehicle miles traveled and transportation costs. DP&L strongly encourages USEPA to investigate alternative environmentally sound practices for consolidating lamp waste, rather than require the intact shipment of lamps.

RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards). Under the universal waste approach, hazardous waste lamps may not be sent to municipal solid waste

landfills.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00122
COMMENTER American Electric Power Service Corp.
SUBJECT EXCL5
COMMENT Our Companies strongly support the ability of generators to engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other DSM programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00129
COMMENTER Automated Energy Controls
SUBJECT EXCL5
COMMENT If you continue to discourage group relamping through costly disposal practices it will result in a continued larger energy consumption. This will result in significant air pollution. AEC is not happy with the limited conditions proposed for the conditional exclusion. Because we may be responsible for the disposition of lamps we would prefer to see record keeping requirements for transporters. We feel that crushing is often the most cost prohibitive way of disposal as it reduces the volume of lamps by 90%. Crushing can be done with proper controls. We recommend that the conditional exclusion include provisions for safe, on-site crushing. And of course, compliance with OSHA mercury standards. AEC supports environmentally sound recycling of lamps. We need assurance that recycling will be safe. We recommend that controls be imposed on air emissions of mercury during the recycling process and that the OSHA workplace standard for mercury be applied. We believe that the levels of mercury should be limited to avoid unsafe exposure.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management

of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery. It is prudent for the generator to ensure proper disposal or recycling of the hazardous waste lamps.

Nothing in the final rule governing the management of lamps changes the status of lamp management facilities in regard to the applicability of OSHA requirements. Facilities managing hazardous waste lamps including recyclers, must comply with all applicable Clean Air Act requirements and OSHA requirements governing worker safety.

DCN FLEP-00134
COMMENTER Aetna Life and Casualty Company
SUBJECT EXCL5
COMMENT Intentional Crushing by Generators. USEPA requests comments concerning, the crushing of lights by generators to minimize storage volumes (Section V.B.2). Aetna supports the USEPA position -- no crushing by generators -- given the past hazards associated with this practice [Footnote 3: ibid., pp. 139-140.] and believes that this standard should apply to the conditional exclusion. Aetna requests, though, that the USEPA consider developing and incorporating language which allows preliminary processing e.g., crushing, on-site by others provided acceptable technology and decontamination procedures are used.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management

of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing

for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00137
COMMENTER Planned Lighting, Inc.
SUBJECT EXCL5
COMMENT Additionally there would be packaging requirements for both the storage and transportation which would minimize environmental release. As we believe that a practical approach to lamp disposal would include crushing the lamps on site and transporting the crushed material to either subtitle D disposal or to a recycler, we are concerned that the universal waste disposal prohibits such crushing and that the exclusion is silent on it. By crushing fluorescent lamps you reduce the storage and transportation costs by reducing the volume more than 90%. It is essential, therefore that the conditional exclusion include provisions for on-site crushing, as long as it. is in compliance with OSHA mercury standards. It would be advisable to allow crushing at off-site storage locations, to allow flexibility.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and

transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air borne sources of mercury.

DCN FLEP-00140
COMMENTER Texas Utilities Services, Inc.
SUBJECT EXCL5
COMMENT Crushing the lamps before shipment not only minimizes space requirements in the landfill but also reduces transportation costs, trips and further transportation related emissions. EPA's own analysis of lamp crushing technologies shows that crushing can be done in a manner which is protective of human health and the environment and is cost-effective as well. Texas Utilities opposes any elaborate packaging scheme for transporting and disposing of the lamps.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

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As explained in today=s preamble, the Agency has found that breakage of spent lamps during storage and transport can be a significant source of mercury releases. Therefore, today=s final rule includes specific packaging standards for handlers of hazardous waste lamps to ensure the proper management of spent lamps and to prevent uncontrolled and unintentional breakage during storage and transport, therefore preventing releases of mercury to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00142
COMMENTER The Fertilizer Institute
SUBJECT EXCL5
COMMENT D. EPA Should Not Add Packaging Requirements to Option I.

EPA requested comments on whether to add to the proposed conditional exclusion "handling requirements to minimize mercury emissions during storage and transportation (e.g., packaging to reduce breakage)." 59 Fed. Reg. 38,294. For the following reasons, TFI would be opposed to the addition of any breakage-resistant packaging requirements to the proposed conditional exclusion. First, a requirement to package spent fluorescent bulbs in breakage-resistant packaging could substantially increase the transportation costs associated with disposal of spent lamps. This would, in turn, create the same types of economic barriers to relamping that current hazardous waste disposal requirements create. For example, one TFI member estimates that it would cost $2,500 to transport 1,000 four-foot spent fluorescent lamps in their original packages to a landfill. By contrast, it currently costs the TFI member $350 to transport and dispose of one 55-gallon drum containing 1,000 four-foot crushed fluorescent bulbs in a Subtitle C facility. Thus, if the exclusion applied only to lamps placed in breakage-resistant packaging, the transportation cost alone could drive generators to dispose of the bulbs in Subtitle C facilities and, thereby render the conditional exclusion meaningless. Second, there is no information in the administrative record which supports the conclusion that broken mercury-containing lamps pose a health risk in the workplace.[1] (Footnote 1: TFI notes, however, that EPA's Background Document entitled "Management of Used Fluorescent Lamps: Preliminary Risk Assessment" (RTI, October 1992) concludes: "Based on our preliminary exposure estimates, there appears to be little potential for direct human exposure to mercury emissions from either MSW landfills, MWC facilities, or fluorescent lamp recycling operations." Background Document at p. 169.) Therefore, there is no scientific basis for the agency to mandate breakage-resistant packaging as a condition of the exclusion. If EPA decides to include anti-breakage handling procedures as part of the conditional exclusion, TFI recommends that generators be given the option of utilizing fluorescent lamp crusher systems equipped with mercury vapor control (such as the Dextrite "ULC-55FDA"). Although such systems are relatively expensive (the Dextrite system costs approximately

> $4,500), they reduce the volume of lamps which, in turn, lowers die unit cost of transporting spent fluorescent lamps to disposal sites. In this regard, as noted above, approximately 1,000 four-foot fluorescent bulbs, when crushed, will fit into a single 55-gallon drum. The cost of transporting one 55-gallon drum is far less than the cost of transporting 1,000 four-foot fluorescent bulbs.

RESPONSE

The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519),

the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00144
COMMENTER National Rural Electric Cooperative Assn
SUBJECT EXCL5
COMMENT NRECA and its membership strongly supports the ability of generators to engage in materials separation and consolidation (e.g., crushing) of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other demand side management (DSM) programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste

lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s

internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00145
COMMENTER ASTSWMO
SUBJECT EXCL5
COMMENT The conditional exclusion alternative does not include any management standards for transportation or storage of lamps. Therefore, most lamps will be broken long before they are capped in a landfill (e.g., during discard, collection, compaction, transportation and tipping). In fact, the National Electric Manufacturer's Association (NEMA) suggests, in a correspondence to the States requesting support for the conditional exclusion, that the proposed conditional exclusion should include provisions for "safe" on-site crushing of waste fluorescent lamps, which could be accomplished by requiring generators to follow OSHA standards for mercury emissions from the lamps. We believe that simply requiring on-site crushing operations to meet OSHA standards would not be sufficient to ensure protection to human health and the environment. OSHA standards are used to ensure protection of workers at the facility, not to ensure long term protection of human health and the environment outside of the facility. Therefore, the OSHA standards would not preclude any on-site crushing operations from venting significant concentrations of mercury to the outside air in order for the crushing operation to ensure compliance with the OSHA standards inside the building. Additionally, the new federal clean air act provisions do not require permits for mercury air emissions until a facility reaches a potential of ten (10) tons or twenty thousand (20,000) pounds of mercury emissions or a potential of twenty five (25) tons or fifty thousand (50,000) pounds of any combination of toxic air pollutant emissions. Therefore, significant quantities of mercury could be emitted from multiple sites throughout the nation due to "safe" lamp crushing operations. These emissions would significantly exacerbate the damage mercury is already causing to human health and the environment. Even if we felt that OSHA standards were adequate to ensure protection of human health and the environment from on-site lamp crushing, it would be impossible for State

regulatory agencies to ensure that the OSHA standards were met due to the fact that fluorescent lamps are such a ubiquitous waste.

RESPONSE

The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

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DCN FLEP-00148
COMMENTER Total Lighting Maintenance and Electric
SUBJECT EXCL5
COMMENT Crushing. Total lighting maintenance would ideally like to see this as the most viable means of disposing of fluorescent lamps. They can be crushed "on-site," reduce the storage and transportation costs, and could be in total compliance with OSHA mercury standards. By being allowed to crush lamps on-sight thereby reducing their volume up to 90%, you can see how much easier they become to handle. When we work in manufacturing area, the problem of space is always an issue. Storing 4' x 4' pelletized transportation cases is a big problem for us with plant managers. And of course they don't want to hear about getting enough cases together for a truck to pick up, they want that floor space for their product! It only causes friction. Until a uniform national approach is in place, we can't educate our customers on the proper handling of their fluorescent and hid lamps.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment

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DCN FLEP-00151
COMMENTER Association of American Railroads
SUBJECT EXCL5
COMMENT The railroads recommend, however, that EPA impose handling requirements which will decrease the likelihood of any true environmental risk, increase the support of environmental groups, and make this alternative more feasible for EPA.
RESPONSE
The Agency agrees with the commenter that handling requirements should be imposed which decrease the likelihood of environmental risk. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. Studies show that the greatest threat of

mercury releases from the management of lamps is during storage and transport. The universal waste rule provides a format for controlling the management of spent lamps during storage and transport, while at the same time providing a more streamlined and less stringent set of standards than the subtitle C management requirements. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00156
COMMENTER National Electrical Manufacturers Assn.
SUBJECT EXCL5
COMMENT In addition to the sunset provision on landfilling, the rule should also contain provisions that address the crushing of spent lamps. Proper crushing reduces the volume of spent lamps by 80 percent and results in the capture of the majority of the mercury in the filter device. The filters can then be sent to mercury reclamation facilities or to hazardous waste landfills. The crushed glass and end caps can be sent for recycling or disposal depending on product quality and the availability of appropriate markets. Transportation of vast quantities of intact spent lamps for crushing at the final destination facility, be it a landfill or a recycling operation, is not sensible from an environmental or energy perspective. Crushing saves transportation resources, reduces transportation-related air emissions, and vastly reduces the need for packaging material.

> [13] (Footnote 13: Requiring the transportation of intact lamps, as is called for under the Universal Waste option, actually increases the amount of waste packaging material needed in the situation of a Universal upgrade because the containers for the more energy-efficient and smaller T-8 lamps do not hold an equal number of older and, larger T-12 lamps. Transportation of intact lamps also creates the potential for mercury contamination of the storage boxes due to breakage in transit.) Since technology exists to adequately and practically control the release of mercury vapor to less than 0.005 mg/m3, which is more than an order of magnitude lower than the current Occupational Safety and Health Act (OSHA) standard of 0.1 Mg/M3, NEMA believes that crushing, if properly controlled, should be allowed under the exclusion at all locations where spent lamps are managed.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

Nothing in the final rule governing the management of hazardous waste lamps changes the status of lamp management facilities in regarded to the applicability of OSHA requirements. Facilities managing hazardous waste lamps must comply with all applicable OSHA requirements governing worker safety.

DCN FLEP-00156
COMMENTER National Electrical Manufacturers Assn.
SUBJECT EXCL5
COMMENT 2. Storage Requirements--necessary to minimize breakage or uncontrolled releases of mercury prior to final disposition. a. Requirements apply at all storage locations, including generator sites, transfer facilities, off-site storage facilities, landfills, treatment facilities, and recycling facilities. b. Store intact spent lamps in original cartons or specially designed lamp containers labeled "Spent Mercury-Containing Lamps". Storage areas must have concrete pad and weather protection or, c. Store crushed and unintentionally broken lamps in closed drums or other puncture-proof containers which are labeled 'Spent Mercury-Containing Lamps'. d. Storage of spent, intact lamps limited to one year or 30,000 lamps, whichever is exceeded first. (Storage of a greater number of spent lamps would require a state storage permit.) e. Storage limited to one year for crushed or broken lamps. 3. Control of Air Releases from Crushing (at all crushing locations, including recycling facilities)--necessary to minimize risk from air

releases of mercury and to allow regulatory inspections of facilities with large volume crushing activities. a. Crush in compliance with all applicable OSHA standards, including but not limited to the acceptable ceiling concentration of 0.1 Mg/M3, the Hazard Communication Standard (29 CFR 1910.1200), the Respiratory Protection Standard (29 CFR. 1910.134), and employee exposure and medical records (29 CFR 1910.20). Embedded in the OSHA rules are requirements for hazard assessment, communications, training, ventilation, personal monitoring, control evaluation, use of personal protective equipment recordkeeping, reporting, etc. [15] (Footnote 15: Implementation of cost-effective available technology (i.e., charcoal filters) is able to achieve and confirm releases of mercury vapor less than 0.005 mg/m3, more than an order of magnitude lower than the current OSHA standard.) b. Crushers must effectively capture all freely available mercury so that they are protective of human health and the environment. c. Keep records for three years of number lamps crushed. Notification required if more than 30,000 lamps in a year (This amount would cover commercial recycling/ crushing establishments and very large buildings doing group relamping and crushing on-site.) d. Keep records for three years of intended disposition of mercury-contaminated filter and recovered glass and metal components other than mercury. 4. Segregated Transportation--necessary to prevent intact spent lamps from uncontrolled breakage. a. All lamps must be drummed or boxed whether crushed or intact. b. All lamp shipments must have shipping papers indicating the generator and the intended receiving facility.

RESPONSE

The Agency appreciates the commenter's suggestions addressing the storage and handling of hazardous waste lamps. In today=s final rule, the Agency is finalizing management standards for hazardous waste lamps within the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could

include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The Agency also notes that today=s rule does not change any regulatory requirements applicable to destination facilities (i.e., recycling facilities and treatment and disposal facilities). Under today=s rule, those facilities are subject to all Subtitle C management requirements applicable to hazardous waste treatment, storage, and disposal facilities, although the Agency does not regulate the actual process of reclaiming mercury. In addition, recycling facilities (as well as Adownstream@ facilities that reuse the recycled products) must comply with all applicable Clean Air Act requirements, all applicable worker safety standards under the Occupational Safety and Health Administration (OSHA), and all applicable state controls (including possible best management practices or other controls on the recycling process).

Residuals from recovery operations must also be managed in accordance with all applicable solid and hazardous waste management requirements. If residuals exhibit a characteristic of hazardous waste, they must be managed in accordance with all applicable hazardous waste management controls, including the requirements of 40 CFR Subpart C, standards for recyclable materials used in a manner constituting disposal.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

Nothing in the final rule governing the management of hazardous waste lamps changes the status of lamp management facilities in regarded to the applicability of OSHA requirements. Facilities managing hazardous waste lamps must comply with all applicable OSHA requirements governing worker safety.

DCN FLEP-00156
COMMENTER National Electrical Manufacturers Assn.
SUBJECT EXCL5
COMMENT (iii)the landfill disposes of crushed lamps in closed drums or containers; (iv)the landfill disposes of boxed, intact lamps in such a mariner that breakage and thus air emissions of mercury do not occur; and
RESPONSE

The Agency appreciates the commenter's suggestions for handling of hazardous waste lamps at landfills. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards). Under the universal waste approach, untreated hazardous waste lamps may not be disposed of in municipal solid waste landfills.

DCN FLEP-00160
COMMENTER Central and South West Services, Inc.
SUBJECT EXCL5
COMMENT Crushing of lamps is environmentally safe and must be allowed in order to reduce volume, facilitate storage and promote economies of scale.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00160
COMMENTER Central and South West Services, Inc.
SUBJECT EXCL5
COMMENT VI. CRUSHING IS AN ENVIRONMENTALLY SOUND AND ECONOMICALLY PRACTICABLE FORM OF LAMP MANAGEMENT THAT MUST BE PRESERVED

EPA solicits comments on whether generators, or if the Agency selects the universal waste option, consolidation points, should be allowed to crush lamps prior to off-site management. Id. at 38297. CSW believes that it is absolutely imperative to preserve this management option in order to facilitate transportation, disposal and recycling by reducing the volume of materials and promoting economies of scale. The record makes clear that crushing practices can done in an environmentally sound manner and thus there is no practical reason for barring this management option. A. Crushing Can be Conducted in an Environmentally Sound Manner EPA's analysis of lamp crushing technologies reveals that generators are perfectly - capable of employing appropriate technologies to conduct crushing in a manner that is both protective of human health and the environment, and cost-effective. EPA Report Evaluation of Mercury Emissions From Fluorescent Lamp Crushing, Control Technology Center (Feb. 1994)("Report"). EPA's Report points out that crushing of mercury-containing lamps serves two vital purposes: to recover mercury from the lamps and to reduce the volume of the lamps being disposed in landfills. Report at 8.

According to the Report, recovery of mercury in lamps, which begins with crushing, is "desirable," as recovery results in a net reduction of mercury released to the environment. Id. at 22. EPA's Report discusses at least two "well-controlled crusher systems" which use a vacuum collection system to prevent release of mercury. Id. In both cases, the air is passed through a cyclone, a HEPA filter and a carbon absorber before being exhausted. The cyclone removes glass particles; the HEPA filter removes the phosphor powder, which contains most of the mercury; and the carbon absorber captures mercury vapor. Id. at 22. These controls, the Report notes, reduce mercury levels near the crusher to "well below the 0.05 mg/m3 OSHA limit," which implies an emission reduction of at least 90 percent. Id. at 23 (emphasis added). Such crushers result in mercury emissions "well below" OSHA limits. Id. at 23. Thus, at a minimum, crushing can be conducted in an environmentally sound manner in these two types of units. Therefore, while CSW believes that crushing must be performed in an environmentally protective manner, there is absolutely no basis for a total prohibition on this important management practice. Crushing can take place in a closed container where it can be confirmed OSHA permissible exposure limits ("PELs") are met. (Fn. 11 - In fact, some utilities currently engage in this practice. One utility comments that as long as this type of equipment is used according to manufacturers' specifications and the waste material is properly packaged, crushed lamps should be acceptable for landfilling. Comments submitted by Wisconsin Power & Light Company to RCRA Docket (Oct. 25, 1994)). Thus, crushing of lamps should be authorized provided that the entity engaging in such operations is -equipped with an adequate crusher. Furthermore, CSVV is adamantly opposed to any restriction that authorizes crushing only at recycling facilities. There is no legitimate technical or legal basis for authorizing crushing at commercial recycling facilities, while prohibiting similar conduct by generators. Provided that both types of entities are capable of performing such activities adequately -- which they are -- it would be arbitrary and capricious to authorize crushing by only recyclers, while depriving generators of the same management option. B. The Management Option of Crushing Lamps Makes Participation in Green Lights Economically Practicable As discussed above, crushing allows lighting waste generators to minimize waste volume in an

environmentally safe and efficient manner. Thus, prohibiting crushing would simply impose an unnecessary burden on generators and would complicate and impede disposal or recycling. In addition, requiring individual packaging or re-use of containers in which new lamps are received would drive up costs substantially and frustrate participation in Green Lights and similar programs. These concerns are borne out in the individual comments of USWAG members, who are key participants in the success of energy- efficient relamping programs.- For example, one utility has explained that a prohibition on crushing may offset any cost savings produced by easier consolidation or transportation under the universal waste proposal. Another utility, cautioned in its comments that "[a]llowing companies to separate wad consolidate [, crush] their spent lamps allows do materials to be more efficiently managed. Any prohibition on such activities drives up costs and further discourages participation in Green Lights and similar programs." Comments submitted by Union Electric Company to RCRA Docket at 2 (Oct. 27, 1094). Other utilities have expressed similar concerns.- Comments submitted by Monongahela - Power Company, Potomac Edison Company and West Penn Power Company (Oct. 10, 1994) Southern Company (Sept. 22, 1994); Potomac Electric Power Company (Sept. 21, 1994); Georgia Power Company (Sept. 16, 1994). C. Regulatory Implications of Crushing It is important that EPA clearly articulate in the final rule the regulatory implications of crushing mercury-containing lamps. Of course, this issue becomes less complicated under the conditional exclusion option because the management of mercury-containing lamps would fall outside of the Subtitle C system. However, if EPA selects a management scheme that keeps mercury- containing lamps within the Subtitle C (despite the technical record that argues against this), the potential regulatory complications of crushing become more complicated. In the proposal, EPA broadly classifies crushing as "treatment." 59 Fed. Reg. at 38297. While (CSW acknowledges that crushing that is undertaken intentionally to reduce the volume of a waste to render it more amenable for storage, transport or disposal is "treatment" as that term is defined by EPA (40 C.F. R. ' 260.10), it is important that the Agency reiterate that such "treatment" can be conducted without a permit under the so-called 90-day accumulation rule. See 40 C.F.R' 262.34; 51 Fed. Reg. 10146, 10160 (March 24, 1986). Preservation of this option under any

type of Subtitle C regime (including the universal waste option) is absolutely critical to enable participants in energy-efficient relamping programs to consolidate and package lamps in an economical manner for off-site recycling or disposal. It also is important for EPA to clarify -- as it has done in the past that not all activities that result in altering the physical characteristics of lamps is necessarily "regulated" treatment. Specifically, the Agency has explained on several occasions that the physical alteration of a material that is incidental (i.e., not intended) to transportation or collection is not "regulated" treatment -- , in other words, a permit is not required for such unintended, incidental changes to the physical composition of a waste. Letter from Skinner, Director, Office of Solid Waste, EPA, to Scarbrough, Chief, Residuals Management Branch, EPA Region IV (Nov. 26, 1984) (process that is simply to "facilitate disposal" does not constitute "treatment"); Letter from Williams, Director, Office of Solid Waste, EPA, to Manthey, GW Inc. (Sept. 10, 1985) (bulking and consolidating of waste from multiple generators in a single tanker truck does not constitute "treatment"); Letter from Lowrance, Director, Office of Solid Waste, EPA, to Jaekels, GSX (Government Services Inc. (March 1, 1990) (incidental effects of bulking of hazardous waste to facilitate transportation may not meet the definition of treatment, since there is no intent to render the wage nonhazardous or less hazardous). See also United States v. Great Lakes Casting Corp., No. 1:92-CV-645 (W.D. Mich. March 23, 1994). This point is especially important in the case of lamps that are removed from service during relamping activities which, as a result of consolidation or transportation activities, may undergo changes in physical composition incidental to such activities. If such "changes" are purely incidental to the associated consolidation and/or transportation activities, then such activities do not fall within the definition of "treatment" as defined by EPA and do not trigger RCRA's permit requirements.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under Part 273. The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources

from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

EPA notes that unintentional breakage of lamps during storage or transport would not be considered treatment under RCRA. Nevertheless, the final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable

conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The universal waste rule will encourage participation in energy-efficient lighting programs because standards are less stringent and less costly than full Subtitle C management standards. A significant number of commenters indicated that savings from reduced energy usage more than covers the cost of managing lamps as hazardous waste. Reduced management costs associated with the final hazardous waste lamps rule should encourage additional participation in energy-efficient lighting programs and increase recycling of lamps.

Today=s final rule does not affect current policy which states that any changes in the physical composition of a waste incidental to the transportation of the waste do not fall within the definition of Atreatment@ subject to RCRA permitting requirements.

DCN FLEP-00161
COMMENTER American Forest and Paper Association
SUBJECT EXCL5
COMMENT IV. Packaging/Handling Regulations. AF&PA opposes adding special handling and packaging requirements to the conditional exclusion. In the preamble to the proposed rule, EPA noted that special handling and packaging requirements might be necessary to minimize mercury emissions from the breakage of spent lamps. See 59 Fed. Reg. At 38294. AF&PA believes such additional requirements are not necessary to protect human health or the environment because OSHA regulations already strictly limit mercury emissions in the workplace. Employers that package, store, or crush spent lamps are already covered by OSHA air contaminant regulations set forth at 29 C.F.R. ' 1910.1000 (setting the permissible exposure limit for mercury or its inorganic compounds at an 8-hour time weighted average of

1mg/M3). OSHA has also published specific guidelines for controlling exposure to mercury in the workplace pursuant to its authority under 29 C.F.R. '' 1910.132-1910.149. The guidelines identify steps employers should take to ensure that accidental and intentional releases of mercury do not exceed the permissible exposure limit. Because applicable OSHA regulations and guidelines already cover mercury emissions from the breakage of spent lamps, additional regulation under RCRA is duplicative, and will create unnecessary confusion.

RESPONSE

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

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DCN FLEP-00163

COMMENTER Massachusetts Dept. of Environ. Prot.

SUBJECT EXCL5

COMMENT C. Other Comments (on both Options) 1. Should generators be allowed to intentionally crush lamps to minimize volume for storage or shipment: MA DEP does not currently favor allowing crushing of hazardous SFLs by generators (at the site of generation) as a packaging technique to allow shipment of a smaller volume of SFL waste for recycling. MA DEP is primarily concerned with the hazards posed to generator personnel by

crushing and dismantling practices that would have very little regulatory oversight. MA DEP may reconsider this position as new on-site lamp dismantling technologies, that are both protective and easy to use, become available.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program

may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00164
COMMENTER E.I. Du Pont De Nemours and Co., Inc.
SUBJECT EXCL5
COMMENT Generators or consolidation points should be allowed to intentionally crush lamps to minimize volume for storage or shipment. The Agency should clarify that all parts of broken lamps are eligible for the exclusion or exemption.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste

management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00164
COMMENTER E.I. Du Pont De Nemours and Co., Inc.
SUBJECT EXCL5
COMMENT The exclusion should not include requirements to minimize mercury emissions during storage and transportation. DU PONT DOES NOT BELIEVE THAT ANY EXCLUSION SHOULD INCLUDE REQUIREMENTS TO MINIMIZE MERCURY EMISSIONS DURING STORAGE AND TRANSPORTATION DuPont believes that existing RCRA requirements to keep containers closed except when waste is being added or removed and Department of Transportation (DOT) packaging requirements will adequately prevent mercury emissions during the storage and transportation of spent lamps. Since the EPA and the DOT have a Memorandum of Understanding delineating the areas of responsibility for both agencies regarding transportation and packaging issues, DuPont suggests that the EPA merely reference appropriate DOT transportation and packaging requirements as adequate for compliance with the

requirements of RCRA.

RESPONSE

The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272. The Agency believes that these requirements are more appropriate for hazardous waste lamps than the more general DOT requirements.

DCN FLEP-00164

COMMENTER E.I. Du Pont De Nemours and Co., Inc.

SUBJECT EXCL5

COMMENT DU PONT SUPPORTS THE AGENCY'S "DEFINITION OF SOLID WASTE TASK FORCE" RECOMMENDATION TO ALLOW INCIDENTAL PROCESSING The issue of mercury-containing lamp crushing being defined as a form of waste treatment under RCRA has created a highly interpretive situation. DuPont believes that most States either consider lamp crushing to be a form of RCRA treatment or have not yet finalized their positions in the absence of clear guidance from the Agency. However, the State of Ohio has offered the following interpretation in a November 23, 1992 letter from Donald Schregardus to M.E. Mitchell of Martin Marietta Energy Systems, Inc.: "The Ohio EPA does not consider the crushing of

spent fluorescent lamps by a generator to be treatment. We consider the consolidation of this waste stream to be a prudent management practice by a generator to avoid possible releases of hazardous waste". A copy of the Ohio EPA letter is provided in Attachment 1. As you know, DuPont maintains manufacturing facilities in some twenty (20) states and territories, and therefore desires a clear position from the Agency supporting the practice sending spent lamps intact to a designated DuPont facility where the bulbs would be crushed prior to recycling or disposal. DuPont believes that where lamp crushing is undertaken, measures to minimize exposure of personnel to mercury vapor or dust and to minimize the releases of hazardous substances to the environment should be undertaken. These measures could include OSHA requirements, such as the use of appropriate personal protective equipment (e.g. respirator, Tyvek coveralls) as 'well as the use of lamp crushing devices that provide some type of control device for 'mercury emissions (see Attachment 11), or crushing of lamps in units such as containment buildings that are designed to control emissions to the atmosphere. Since existing OSHA, Clean Air Act and RCRA requirements adequately address employee exposure and control of emissions to the environment, DuPont does not believe that the Agency should do more than cite the appropriate subparts of applicable statutes/regulations (e.g. HAZCOM, Clean Air Act Title V Operating Permits, RCRA Requirements for Containment Buildings and Open Containers). DU PONT REQUESTS THAT THE AGENCY CLARIFY THAT ALL PARTS OF BROKEN LAMPS REMAIN ELIGIBLE FOR THE EXCLUSION OR EXEMPTION

Mercury-containing lamps generally become broken either accidentally through handling or deliberately through crushing to reduce volume. Through breakage, the metal end caps of fluorescent lamps may become separated from the shattered glass tube and may become completely free of glass. For an occasional broken lamp, it is possible that metal end caps free of glass could be sent for recycle by the site as scrap metal. However, when crushing several hundred bulbs in a commercially available crushing device, generators believe it is impractical to sort metal end caps from glass and phosphor powder. Many lamp recycling facilities recycle each component of the lamp (i.e. metal, glass, mercury, phosphor powder), while others merely arrange for disposal of the components upon separation and cleaning. Therefore, DuPont requests that the

Agency clarify in either the preamble to any final rule or in a revised definition of "mercury-containing lamp", that metal end caps are clearly included as eligible for any exemptions provided for both intact and crushed bulbs. Failure to fully explain this point in any final rule will likely result in a number of requests for regulatory directives clarifying Agency and State positions on this issue.

RESPONSE

The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

With respect to the use of metal end caps, EPA believes that the definition of Alamp@ promulgated in today=s rule (which refers to the bulb or tube portion of an electric lighting device) clearly includes end caps.

DCN FLEP-00165
COMMENTER Ohio Chamber of Commerce
SUBJECT EXCL5
COMMENT Crushing. We are particularly concerned that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. Our members believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% And thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to

situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00166
COMMENTER American Electric Power Service Corp.
SUBJECT EXCL5
COMMENT The proposed packaging, handling, record keeping, notification, and certification requirements associated with the conditional exclusion are unnecessary and we request that these added requirements be removed.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

DCN FLEP-00166
COMMENTER American Electric Power Service Corp.
SUBJECT EXCL5
COMMENT b. Additional handling/ packaging requirements in the conditional exclusion art unnecessary and should not be included. EPA requests comments on whether it is necessary to add to the exclusion handling requirements to minimize mercury emissions during storage and transportation (see 59 FR 38294, Column 3). Technical data have shown that management of lighting waste as municipal solid waste does not pose a risk to human health and the environment. These data have been generated by study of past lighting waste management practices and their impacts, if any, on the environment. Through the study of past practices (where lighting waste was not handled in any special way) no risk to human health and the environment was identified. Thus the technical evidence has already shown that there is no need for special handling or packaging requirements. Once again, if generators are not given the flexibility to employ justifiable practical solid waste management techniques to their lighting waste, EPA's efforts to resolve this issue will be thwarted. Therefore AEP does not support the addition of handling/ packaging requirements to the proposed exclusion.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed

lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

DCN FLEP-00167
COMMENTER Florida Power and Light Company
SUBJECT EXCL5
COMMENT Also in line with USWAG comments, Florida Power and Light Company strongly supports affording generators of lighting waste with several pre-disposal management options with which to manage their lighting waste, which will achieve the same environmental goal. Whether this involves dismantling, crushing, or consolidation of lamps prior to reclamation or disposal, a certain amount of flexibility needs to be allowed to facilitate storage and transportation of these materials.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program

may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00168
COMMENTER Merck and Company, Inc.
SUBJECT EXCL5
COMMENT Merck has a few other concerns with the proposal. EPA states that if a mercury-containing lamp is broken, the conditional exclusion is no longer valid. There is no way for the generating industry to completely avoid lamp breakage. Currently, if lamps are sent to recyclers and are broken during transit, despite careful packaging, the recycling charge is significantly greater because of increased handling requirements for the recycler. Furthermore the lamps when landfilled, will be broken and usually before they are placed there. There does not appear to be a requirement for the landfill operator to ensure that the lamps are unbroken when placed in the cell nor should there be. EPA should not negate the exemption simply because a lamp is broken in the packaging. Also, packaging similar to that for a new lamp should be sufficient. If significant changes in packaging are required for used tubes, the amount of solid waste could increase significantly.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

EPA acknowledges that, as a practical matter, the complete elimination of unintentional lamp breakage during storage and transport is not possible. However, the Agency points out that the final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps

must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids (this kind of packaging does not differ significantly from that used for the shipment of new lamps). Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

DCN FLEP-00170
COMMENTER National Assn. of Energy Services Comp.
SUBJECT EXCL5
COMMENT B. A Regulatory Regime Applicable to the Handling of Lamps From the Point of Generation to the Point of Recycling or Disposal Should Be Adopted. Adoption of the Universal Waste Rule for mercury-containing lamps offers several benefits. In particular, it already incorporates a number of measures appropriate to regulatory regime treating lamps as a special waste with tailored management provisions, while, again, encouraging recycling, may be considered. In fact, such a regime might better reflect nuances unique to spent lamp management. However, irrespective of the course the EPA elects, as part of its final rule governing the management of waste lamps, NAESCO would encourage the EPA to develop regulatory measures appropriate to the handling, storage and transportation of spent mercury-containing lamps. Issues relevant to handling, storage and transportation are particularly important in the case of lamps since they are fragile and since, unbroken, they represent a relatively large volume of waste. Clearly the primary goal of management from the point of generation to the point of disposal or recycling is to reduce lamp breakage. A further goal, as technologies develop, should be to encourage volume reduction for transportation in order to reduce the negative environmental impacts associated with the transportation of large volumes of intact lamp. NAESCO encourages the EPA to provide specific instruction with respect to onsite storage; crushing, to the extent technologies are available; transportation from the point of generation to interim collection points or to the disposer or recycler if the

Universal Waste Rule is not adopted or if interim collection points are not used.

RESPONSE

The Agency would like to thank the commenter for supporting the proposed universal waste rule. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

Studies conducted by the Agency indicate that a significant potential for mercury emissions from spent lamps occurs during storage and transport. Today=s final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in

volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00171
COMMENTER Monsanto Company
SUBJECT EXCL5

2. The Agency Should Not impose Special Handling Requirements as a Condition for the Exclusion. Many millions of Hg-lamps are directed to MSW landfills today without abnormal concerns related to the physical safety of this action. This should not prompt the Agency to impose special handling requirements. At the same time, NEMA has reported work done by Lawrence Berkeley labs and others which demonstrates that 0.2%

or less of the contained mercury in a bulb is released if the lamp is broken. in fact, if the shards are exposed to room air for one hour, this percentage only rises to 1%. Clearly, the largest part of the mercury in a used lamp is imbedded in the lamp phosphor and glass and is not exposed to the air. (See the comments submitted separately by NEMA.) The Agency should not impose "handling requirements to minimize mercury emissions during storage and transportation," as they propose. (59 FR 38294, 2/27/94)

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency=s data indicate that there is a significant potential for releases of mercury due to lamp breakage during storage and transport. Therefore, today=s rule requires that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

DCN FLEP-00174

COMMENTER Illuminating Engineering Soc. of N. Am.

SUBJECT EXCL5

COMMENT Position on the Conditions of the Exclusion

Record keeping/Transportation. The conditions proposed for the conditional exclusion appear limited. Since generators of spent lamps remain ultimately responsible for the disposition of the lamps, there is a need for record keeping requirements for transporters to ensure delivery to designated destination facilities and packaging requirements for storage and transportation to minimize environmental releases. Such requirements are necessary to protect the interests of the generators in responsible downstream management.

Crushing is of concern that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. A practical method of disposal often involves crushing the lamps at the generator's

site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site locations.

RESPONSE

The Agency does not believe that the proposed conditional exclusion option would sufficiently protect human health and the environment. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

Today=s rule also contains recordkeeping requirements for large quantity handlers of hazardous waste lamps. A large quantity handler is required to keep a record, of each shipment of universal waste both received and sent off-site from the facility. Records must be kept for three years from the date that the waste is received at the facility or sent off-site. A small quantity handler is not required to keep records of shipments of universal waste. Although the final rule does not include additional recordkeeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

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The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to

situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00179
COMMENTER Environmental Defense Fund
SUBJECT EXCL5
COMMENT We are concerned that a conditional exclusion from RCRA Subtitle C will result in extremely inadequate storage and transport conditions for spent lamps. Under a conditional exclusion, spent lamp storage and transport will be handled by a large number of unregulated "garbage collectors," who may crush lamps inadvertently or intentionally to decrease their volume, resulting in mercury vapor and mercury-containing phosphor emissions to the atmosphere.
RESPONSE
The Agency appreciates the commenter's suggestions addressing the storage and handling of hazardous waste lamps. In today=s final rule, the Agency is finalizing management standards for hazardous waste lamps within the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of waste management requirements (i.e., the universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00180
COMMENTER Food Marketing Institute

SUBJECT EXCL5

COMMENT FMI urges that EPA not move to adopt handling requirements under the conditional exclusion. Best industry practices based on OSHA standards can be implemented. Fluorescent tubes are not at all like batteries or the products being considered for a universal waste rule. They are long and very delicate; they break easily if dropped or mishandled; they must be retrieved from ceiling fixtures at great heights and handled one-by-one. Being so fragile and potentially injurious, fluorescent lamps simply have to be handled very carefully. Therefore, it is unnecessary to regulate relamping handling practices and the kind of storage container to be used. In addition, storage of spent bulbs in a supermarket after a relamping simply does not take place. Not only is relamping generally performed by a contractor who then takes the lamps away, but there is no extra storage space in the back rooms of supermarkets. The lamps have to go. FMI suggests that the conditional exclusion allow for the crushing of spent lamps in compliance with OSHA's either at the generator site or at a consolidation site. This flexibility will help make local relamping programs as efficient as possible, such as the New Jersey project mentioned earlier.

RESPONSE

The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

EPA=s data indicate that there is a significant potential for releases of mercury due to lamp breakage during storage and transport. Therefore, today=s rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. However, there is no requirement that the lamps be stored in a particular

geographical setting. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

DCN FLEP-00181
COMMENTER Exxon Chemical Americas
SUBJECT EXCL5
COMMENT ECA recommends that the Conditional Exclusion include practical provisions to ensure protective management and allow controlled crushing in compliance with OSHA mercury standards. This will allow for volumetric reductions in wastes transported.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available

to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00186
COMMENTER Building Owners or Managers Assn. Int.
SUBJECT EXCL5
COMMENT EPA also solicited comments on adding to the terms of the conditional exclusion handling requirements to minimize mercury emissions during storage and transportation similar to requirements proposed under the universal waste management system. BOMA believes these requirements would be overly burdensome. The high cost of compliance would only serve as a disincentive for consumers to utilize these products, and any added environmental benefit gained through these requirements would be lost. Therefore, we urge that this provision not be included.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

DCN FLEP-00187
COMMENTER PacifiCorp
SUBJECT EXCL5
COMMENT (6)Crushing of lamps is environmentally safe and must be allowed in order to reduce volume, facilitate storage and promote economies of scale.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency

allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00188
COMMENTER Westinghouse Electric Corporation
SUBJECT EXCL5
COMMENT Packaging requirements should be specified for the storage and transportation of intact and broken mercury-containing lamps. These packaging requirements should be flexible since the potential for a significant release is small.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or components of the lamps to the environment. Studies conducted by the Agency indicate that the greatest potential for mercury emissions from spent lamps occurs during storage and transport. The final rule requires that spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential

releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

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DCN FLEP-00188
COMMENTER Westinghouse Electric Corporation
SUBJECT EXCL5
COMMENT The Conditional Exclusion option is silent on the issue of whether generators would be able to crush lamps onsite prior to shipment. We suggest the inclusion of language that will explicitly allow lamp crushing onsite. This can be performed in a manner which is protective of human health and the environment by crushing the lamp in a closed container (i.e. steel drum) fitted with a vacuum pump and filter. The filter, which would capture the mercury, could then be managed as a hazardous waste. Prohibiting lamp crushing onsite would unnecessarily increase storage and transportation costs without any corresponding incremental increase in the protection of human health or the environment. This issue is particularly important for managing radioactive lamps due to storage limitations for mixed waste caused by insufficient final treatment/disposal/reclamation capacity. The regulations should incorporate as much flexibility as possible in order to encourage lamp management practices that are the most cost-effective.
RESPONSE
The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would

minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00191
COMMENTER Utility Solid Waste Activities Group
SUBJECT EXCL5
COMMENT However, the imposition of any additional "conditions" to qualify for the MSWLF option - such as detailed "best management practices" ("BMPs") - would undermine the very goals that the option is intended to achieve. Energy-efficient relamping programs are highly cost-sensitive and often involve many rural facilities and/or small businesses with minimal amounts of mercury-containing lamps. Imposing additional BMP conditions and associated costs on relamping efforts conducted by these types of entities will pose the very same regulatory inhibitions to relamping that are currently posed by the Subtitle C program. Indeed, to the extent that lamp management requirements become more burdensome than the management requirements applicable to nonhazardous industrial waste generally, USWAG is concerned that many electric utilities and their customers will simply refrain from participating in such efforts. Mercury-containing lamps have been and continued to be safety managed in MSWLFs and there is no technical justification for imposing an array of additional conditions on lamps to qualify for this management option.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00191
COMMENTER Utility Solid Waste Activities Group
SUBJECT EXCL5
COMMENT Recycling of mercury-containing lamps is a laudable management option, but disposal in qualified MSWLFs must remain a viable option for lamps. Crushing of lamps can be conducted in an

environmentally sound manner and must be allowed in order to reduce volume, facilitate storage and promote economies of scale.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or components of the lamps to the environment. Studies conducted by the Agency indicate that the greatest potential for mercury emissions from spent lamps occurs during storage and transport. The final rule requires that spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00197
COMMENTER Cincinnati Gas and Electric Company
SUBJECT EXCL5
COMMENT The Cincinnati Gas & Electric Company strongly supports the ability of generators to engage in materials separation and consolidation of spent lamps in an environmentally sound manner. Such activities are often necessary to facilitate storage and transportation and can be performed safely under appropriate conditions. Any prohibition on such activities simply drives up costs of compliance and frustrates participation in Green Lights and other DSM programs.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or

disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00204

COMMENTER American Lamp Recycling, Ltd.
SUBJECT EXCL5
COMMENT Another point the Agency has failed to account for is the amount of mercury from lamps that will never reach the landfill if the exclusion is promulgated. The proposed exclusion makes no provision for ensuring mercury-containing lamps are managed in a manner that prevents the release of mercury to the environment prior to land disposal Under option 1 we foresee a continuation of the too often seen roll-off containers full of broken lamps disseminating mercury containing phosphor powders and vapors, at retrofit job sites and along the transportation routes to the landfill, or, on-site treatment of lamps via crushing without regard to release of the lamps mercury vapor. Option 1 could allow a scenario under which the majority of the wastes hazardous constituent is released to the environment and the only material being land disposed is the components of the waste which are recoverable resources. Even if the Agency should decide to promulgate option 1, the exclusion must be revised to ensure that the on-site management aid transportation of lamps prevents the release of hazardous constituents to the environment prior to land disposal.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must

immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

DCN FLEP-00212
COMMENTER Pennzoil Company
SUBJECT EXCL5
COMMENT Regarding EPA's concerns with the breakage of mercury-containing lamps, Pennzoil would not be averse to a requirement to accumulate replaced lighting in the new lighting packaging, if the packaging can adequately maintain the replaced lighting materials. The packaged replaced lighting could then be shipped for disposal with minimal concern for breakage that could release mercury into the environment.
RESPONSE
The Agency agrees with the commenter that spent lamps should be shipped in such a manner as to prevent release of mercury into the environment. Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

DCN FLEP-00222
COMMENTER Columbus Southern Power & OH Power Co.
SUBJECT EXCL5
COMMENT LIGHTING WASTE HANDLING REQUIREMENTS
On the subject of handling requirements, CSP/OPCo believes crushing of the lamps should be allowed, as this is often necessary to facilitate storage and transportation and can be performed Safely under appropriate conditions.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria

established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe

crushing of hazardous waste lamps.

DCN FLEP-00224
COMMENTER Amtech Lighting Services
SUBJECT EXCL5
COMMENT B. Crushing. Amtech Lighting Services does not at this time do any lamp crushing, but we support the beliefs that the use of safe controlled on-site crushing (in OSHA compliance) as an alternative to boxing and shipping should be preserved.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal

wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

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DCN FLEP-00226
COMMENTER FMS Lighting Management Systems, Inc.
SUBJECT EXCL5
COMMENT There are other areas that also have an impact on this issue, what is the best method of disposal (crushing vs. recycling), transportation of new & used lamps, and the liability associated with the handling of fluorescent and HID lamps. We find it very difficult to advise our customers or to develop a company wide procedure and policy with respect to lighting upgrades and lamp disposal or recycling.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

Although the Agency believes that today=s rule is likely to encourage the recycling of hazardous waste lamps, the rule does not mandate such recycling. Therefore, the Agency was not required to ensure that adequate recycling capacity exists. However, EPA believes that as demand for recycling continues or increases, investment in reclamation facilities will also increase, thus leading to an expansion in capacity. Lamp generators who have concerns about the capacity or effectiveness of particular lamp reclamation facilities may continue to dispose of lamps in Subtitle C landfills.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste

lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage,

compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

DCN FLEP-00240
COMMENTER Luminaire Service, Inc.
SUBJECT EXCL5
COMMENT It is our opinion that it is practical to crush lamps at the generator's site for transportation to either subtitle D or to a recycler. With proper controls, crushing can be done safely and reduce the volume of lamps by more than 90% to reduce storage and transportation costs. The universal waste disposal prohibits lamp crushing and the exclusion does not address crushing at all. We think that the conditional exclusion should be amended to include allowing safe, on-site crushing and, for flexibility, to allow crushing at off-site storage locations. Of course, the crushing would be in compliance with OSHA mercury standards.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to

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The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00240
COMMENTER Luminaire Service, Inc.
SUBJECT EXCL5
COMMENT With the provisions that I outlined above (allow crushing,
record keeping by transporters, packaging requirements and

strict regulation of reclaimed products) included in the conditional exclusion, I feel that this is the best means of safe mercury-containing lamp disposal and will be of benefit to everyone involved.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage

units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The final rule requires universal waste handlers to manage universal waste lamps in a way that prevents releases of the lamps or the components of the lamps to the environment. Spent lamps must be packed to minimize breakage and packaging materials must be designed to contain potential releases due to breakage during transport. Universal waste lamps must be stored in containers or packages that remain closed, are structurally sound, adequate to prevent breakage, compatible with contents of lamps, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Examples of acceptable packaging could include placing the lamps evenly spaced in double or triple-ply cardboard containers with closed lids. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. An example of such containment could include placing unintentionally broken lamps in closed wax fiberboard drums.

The Agency points out that, in addition to these container and packaging provisions, universal waste handlers, including handlers of universal waste lamps, must comply with the provisions of 40 CFR ''273.17 and 273.37 for responding to releases of universal waste. Handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste and, if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR Parts 260 through 268, as well as all other applicable statutory provisions.

The Agency also notes that today=s rule does not change any regulatory requirements applicable to destination facilities (i.e., recycling facilities and treatment and disposal facilities). Under today=s rule, those facilities are subject to all Subtitle C management requirements applicable to hazardous waste treatment, storage, and disposal facilities, although the Agency does not regulate the actual process of reclaiming mercury. In addition, recycling facilities (as well as Adownstream@

facilities that reuse the recycled products) must comply with all applicable Clean Air Act requirements, all applicable worker safety standards under the Occupational Safety and Health Administration (OSHA), and all applicable state controls (including possible best management practices or other controls on the recycling process).

Residuals from recovery operations must also be managed in accordance with all applicable solid and hazardous waste management requirements. If residuals exhibit a characteristic of hazardous waste, they must be managed in accordance with all applicable hazardous waste management controls, including the requirements of 40 CFR Subpart C, standards for recyclable materials used in a manner constituting disposal.

DCN FLEP-00246
COMMENTER Efficient Lighting and Maintenance, Inc.
SUBJECT EXCL5
COMMENT Lamps should be crushed on the generators site and the crushed material transported to a subtitle D disposal or to a recycler. Lamp volume would be reduced 90% -- greatly reducing storage and transportation costs. Safe on-site crushing should be allowed in compliance with OSHA mercury standards.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation

limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00247
COMMENTER Total Lighting Service
SUBJECT EXCL5
COMMENT Total Lighting Service is uncomfortable with the limited conditions proposed for the conditional exclusion. As generators of the waste our company may be responsible for the disposition of the lamps and would prefer to see records kept as a requirement for transporters in make sure the delivery to designated destination facilities and packaging requirements for storage and transportation to make environmental releases minimal. These requirements will ensure protection to the generators of interest. Our company believes that a sensible approach to lamp disposal often involves crushing the lamps on the generators site and then transporting the lamps to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by 90% and, in turn, reduces the

> storage and transporting costs. We strongly agree that the conditional exclusion include provisions for safe, on-site crushing in agreement with OSHA mercury standards. Total Lighting supports environmentally sound and cost-effective recycling of mercury- containing lamps. We believe that controls be imposed on air emissions of mercury during the recycling process and that the OSHA workplace standard for mercury be applied.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in

volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional recordkeeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional

documentation of shipment acceptance and delivery.

DCN FLEP-00249
COMMENTER CVM Electric, Inc.
SUBJECT EXCL5
COMMENT Under the Conditional Exclusion, transportation of "spent lamps" should have record keeping similar to what we do now with PCB ballast disposal. The generator has the assurance that once the waste leaves their site it has been properly transported and delivered to either a qualified recycler or appropriate landfill. Crushing of the lamps reduces the "volume of this waste by 90%. This reduces both storage and transportation costs. It also reduces the amount of energy required to transport these materials. On-site crushing must comply with OSHA mercury standards. Recycling, while important, must be standardized and controlled, similar to the Certificate of Destruction used in the recycling of PCB ballasts.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency

allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-00250
COMMENTER international Assn. of Lighting Man. Co.

SUBJECT EXCL5

COMMENT NALMCO and its member companies are uncomfortable with the limited conditions proposed for the conditional exclusion. As the generators of the waste who may be ultimately responsible for the disposition of the lamps, the association believes the companies must be protected by imposing record keeping requirements for transporters to insure delivery to the proper facility. We also believe that strict packaging requirements be mandated to minimize accidental environmental releases. Universal waste disposal prohibits lamp crushing and the exclusion doesn't refer to crushing at all. Crushing reduces the volume of fluorescent lamps by 90% and, thus, reduces storage and transportation costs. A practical approach to lamp disposal is crushing the lamps at the generator's site and transporting the material to either Subtitle D disposal or to a recycler. With proper controls, crushing can be done safely. For further flexibility, crushing should also be allowed at off-site storage locations. NALMCO strongly recommends that the conditional exclusion include provisions for safe crushing in compliance with OSHA mercury standards.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In

addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe

crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps.

DCN FLEP-00251
COMMENTER Nelson Electric Company
SUBJECT EXCL5
COMMENT Furthermore, we feel we could effectively reduce transportation costs by safely crushing our lamps on site prior to transportation. The volume would be reduced by 90%. We strongly support the conditional exclusion and a provision for on-site crushing in compliance to OSHA mercury standards.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or components of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from

a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00252
COMMENTER Associated Industries of Vermont
SUBJECT EXCL5
COMMENT The Association is, however, concerned with the limited conditions proposed for the conditional exclusion. Since many of our members are generators of this type of waste, we would prefer to see record keeping requirements for transports to ensure delivery to designated destination facilities and packaging requirements for storage and transportation to minimize environmental releases. This would ensure protection for our members already committed to sound solid waste management practices. AIV also recommends that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For the sake of the flexibility we need in Vermont, controlled crushing at off-site storage locations should also be allowed.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps

received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps.

DCN FLEP-00260
COMMENTER Salt River Project
SUBJECT EXCL5
COMMENT However, SRP would support special handling requirements (e.g., packaging requirements to reduce breakage) that would minimize mercury emissions during routine storage and transportation.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00261
COMMENTER New Hampshire Dept. of Env. Services
SUBJECT EXCL5
COMMENT 4. There are no standards required for storage or transport prior to disposal or reclamation. This is a concern since lamps

which are broken, due to mishandling would emit mercury.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00264

COMMENTER Lighting Maintenance, Inc.

SUBJECT EXCL5

COMMENT We are concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generators site. Crushing reduces the volume of flourescent lamps and reduces the storage and transportation costs. Crushing can be done safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe. on site crushing in compliance with OSHA mercury standards.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to

situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00267
COMMENTER ABD Lighting Management Co., Inc.
SUBJECT EXCL5
COMMENT We are particularly concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on- site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off- site storage locations.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00270
COMMENTER The Barney Roth Company
SUBJECT EXCL5
COMMENT We are particularly concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off-site storage locations.
RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe

crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00271
COMMENTER RTC Marketing of Ohio
SUBJECT EXCL5

COMMENT We are uncomfortable with the limited conditions proposed for the conditional exclusion. Being ultimately responsible for the disposition of the lamps, I would like to see record keeping requirements for the transporters to insure delivery to designated sites and packaging requirements for storage and transportation to minimize environmental releases. Such requirements will serve to protect both the lighting maintenance company and the generator in safe management practices. I am particularly concerned that universal waste disposal prohibits lamp crushing and the exclusion doesn't address it at all. I Believe that a practical approach to lamp disposal often involves the crushing of lamps on the generators site and Transportation of crushed material to a recycler or to Subtitle D disposal. Crushing reduces the volume of fluorescent lamps by 90% plus. Thus, reducing the storage and transportation costs. Crushing can be conducted safely with proper controls. My experience is that when lamps are repackaged in their original containers and sealed up again, they can then be crushed in that container without dust and flying debris. The material can then be emptied into an appropriate container for transportation. I recommend that the conditional exclusion include provisions for safe on site crushing in compliance with OSHA mercury standards.
We support cost effective recycling of mercury containing lamps. I would like some assurance that recycling and reuse practices are safe and that mercury levels in recycled material be closely monitored to prevent contamination in the downstream reuse of the material.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and

emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional recordkeeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

The Agency also notes that today=s rule does not change any regulatory requirements applicable to destination facilities (i.e., recycling facilities and treatment and disposal facilities). Under today=s rule, those facilities are subject to all Subtitle C management requirements applicable to hazardous waste treatment, storage, and disposal facilities, although the Agency does not regulate the actual process of reclaiming mercury. In addition, recycling facilities (as well as Adownstream@ facilities that reuse the recycled products) must comply with all applicable Clean Air Act requirements, all applicable worker safety standards under the Occupational Safety and Health Administration (OSHA), and all applicable state controls (including possible best management practices or other controls on the recycling process).

Residuals from recovery operations must also be managed in accordance with all applicable solid and hazardous waste management requirements. If residuals exhibit a characteristic of hazardous waste, they must be managed in accordance with all applicable hazardous waste management controls, including the requirements of 40 CFR Subpart C, standards for recyclable materials used in a manner constituting disposal.

DCN FLEP-00272
COMMENTER Detroit Edison Company
SUBJECT EXCL5

COMMENT Generator crushing of used lights is critically important if costs of handling the waste are to be at all within reason, whether the EPA chooses the conditional exclusion option or the universal waste option. It should be noted that there is presently an issue in Michigan regarding the acceptability of generator crushing of used lights because Michigan contends that this is treatment and claims that their regulations, unlike the federal regulations, do not allow generator treatment without a permit. This compounds the problem of handling the waste and further discourages accelerated change out of inefficient lighting. The record makes clear that crushing practices can be done in an environmentally sound manner and there is no practical reason for barring this management option. It is recognized that there are a variety of crushing technologies available, some better than others. Detroit Edison supports the use of the more advanced crushers with adequate filters to minimize any opportunity for release of mercury, but it should be noted that mercury monitoring around even the least Sophisticated model while in operation did not reveal mercury levels in excess of the OSHA standards. As indicated by the recycling/disposal cost discussion in the previous paragraph, the ability of a generator to crush used bulbs is critical to keeping costs at a level which will not discourage accelerated change out of inefficient lighting.

RESPONSE

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators

must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00273
COMMENTER Lighting Maintenance, Inc.
SUBJECT EXCL5
COMMENT LMI is somewhat uncomfortable with the limited conditions proposed for the conditional exclusion. As generators of the waste and/or representatives of the generators of the waste, our company may be ultimately responsible for the disposition of the lamps and would prefer to see record keeping requirements for transporters to insure delivery to designated destination facilities and packaging requirements for storage and transportation to minimize environmental releases. Such requirements will serve to protect the interests of the generators in responsible downstream management.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter

input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-00273
COMMENTER Lighting Maintenance, Inc.
SUBJECT EXCL5
COMMENT We are particularly concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus, reduces the storage and

transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off site storage locations.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00275
COMMENTER Aetna Corporation
SUBJECT EXCL5
COMMENT The limited conditions proposed for the conditional exclusion also cause us some concern. Since we are representatives of the generators of the waste, it is possible that Aetna Corp. will ultimately be held responsible for lamp disposal. For this reason we would prefer to see requirements developed for packaging of the lamps during storage and transportation which would minimize the release of harmful materials. We advocate the transporting of small quantity lamps (5000 or less) to staging areas for processing, then having large quantity transporters follow a set of record keeping requirements to insure delivery to the proper destination facilities. This would virtually guarantee the protection of both the generators of the waste and their representatives. It is the opinion of Aetna Corp. that the crushing of lamps on the site of the generator and subsequent transportation of the fragments to a recycler or a Subtitle D disposal site is the most efficient and practical means of lamp disposal. For this reason we are uncomfortable with the fact that crushing is prohibited by universal waste disposal and is not mentioned at all in the exclusion. With proper equipment, crushing may not only be conducted safely; it also minimizes the cost of storing and transporting spent lamps by decreasing their volume by 90%. It is our recommendation that the conditional exclusion be amended to allow safe crushing both on- and off-site, provided it meets the OSHA mercury standards. To illustrate the benefit of this process in a current relamping project, our service technicians generated 42,000 spent lamps

from 149 facilities throughout the New England area (approximately 280 lamps per facility). In order to consolidate the lamps for recycling, our truck had to make ninety-three (93) return trips to Cambridge to off load spent lamps. If crushing had been an option, this would have been accomplished in fewer than eight (8) trips.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps.

DCN FLEP-00286
COMMENTER Creative Lighting, Inc.
SUBJECT EXCL5
COMMENT The proposed prohibition of lamps crushing again creates a

monster bigger than the one it eliminates. The cost for transportation of lamps in the un-crushed state will be so high that it will ultimately cause vast storage of unrecycled or resold lamps. If crushing is done to proper OSHA safety standards and the crushed lamps are safely standards and the crushed lamps are safely transported these will be no significant negative impact on emissions or spillage. Ultimately all recycled lamps are crushed at the storage of recycler facilities and crushing at the generator site or storage site will have a more positive effect on voluntary lamp disposal compliance. The only long term solution to the ultimate long term public safely from lamp waste is to ensure that the recyclers are carefully monitored and controlled. They will handle such a significantly larger quantity of wastes that an individual lighting firm like ours will generate. They must be responsible for the complete waste management of lamps they receive and they must ensure that its recycling and re-use operations are safe, that their emissions during recycling are in compliance and that their work place safety standards for mercury exposure be applied.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal

wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency also notes that today=s rule does not change any regulatory requirements applicable to destination facilities (i.e., recycling facilities and treatment and disposal facilities). Under today=s rule, those facilities are subject to all Subtitle C management requirements applicable to hazardous waste treatment, storage, and disposal facilities, although the Agency does not regulate the actual process of reclaiming mercury. In addition, recycling facilities (as well as Adownstream@ facilities that reuse the recycled products) must comply with all applicable Clean Air Act requirements, all applicable worker safety standards under the Occupational Safety and Health Administration (OSHA), and all applicable state controls (including possible best management practices or other controls on the recycling process).

Residuals from recovery operations must also be managed in accordance with all applicable solid and hazardous waste management requirements. If residuals exhibit a characteristic of hazardous waste, they must be managed in accordance with all applicable hazardous waste management controls, including the requirements of 40 CFR Subpart C, standards for recyclable materials used in a manner constituting disposal.

DCN FLEP-00289

COMMENTER Fluorescent Maintenance Company
SUBJECT EXCL5
COMMENT In addition, we strongly believe the conditional exclusion include provisions for safe crushing of lamps. Past experience shows that old lamps will break during transport, because they are old and fragile, indeed, packing new lamps for shipping is a significant cost of the final product. Imagine the money that needs to be spent to insure old lamps arrive intact; it could become almost as costly to get rid of old lamps as it costs to purchase new lamps. This would create an enormous expense for every school, building, government agency, business, or hospital. And the benefits from shipping the lamps intact versus crushed are not clear. Thus, for the regulations to be feasible and practical, they need to allow for lamp crushing prior to transport.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00291
COMMENTER A-1 Lighting Service, Inc.
SUBJECT EXCL5
COMMENT The crushing of lamps is the most practical approach to the disposal of lamps. Crushing reduces lamps size by more than 90%.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or

process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00293
COMMENTER American Airlines, Inc.
SUBJECT EXCL5
COMMENT In general, American believes that generators should be prohibited from intentionally crushing MCLs unless such destruction is systematically performed by a mechanism which

contains the mercury and minimizes emissions. American would propose that crushing be allowed in devils which entrap the mercury in a closed container and which are effective at keeping airborne mercury levels below OSHA exposure limits. This would encourage development of devices capable of effectively containing and concentrating the mercury and could encourage recycling of MCLs. The waste contained in any such devices should be managed as hazardous waste by the generator if the waste fails TCLP. Empty MCL containers could be returned to the supplier to receive credit for any deposits attributable to the crushed lamps and empty containers.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of

one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00296
COMMENTER State of Ohio EPA
SUBJECT EXCL5
COMMENT Safety hazard - Transporters of MSW and personnel at solid waste landfills may be subjected to safety hazards through handling mercury-contaminated lamps and components, and from materials ejected from imploded tubes. The U.S. EPA acknowledges that it does not have sufficient information to rule-out exposure to mercury through handling and processing mercury lamps. This is an inherent weakness in the conditional exclusion lacking adequate management standards.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards). Under this approach, untreated hazardous waste lamps may not be disposed of in municipal solid waste landfills.

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers

manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

DCN FLEP-00300
COMMENTER ElectricSave Company
SUBJECT EXCL5
COMMENT Crushing. We are particularly concerned that the universal waste disposal prohibits lamp crushing an the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. (Any problems experienced with transportation or storage of intact lamps should be included here.) We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off-site storage locations.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e.,

universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00304
COMMENTER A&K Service Corporation
SUBJECT EXCL5
COMMENT The A&K company is particularly uncomfortable with the limited conditions proposed for the general exclusion. Since we are generators of the waste and/or representatives of the generators of the waste, we may be ultimately liable for the disposition of the lamps and would prefer to see the burden shifted to the transporters of the waste by requiring the transporters to keep accurate records and by requiring adequate packaging for transportation to minimize environmental releases caused by breakage during transport. These requirements would insure responsible handling of the waste by downstream management and would protect the interest of the generators.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps

received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-00306
COMMENTER Lighting Maintenance and Service, Inc.
SUBJECT EXCL5
COMMENT LMS is also uncomfortable with the lack of stipulations proposed for the conditional exclusion. As generators of the waste we may be ultimately responsible for the disposition of the lamps and would much rather see record keeping requirements for transporters to insure delivery to designated facilities and packaging requirements for storage and transportation to minimize environmental releases. This type of requirement would protect the interests of the generators in responsible downstream management.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

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DCN FLEP-L0001
COMMENTER Environmental Technology Council
SUBJECT EXCL5
COMMENT Moreover, this option does not include any controls over the transportation of the lamps, where breakage occurs and most of the mercury is likely to escape to the atmosphere before the waste ever arrives at the landfill. Of equal importance, the conditional exemption option would not include any requirements to control breakage in transportation and storage, where much mercury is presently released to the atmosphere. By contrast, under the universal waste option, lamps must "at all times" be kept in packings that will minimize breakage during normal handling and transport conditions. Proposed S 273.32(l).
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal

waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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DCN FLEP-L0005
COMMENTER Massachusetts Energy Efficiency Council
SUBJECT EXCL5
COMMENT Third, we urge the EPA to provide detailed guidelines for the handling, storage, and transportation of spent fluorescent lamps. Given the size and fragility of the lamps, and given the environmental concerns associated with breakage and/or crushing, these management issues are critically important. Detailed guidelines will give the industry the guidance that it needs to comply with the EPA's requirements and to minimize environmental risk.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in

a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-L0006
COMMENTER National Food Processors Association
SUBJECT EXCL5
COMMENT EPA indicates that handling requirements would be developed to minimize mercury emissions during storage and transportation as

part of the conditional exclusion option. As described under the universal waste management system option, EPA suggests these requirements would be to store and transport used lamps in manufacturer containers or similar containers and to use sealable containers for storage and transport of broken lamps. NFPA strongly recommends handling and storage guidelines be developed. Guidelines would provide the direction for handling and transporting shipments of significant numbers of lamps. Co-disposal with other solid wastes that are destined for an appropriately designed and permitted landfill should be an acceptable option for facilities faced with managing a small number of lamps. However, elaborate or extensive handling requirements would greatly complicate and establish an unnecessary compliance issue for generators of small quantities of lamps without significant environmental or public health benefits.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The universal waste regulations require that universal waste handlers manage spent lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR

parts 260 through 272.

There are also operating record requirements for large quantity handlers of universal waste. Large quantity handlers are required to keep records of each shipment of universal waste lamps received and keep records of each shipment of lamps sent off-site. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. Records must be retained for at least three years from the date of receipt of a shipment of lamps or the date a shipment of lamps leaves the facility. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Although the final rule does not include additional record keeping requirements for transporters of hazardous waste lamps, nothing in the rule precludes generators from entering into an agreement with a transporter to provide additional documentation of shipment acceptance and delivery.

DCN FLEP-00256
COMMENTER Ford Motor Company
SUBJECT EXCL5
COMMENT Intentional crushing in the proposed exclusion management option offers a potential to reduce the mercury levels in the crushed lamp residue that would be sent to a MSW landfill. Waste characterization (TCLP) conducted on the crushed lamp residue typically does not exceed the established RCRA limits. The mercury is captured by the filter system and managed as a hazardous waste. TCLP results from a typical filter system range between 200-300 mg/kg. This approach could allow for management of the lamp residue as non-hazardous while the recovered mercury from the spent lamps would be managed as hazardous waste destined for reclamation by retorting or treatment and disposal by Subtitle C requirements. This option may provide for added protection of human health and safety.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00202
COMMENTER Union Camp Corporation

SUBJECT EXCL5
COMMENT Air emissions due to breakage can be controlled through proper handling and packaging practices, and, as indicated earlier, the regulatory provisions should address crushing of lamps.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519),

the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00081
COMMENTER Family Dollar Stores, Inc.
SUBJECT EXCL5
COMMENT Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management

standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00302
COMMENTER Conserve Electric Company, Inc.
SUBJECT EXCL5
COMMENT We are particularly concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off-site storage locations.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal

wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00303
COMMENTER IllumElex Corporation
SUBJECT EXCL5
COMMENT The universal waste approach prohibits the crushing of lamps and the exclusion does not address it. We believe that sometimes it is more feasible to crush the lamps versus a large bulk shipment. With proper controls, crushing can be done safely thus reducing storage cost and transportation cost. IllumElex recommends that the conditional exclusion include provisions for safe on site crushing in compliance with OSHA mercury standards.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion

approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal

regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00304
COMMENTER A&K Service Corporation
SUBJECT EXCL5
COMMENT Another concern of our company is that there is no mention in the exclusion on crushing of these lamps and it is prohibited by the universal waste approach. We believe that it is oftentimes more practical to crush these lamps on the generators site and transport the material to a subtitle D disposal site or a recycler. Another option is to allow controlled crushing of these lamps off-site. We believe it is more manageable to handle this material after it is crushed rather than attempt to package it properly for storage and transport.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519),

the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00306
COMMENTER Lighting Maintenance and Service, Inc.
SUBJECT EXCL5
COMMENT Another issue with the universal waste disposal which causes concern is that it prohibits lamp crushing and the exclusion is silent on it. We believe that a practical approach to lamp disposal will require crushing lamps on the generators site and transporting the crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by 90% and consequently reduces transportation and storage costs. Crushing can be done safely with proper management. We advocate provisions for safe, on-site (and for flexibility; off-site) crushing in compliance with OSHA mercury standards be included in the conditional exclusion.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management

of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing

for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00196
COMMENTER American Lighting Association
SUBJECT EXCL5
COMMENT Air emissions due to breakage can be controlled through proper handling and packaging practices, and, as indicated earlier, the regulatory provisions should address crushing of lamps.
RESPONSE
Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps.

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any

hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-L0001
COMMENTER Environmental Technology Council
SUBJECT EXCL5
COMMENT Further, perhaps the greatest problem regarding fluorescent lamps in the MSW stream occurs before the lamps are even placed in the landfill. There is no protection against breakage of lamps in the current solid waste transportation system. In fact,

it can be assumed that nearly all lamps transported in garbage trucks are broken and mercury released to the environment before the lamps even reach the landfill. [26] [Footnote 26: Risk Assessment, p.156.] There is further opportunity for breakage at collection and storage points, if any. Finally, any lamps that reach the landfill still unbroken are likely to get broken in handling and crushing at the landfill site, again allowing vaporization of the mercury and its release to the atmosphere.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by spent lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport can prevent releases of mercury to the environment before recycling or other management. The universal waste rule both establishes packaging standards, as well as restrictions on lamp crushing, to prevent potential mercury emissions during storage and transport. In addition, universal waste transporters remain subject to applicable DOT requirements for the transport of universal waste lamps. Under today=s rule, untreated hazardous waste lamps may not be disposed of in municipal solid waste landfills.

DCN FLEP-00201
COMMENTER WMX Technologies, Inc.
SUBJECT EXCL5
COMMENT Air emissions due to breakage can be controlled through proper handling and packaging practices, and, as indicated earlier, the regulatory provisions should address crushing of lamps.

RESPONSE

Today=s final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. These standards require that universal waste handlers manage universal waste lamps in

a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

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The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable

requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN
COMMENTER Power Savers, Inc.
SUBJECT EXCL5
COMMENT CONDITIONS OF EXCLUSION We need to be
able to crush our lamps (this reduces volume by 90%) to be able
to transport at a reasonable price that will not discourage
companies from complying with Green Lights.
RESPONSE
The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal

wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency appreciates the commenter=s acknowledgment of EPA=s energy-efficient lighting program. Replacing energy inefficient lighting systems under one of the energy-efficient lighting programs could require the use and eventual disposal of hazardous waste lamps.

A significant number of commenters indicated that savings from reduced energy usage more than cover the cost of managing lamps as part of the universal waste regulations. Other commenters indicated the costs for managing lamps may now increase. The Agency performed calculations on the impact of disposal costs on a lighting upgrade=s internal rate of return (IRR). At a $0.50/lamp transportation and recycling cost, the IRR for a typical project over ten years is 51 percent. At a $1.00/lamp transportation and recycling cost the IRR was 50 percent, which is only a slight decrease in IRR, despite a 100 percent increase in waste management costs. This result suggests that the cost associated with the participation in energy-efficient lighting programs is largely independent of the regulatory options chosen by EPA.

DCN FLEP-00076
COMMENTER The Southland Corporation
SUBJECT EXCL5

COMMENT Crushing. The Southland Corporation is concerned that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. Both of our professional installing lighting companies believe that crushing is practical and the most cost effective for The Southland Corporation. We strongly recommend that the conditional exclusion include provisions for safe on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off site storage locations.

RESPONSE

Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00176
COMMENTER Coalition of Lamp Recyclers
SUBJECT UNWAS5
COMMENT The Coalition of Lamp recyclers supports shipping the lamps intact in the original cardboard cartons or fiber containers. They are accessible to the lamp retrofitters and the generators. The cartons can be packed and sealed to minimize breakage. Shipping documents would provide tracking and record keeping for the generator and the recycler. Utilizing the hazardous waste manifest would deter recycling and proper management due to the increased cost to the generator. Requiring the use of the hazardous waste management system adds 20% - 30% to the cost of recycling, plus the additional difficulty of acquiring a licensed transporter. The use of a standard bill of lading for a shipping document will provide for record keeping as well as reduce the cost of shipment.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements. Under the universal waste rule, collectors and

transporters of hazardous waste lamps are subject to management standards in a manner that is protective, while reducing the burden to generators and collectors, and at the same time ensuring that these waste are ultimately destined for fully regulated hazardous waste management facilities.

The universal waste regulations under 40 CFR Part 273 require that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

There are operating record requirements for large quantity handlers of universal waste (those who accumulate more than 5,000 kilograms of total universal waste at one time). A large quantity handler is required to keep records of each shipment of universal waste both received and sent off-site from the facility. Records must be kept for three years from the date that the waste is received at the facility or sent off-site. A small quantity handler (a facility that accumulates 5,000 kilograms or less of total universal waste at one time) is not required to keep records of shipments of universal waste.

The final rule for hazardous waste lamps does not require a manifest to accompany a shipment but the generator may use a manifest if he so chooses. The Agency has decided to retain the current tracking requirements in Subpart D of Part 273 for hazardous waste lamps. Under the universal waste system, hazardous waste manifests need not accompany off-site shipments of universal waste. Transporters of universal wastes must, however, comply with any applicable department of Transportation (DOT) requirements. Since shipments of universal waste are not required to be accompanied by a manifest, universal wastes are not considered Ahazardous wastes@ under DOT regulations. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Large quantity handlers must track waste lamp shipments by maintaining records documenting shipments received by and sent from the facility.

The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. The Agency believes that these requirements provide consistency with the current universal waste rule.

DCN FLEP-00302

COMMENTER Conserve Electric Company, Inc.
SUBJECT EXCL5
COMMENT We are particularly concerned that the universal waste disposal prohibits lamp crushing and the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off-site storage locations.
RESPONSE
Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00303
COMMENTER IllumElex Corporation
SUBJECT EXCL5
COMMENT The universal waste approach prohibits the crushing of lamps and the exclusion does not address it. We believe that sometimes it is more feasible to crush the lamps versus a large bulk shipment. With proper controls, crushing can be done safely thus reducing storage cost and transportation cost. IllumElex recommends that the conditional exclusion include provisions for safe on site crushing in compliance with OSHA mercury standards.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less

stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00304
COMMENTER A&K Service Corporation
SUBJECT EXCL5
COMMENT Another concern of our company is that there is no mention in the exclusion on crushing of these lamps and it is prohibited by the universal waste approach. We believe that it is oftentimes more practical to crush these lamps on the generators site and transport the material to a subtitle D disposal site or a recycler. Another option is to allow controlled crushing of these lamps off-site. We believe it is more manageable to handle this material after it is crushed rather than attempt to package it properly for storage and transport.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The Agency has determined that hazardous waste lamps meet most of the criteria established for designating a material as universal waste. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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DCN FLEP-00300
COMMENTER ElectricSave Company
SUBJECT EXCL5
COMMENT Crushing. We are particularly concerned that the universal waste disposal prohibits lamp crushing an the exclusion is silent on it. Our company believes that a practical approach to lamp disposal often involves crushing the lamps on the generators site and transportation of crushed material to either subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and, thus, reduces the storage and transportation costs. Crushing can be conducted safely with proper controls. (Any problems experienced with transportation or storage of intact lamps should be included here.) We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow crushing at off-site storage locations.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed spent hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA=s policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are allowed a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner Athat prevents releases@ to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m^3.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for encouraging the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00250
COMMENTER International Assn. of Lighting Man. Co.

SUBJECT EXCL5

COMMENT Universal waste disposal prohibits lamp crushing and the exclusion doesn't refer to crushing at all. Crushing reduces the volume of fluorescent lamps by 90% and, thus, reduces storage and transportation costs. A practical approach to lamp disposal is crushing the lamps at the generator's site and transporting the material to either Subtitle D disposal or to a recycler. With proper controls, crushing can be done safely. For further flexibility, crushing should also be allowed at off-site storage locations. NALMCO strongly recommends that the conditional exclusion include provisions for safe crushing in compliance with OSHA mercury standards.

RESPONSE

In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

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DCN FLEP-00199
COMMENTER National Association of Electric Dist.
SUBJECT EXCL5
COMMENT Crushing. Our members are particularly concerned that the Universal Waste proposal prohibits lamp crushing and the exclusion is silent on it. We believe that a practical approach to lamp disposal often involves crushing the lamps on the generator's site and transporting the crushed material to either Subtitle D disposal or to a recycler. Crushing reduces the volume of fluorescent lamps by greater than 90% and thus reduces storage and transportation costs. Crushing can be conducted safely with the proper controls. We strongly recommend that the conditional exclusion include provisions for safe, on-site crushing in compliance with OSHA mercury standards. For purposes of preserving flexibility, it may also be advisable to allow controlled crushing at off-site storage locations.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The current universal waste rule prohibits universal waste handlers from crushing universal wastes (40 CFR '273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment

prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Aany method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.@ The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

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For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state=s program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA '3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for the development of state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

The Agency points out that facilities managing hazardous waste lamps also are required to comply with all applicable OSHA requirements governing worker safety. OSHA regulations apply to situations where workers may be potentially exposed to air-borne sources of mercury.

DCN FLEP-00234
COMMENTER Minnesota Mining and Manufacturing (3M)
SUBJECT EXCL5
COMMENT 3. 3M suggests that spent lamps, destined for legitimate recycling facilities, be conditionally excluded from regulation as a hazardous waste. 3M has operations in 38 states. Presently, spent fluorescent lamps are packaged and labeled as a hazardous waste and shipped using a uniform hazardous waste manifest. 3M ships lamps from each of our operations to a company-owned permitted RCRA facility for consolidation. Truckload quantities are then shipped as a hazardous waste to a state-registered lamp recycling facility. Consolidation is needed to make lamp recycling more cost-effective. Consolidation points should not be treated any differently than a generator that would send lamps directly to a recycling facility. Lamps should also be non-regulated from a consolidation point to a recycling or destination facility. The packaging, labeling, and shipping requirements should be identical for both. If these requirements are different, then consolidation points would be required to repackage, label, and transport the lamps as a hazardous waste. If two standards exist (for generators and consolidation points,) then the cost savings realized by consolidating would be lost due to the additional handling requirements. This may cause some consolidation points to raise prices which could result in the need to consider other disposal options. If EPA retains a separate, more stringent, standard for consolidation points, it is hopeful that EPA will further define consolidation points as either "commercial" or "internal" collection points. A "commercial" consolidation point would accept lamps from a multitude of customers. An "internal" consolidation point would serve as a collection point for lamps generated within a single company (i.e., all 3M owned and leased facilities, including subsidiary locations and contract shops). The "internal" consolidation point would have less rigorous requirements which are similar to that being proposed for generators who send lamps directly to destination facilities.
RESPONSE
In today=s rule, the Agency is not finalizing the conditional exclusion option for the management of hazardous waste lamps. The Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter

input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards).

The final rule for hazardous waste lamps does not contain a separate category for consolidation points. EPA is including hazardous waste lamps within the universal waste regulations under 40 Part 273. At the publication of the proposed hazardous waste lamp rule, the universal waste rule was also in the proposal stage of the rulemaking process. As a result, the Agency chose to design the regulations for hazardous waste lamps in a manner that was consistent with the proposed universal waste rule. The proposed universal waste rule, and subsequently the proposed hazardous waste lamps rule, categorized regulated persons managing universal waste into four types: generators, consolidation points, transporters, and destination facilities. When the final universal waste rule was published, the Agency modified the four categories. The transporter and destination facility categories were retained essentially as proposed. However, the persons who would have been included in the generator and consolidation point categories were merged to create two new categories of participants: small quantity handlers of universal waste (SQHUWs) and large quantity handlers of universal waste (LQHUWs). In the hazardous waste lamps final rule, the Agency has decided to remain consistent with the existing universal waste regulations and retain the four categories of participants that were finalized in the universal waste rule.

The universal waste rule as amended today requires that universal waste handlers manage universal waste lamps in a way that prevents releases of the lamps or component of the lamps to the environment. Hazardous waste lamps must be stored in containers and/or packaging that remain closed, are structurally sound, are adequate to prevent breakage, are compatible with contents of lamps, and that lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. Handlers also must contain any universal waste lamps that show evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous waste to the environment. If a release occurs, handlers of universal waste must immediately contain all releases of universal waste and any residues from universal wastes. In addition, universal waste handlers must determine whether any material resulting from a release is a hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable provisions of 40 CFR parts 260 through 272.

The final rule for hazardous waste lamps does not require a manifest to accompany a shipment but the generator may use a manifest if he so chooses. The Agency has decided to retain the current tracking requirements in Subpart D of Part 273 for hazardous waste lamps. Under the universal waste system, hazardous waste manifests need not accompany off-site shipments of universal waste. Transporters of universal wastes must, however, comply with any applicable department of Transportation (DOT) requirements. Since shipments of universal waste are not required to be

accompanied by a manifest, universal wastes are not considered Ahazardous wastes@ under DOT regulations. Small quantity handlers are not required to keep records of shipments of universal waste lamps. Large quantity handlers must track waste lamp shipments by maintaining records documenting shipments received by and sent from the facility.

The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The Agency believes that standard business records that are normally kept by businesses will fulfill this requirement. The Agency believes that these requirements provide consistency with the current universal waste rule.

DCN FLEP-00145
COMMENTER ASTSWMO
SUBJECT EXCL5
COMMENT Management of fluorescent lamps in MSW landfills will add to this serious problem. ASTSWMO believes that the conditional exclusion outlined in the proposed rule would not be protective of human health and the environment because the management of lamps in MSW landfills will result in both long and short term releases of mercury to the environment. Unlike other metals, - mercury is volatile and evaporates at room temperature. Mercury is released to the environment when lamps are broken during disposal and transport to MSW landfills.
RESPONSE
The Agency agrees with the commenter that the proposed conditional exclusion approach would not sufficiently protect human health and the environment. EPA gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. Based upon commenter input and additional information collected and reviewed by the Agency since the publication of the proposed rule, EPA decided to adopt the proposed universal waste approach for controlling potential risks from the management of spent hazardous waste lamps. Today's final rule adds hazardous waste lamps to the universal waste regulations under 40 CFR Part 273. The universal waste rule provides a reduced, or streamlined set of requirements (i.e., universal waste rule is less stringent than full Subtitle C management standards). Under this approach, untreated hazardous waste lamps may not be sent to municipal solid waste landfills.