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Environmental Protection Agency

40 CFR Parts 260, 261, 264, etc.
Hazardous Waste Management System; Modification of the Hazardous Waste Program; Hazardous Waste Lamps; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 261 264, 265, 268, 270 and 273

[FRL–6371–3]

RIN 2050–AD93

Hazardous Waste Management System; Modification of the Hazardous Waste Program; Hazardous Waste Lamps

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: Today's final rule adds hazardous waste lamps to the federal list of universal wastes regulated under the Resource Conservation and Recovery Act (RCRA). Handlers of universal wastes are subject to less stringent standards for storing, transporting, and collecting these wastes. The Agency has concluded that regulating spent hazardous waste lamps as a universal waste under 40 CFR Part 273 will lead to better management of these lamps and will facilitate compliance with hazardous waste requirements. Today's final rule, which streamlines the Subtitle C management requirements for hazardous waste lamps, also supports energy conservation efforts.

EFFECTIVE DATE: This final rule is effective on January 6, 2000.

ADDRESSES: The official record for this rulemaking is identified as Docket F–99–FLEF–FFFFF and is in the EPA RCRA docket, located in the RCRA Information Center (RIC) at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA 22202. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from the regulatory docket at no charge. Additional copies cost $0.15/page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund/EPCRA/UST Hotline at (800) 424–9346 (toll free) or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C. metropolitan area, call (703) 412–9810. For technical information about this rule, contact Marilyn Goode of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 401 M St. SW., Washington DC 20460, phone 703–308–8800, or E-mail goode.marilyn@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:

Internet Availability

This rule is available on the Internet. Using a World Wide Web (WWW) browser, type http://www.epa.gov/epaoswer/osw/hazwaste.htm#id.

Official Record

The official record for this action is kept in a paper format. The official record is maintained at the address in the **ADDRESSES** section at the beginning of this document.

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I. Background

Under Subtitle C of the Resource Conservation and Recovery Act (RCRA) the Environmental Protection Agency (EPA) has promulgated regulations governing the nation's hazardous waste management program. These regulations are found at parts 260 through 279 of title 40 of the Code of Federal Regulations. These regulations first define which materials are considered solid wastes and then identify wastes that are hazardous and thus subject to RCRA hazardous waste requirements. Requirements are then set forth for hazardous waste generators,

transporters, and owners and operators of treatment, storage, and disposal facilities (TSDs). On May 11, 1995, EPA finalized streamlined requirements for collecting certain widely dispersed hazardous wastes under the Universal Waste Rule, codified in 40 CFR part 273. Today's rule extends the scope of that rule by adding hazardous waste lamps.

A. Current Regulations

Any person who generates a solid waste, as defined in 40 CFR 261.2, must determine whether or not the solid waste is a hazardous waste, either because the waste is listed as a hazardous waste in subpart D of 40 CFR part 261 or because the waste exhibits one or more of the characteristics of hazardous waste, as provided in subpart C of 40 CFR part 261. Data available to EPA, including studies conducted by the Agency, indicate that many fluorescent and high intensity discharge (HID) lamps exhibit the toxicity characteristic (TC) for mercury because of the use of that compound in producing these lamps. Some HID and other types of lamps may also exhibit the toxicity characteristic for lead, principally because of the use of lead solder. Before today's rulemaking (except as explained in the next paragraph), generators of spent lamps that exhibited hazardous waste characteristics were subject to the RCRA Subtitle C hazardous waste management requirements. Generators were subject to all applicable requirements of 40 CFR parts 260 through 268, including the on-site management, pre-transport, and manifesting requirements of part 262.

Spent hazardous waste lamps sent for reclamation are considered spent materials (rather than sludges or by-products) and are therefore solid wastes. A spent material is "any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing" (40 CFR 261.1(c)(1)). Generators of solid wastes (including spent lamps) are thus responsible for determining whether the wastes are hazardous (through testing or through their knowledge of the material).

However, even though waste lamps are considered solid and hazardous wastes if they exhibit hazardous waste characteristics, not all generators of these spent lamps have had to manage the lamps as hazardous waste. Under RCRA Subtitle C, there are different requirements for generators of hazardous waste depending on the amount of hazardous waste generated in a calendar month. Conditionally-exempt small quantity generators (CESQGs) (i.e., generators of less than 100 kilograms of hazardous waste in a calendar month) are not subject to RCRA Subtitle C hazardous waste management standards and may choose to send their wastes to a municipal solid waste landfill or other facility approved by a state for the management of industrial or municipal non-hazardous wastes (40 CFR 261.5). Generators of more than 100 kilograms and less than 1,000 kilograms in a calendar month are subject to the RCRA hazardous waste management standards, but are allowed to comply with certain reduced regulatory requirements (40 CFR 262.34). Generators of more than 1,000 kilograms of hazardous waste in a calendar month are required to comply fully with federal hazardous waste regulations. Household generators of waste lamps may be exempt from hazardous waste management requirements under 40 CFR 261.4(b)(1). Also, several states already regulate waste lamps as universal wastes under their authorized state hazardous waste programs.

B. Proposed Rule

On July 27, 1994 (59 FR 38288), EPA proposed two approaches for controlling the management of spent lamps, specifically mercury-containing lamps. Mercury-containing lamps include fluorescent, high pressure sodium, mercury vapor, and metal halide lamps. In that notice, the Agency requested comment on whether either approach was appropriate for protecting human health and the environment from potential releases of mercury. The two management options proposed by EPA were less stringent than the existing federal regulations. Both regulatory alternatives provide streamlined requirements for certain waste management activities in lieu of regulating spent mercury-bearing lamps under the full RCRA Subtitle C management standards.

The first regulatory alternative proposed by EPA was a conditional exclusion from hazardous waste regulation for waste mercury-containing lamps. Under the proposed conditional exclusion, waste mercury-containing lamps could be disposed in a municipal landfill provided the landfill was permitted by a state with an EPA-approved municipal solid waste landfill permitting program or managed at a mercury reclamation facility permitted, licensed, or registered by a state. The second regulatory alternative included in the proposed rule was to add waste mercury-containing lamps to the universal waste program, which consists of streamlined regulations designed to address the management of certain widely generated hazardous wastes. EPA also solicited comment on whether to add other types of spent hazardous waste lamps (e.g., lamps that are hazardous waste because they fail the TC for other constituents, such as lead) to the universal waste program.

C. The Toxicity Characteristic

Under section 3001 of the Resource Conservation and Recovery Act (RCRA), EPA is charged with defining which solid wastes are hazardous by identifying characteristics that indicate hazardous waste and by listing particular solid wastes as hazardous wastes. On May 19, 1980, the Agency promulgated the Extraction Procedure Toxicity Characteristic (EPTC) to determine the toxicity of waste. The EPTC regulated eight metals, four insecticides, and two herbicides. On March 29, 1990, in response to section 3001(g) of RCRA, which was added by the Hazardous and Solid Waste Amendments (HSWA) of 1984, the Agency replaced the Extraction Procedure with the Toxicity Characteristic Leaching Procedure (TCLP). Like the EPTC, the TCLP is used to determine the toxicity of waste. Although regulatory levels for the metals (including mercury) remained the same as originally promulgated in 1980, the promulgation of the Toxicity Characteristic resulted in additional wastes becoming regulated as hazardous due to the new leaching procedure (the TCLP) and to the addition of regulatory levels for more waste constituents.

In the 1994 proposal on spent lamps, the Agency did not propose, or request comment on, regulatory language that would modify or amend the current hazardous waste toxicity characteristic provisions published in 40 CFR 261.24. However, EPA noted that the Agency was conducting long-term studies on the fate and transport of TC metals in ground water, and that the TC regulatory levels for mercury may be changed when that work is completed. The proposed rule also requested submission of any municipal solid waste leachate or groundwater data to support this separate effort. Because of the extreme complexity of mercury chemistry in the environment and because scientific knowledge about the environmental fate and transport of mercury continues to evolve, this work is still ongoing.

The most recent data available to the Agency demonstrate greater mobility than previously thought. These data include updated groundwater modeling, as well as field data collected by the Agency in reviewing the hazardous characteristics generally, the TCLP test,

and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Records of Decision (RODs) from municipal solid waste landfills. As explained in more detail in responses to comments and elsewhere in the record, these data expand upon and corroborate data cited in the proposal that mercury can migrate from municipal solid waste landfills in harmful concentrations and reach human drinking water sources located over a mile from the landfill in significant concentrations, i.e., concentrations exceeding allowable mercury in drinking water. Thus, actual site data from recent and on-going studies support the Agency's conclusion that mercury is present in significant concentrations in both leachate and groundwater at non-hazardous waste landfill sites, including municipal solid waste landfills, and has migrated off-site to drinking water sources (in some instances in concentrations exceeding Federal drinking water standards). This conclusion is sufficient to warrant continued regulation of spent lamps containing mercury as hazardous waste.

Even though EPA did not re-open issues related to the appropriateness of the TCLP for evaluating the toxicity of mercury-bearing waste in this proposal, the Agency is clarifying that the recent opinion of the D.C. Circuit in *Columbia Falls Aluminum Company* v. *EPA*, 139 F.3d 914 (D.C. Cir. 1998) ("*Columbia Falls*"), does not affect the use of the TCLP to determine whether spent waste lamps exhibit the toxicity characteristic and, therefore, should be regulated as hazardous wastes under RCRA Subtitle C.

Columbia Falls presented unique and limited circumstances which do not apply to the question of using the TCLP for determining whether spent lamps are hazardous wastes. In the context of *Columbia Falls*, EPA had established treatment standards for spent aluminum potliners (hazardous waste code K088), and the treatment standards used the TCLP to measure the performance of the treatment technology in mitigating the hazard presented by several hazardous constituents found in the waste, including arsenic and fluoride. In the case of *Columbia Falls*, all of the commercial treatment capacity for the waste (K088) was provided by a single facility, and all of the treatment residue from this single process was disposed at a single location in a dedicated monofill.[1] Notwithstanding that the treatment process was able to achieve the treatment standards for arsenic and fluoride as measured by the TCLP (i.e., the treatment residue, when tested with the TCLP, never exceeded the regulatory levels), actual *leachate* from the single disposal site contained significantly higher levels of these two constituents. EPA had not offered any substantive explanation for continued use of the TCLP to measure performance of the treatment process for these constituents after the disparities between the predicted leaching using the TCLP and the actual performance in the field became known. Under these circumstances, the court held that it was arbitrary and capricious to continue to use the TCLP to establish treatment standards for spent potliner wastes because it bore no rational relationship to what was actually occurring.

None of these circumstances applies to the question of using the TCLP to determine the toxicity of spent lamps and, therefore, whether such lamps are hazardous wastes in the first place. With respect to mercury, the TCLP has not been shown in this case to under predict mercury leachate concentrations for 100 percent of the wastes to which the test applies.

First, there is no question that it is reasonable to model a disposal environment where lamps are disposed with municipal solid waste, since most lamps are disposed in municipal solid waste landfills, or would be if they were not hazardous wastes. The grinding feature of the TCLP protocol is likewise reasonable, since there is no dispute that lamps will be crushed after they are landfilled. The dilution/attenuation feature of the TCLP is likewise a reasonable approximation of fate and transport of mercury which escapes from the lamp matrix. There is no chemical reason why such mercury would be immobile. The mercury itself is primarily the divalent form which can form mobile salts or soluble mercury acetate upon exposure to acidic municipal solid waste (a phenomenon modeled by the pH and acid of the simulated leachate in the TCLP test (see Memorandum To the Docket from Gregory Helms entitled "Solubility of Mercury Salts," dated June 18, 1999).

Second, as explained in more detail in responses to comments and other materials in the record, mercury has proven mobile in municipal solid waste landfill environments, migrating in leachate to contaminate ambient groundwater at concentrations exceeding the federal maximum contaminant levels (MCLs) used for drinking water (see EPA's "Summary of Mercury Damage Incidents from CERCLA Records of Decisions (RODs)," June 9, 1999, and chart entitled "Maximum Mercury Concentration Observed in Leachate from Landfill Cells," June 11, 1999.) Mercury contamination from municipal solid waste leachate exceeding MCLs has actually been found in groundwater drinking wells over a mile from the landfill (well past the 500 feet used in the TC for fate and transport assumptions). These concentrations are within an order of magnitude, or within the same order of magnitude, as predicted in the TC. *Id.* Thus, the reasonableness of using the TC to evaluate the hazardousness of these wastes is firmly supported by empirical data.

D. Universal Waste Rule

On February 11, 1993, EPA proposed streamlined hazardous waste management requirements for collecting and managing certain widely generated hazardous wastes (58 FR 8102). The Agency finalized the Universal Waste Rule on May 11, 1995 (60 FR 25492). The final rule promulgated streamlined hazardous waste management regulations for hazardous waste batteries, certain hazardous waste pesticides, and mercury-containing thermostats. Handlers of universal wastes are subject to less stringent standards for storing, transporting, and collecting these wastes. These standards serve to encourage environmentally sound collection and proper management of these hazardous wastes.

The universal waste regulations apply to handlers and transporters of universal wastes. Handlers include universal waste generators and collection facilities. The regulations distinguish between "large quantity handlers of universal waste" (those who handle more than 5,000 kilograms of total universal waste at one time) and "small quantity handlers of universal waste" (those who handle 5,000 kilograms or less of universal waste at one time). The 5,000 kilogram accumulation criterion applies to the quantity of all universal wastes accumulated.

Universal waste handlers who generate or manage items designated as universal waste are exempt from certain requirements routinely applied to hazardous waste management and instead are subject to the management standards under part 273. These include streamlined standards for storing universal waste, labeling and marking waste or containers, preparing and sending shipments of universal wastes off-site, employee training, and response to releases. Large quantity handlers of universal waste (LQHUW) also must provide notification of universal waste management to the appropriate EPA Region (or state director in authorized

[1] 62 FR 1993 (Jan. 14, 1997).

states), obtain an EPA identification number, and retain for three years records of off-site shipments of universal waste. Small quantity handlers of universal waste (SQHUW) are not required to manifest wastes, notify the EPA region, or keep records of universal waste shipments.

Transporters of universal waste also are subject to less stringent requirements than the full Subtitle C hazardous waste transportation regulations. Universal waste transporters must comply with all applicable Department of Transportation (DOT) regulations and ensure transportation of universal waste to a universal waste handler or a destination facility. Transporters may store universal waste at a transfer facility for ten days or less and must contain any releases of universal waste. Transporters of universal waste do not have to comply with RCRA hazardous waste manifest requirements.

Destination facilities are those facilities that treat, dispose, or recycle universal wastes. Universal waste destination facilities are subject to all currently applicable requirements for hazardous waste treatment, storage, and disposal facilities and must receive a RCRA permit for such activities. Hazardous waste recycling facilities that do not store hazardous wastes prior to recycling may be exempt from permitting under federal regulations (40 CFR 261.6(c)(2)).

In the universal waste proposal, the Agency did not propose to include spent fluorescent lamps in the universal waste regulations because further investigation into the issue was necessary. However, EPA requested comment on several questions related to fluorescent lamps (58 FR 8110). First, EPA requested comment on the risks posed by these lamps in landfills or municipal waste combustors. Second, EPA requested information on the risks of current or developing mercury recovery technologies. The Agency received a number of comments in response to these questions. Some commenters supported including waste lamps in the Universal Waste Rule, and other commenters suggested other regulatory alternatives for managing these lamps. The comments addressing the management of waste mercury-containing lamps that were received in response to the universal waste proposed rule are addressed in the background documents for today's rulemaking.

E. Energy Efficient Lighting Programs

Prior to publication of the proposed rule, the Agency initiated a review of the potential risks represented by waste mercury-containing lamps and began to analyze the contribution of such lamps to total mercury emissions to the environment. The Agency undertook this evaluation in part because of the importance of promoting energy efficiency. The use of energy-efficient lighting can reduce mercury emissions from coal-burning power plants as well as reduce emissions of carbon dioxide and sulfur oxide. Energy-efficient lighting in all U.S. commercial floor space currently illuminated by less efficient fluorescent lamps would save an estimated 35 to 40 billion kilowatt hours of electricity annually. This saving would result in reduced emissions of mercury, carbon dioxide, sulfur dioxide and nitrogen dioxide, some of which are projected to cause greenhouse effects.

Replacing energy inefficient lighting systems with energy efficient lighting systems requires the use and eventual disposal of spent mercury-containing lamps. It was suggested that requiring the management of spent lamps in accordance with the full Subtitle C hazardous waste management requirements could discourage participation in energy efficient lighting programs, since facilities might avoid or postpone replacement of lamps because of potential disposal costs. If this were true, streamlined management standards for spent mercury-containing lamps could decrease the costs associated with managing the lamps and promote greater participation in energy-efficient lighting programs. However, as discussed below, the Agency has found that the cost of these programs appears to be largely independent of the regulatory options chosen by EPA.

F. Notice of Data Availability

On July 11, 1997 (62 FR 37183), the Agency made available to the public additional data on mercury emissions from managing spent lamps. The information provided as part of the Notice of Data Availability (NODA) consisted of an electronic model and a report that assessed mercury emissions from the management of waste mercury-containing lamps under different regulatory approaches. The report, titled "Mercury Emissions From the Disposal of Fluorescent Lamps," discusses the methodology, data and assumptions used in developing the *Mercury Emissions Model.* The report describes inputs used in the model for estimating potential mercury emissions during waste management and disposal activities (such as lamp properties, lamp disposal rates, and lamp mercury emissions rates from specific waste management practices). It also discusses inputs for estimating energy savings from using high-efficiency T8 lamps, and the effects on mercury emissions from electric utilities. The report estimates mercury emissions under baseline conditions (i.e., management of mercury-containing lamps in compliance with full hazardous waste requirements) and under other regulatory options, including the conditional exclusion and universal waste approaches proposed. These estimates include annual and cumulative emissions from disposal of mercury-containing lamps, and net mercury emissions.

The Agency received thirty-five public comments on this NODA, about twenty of which presented substantive information on the model. The Agency has reviewed these comments in great detail and revised the model and report, as appropriate. The Agency also has prepared a comprehensive response to comment document addressing each substantive issue. The revised model, report, and response to comment document are available in the RCRA docket established for this action. A brief summary of the major public comments and the Agency's responses is presented below.

Many commenters raised concerns about the model's Subtitle D landfill emissions rates. Several commenters believed the Agency should not have rounded the high emissions rate of 0.8 percent to one percent. EPA believes this is a valid concern and has revised the model to include the original 0.8 percent emissions rate.

Some commenters raised concerns that EPA had misinterpreted data from the State of Florida on its recycling emissions estimates. EPA has carefully reviewed available recycling emissions data and revised the model's central and low emissions factors for divalent mercury emissions. EPA revised the central estimate from three percent to 1.09 percent and the low estimate from one percent to 0.07 percent.

Various commenters believed that the model should clearly distinguish between CESQG and non-CESQG lamp mercury emissions. These commenters pointed out that CESQG lamp emissions are outside the scope of the rulemaking effort. The Agency agrees with this concern and has revised the model to segregate non-CESQG from CESQG lamp emissions.

Some commenters believed that higher spent lamp management costs would discourage certain building owners from conducting lighting upgrades. These commenters were concerned with the model assumption

that upgrades are independent of policy options. In response to the comments, EPA revisited its assumptions and performed additional calculations on the impact of disposal costs on a lighting upgrade's internal rate of return (IRR). The Agency has found that, holding all other lamp operating costs constant, the cost of lamp disposal has minimal impacts on an upgrading project's 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—only a slight decrease in IRR despite a 100 percent increase in waste management costs. For these reasons, EPA continues to believe that the decision to use T8 lamps is independent of the Agency's policy options.

A number of commenters indicated that the model underestimated lamp recycling rates under the baseline and overestimated the rate of Subtitle C landfilling. Commenters suggested that the national lamp recycling rate is approximately ten percent and that Subtitle C landfilling of lamps is near three percent. EPA believes these estimates may be reasonable, and has revised the baseline's recycling rate to ten percent and reduced the Subtitle C disposal rate to about two percent.

The Agency also conducted an internal review of the model and made additional revisions. First, the Agency revised the model assumptions regarding the effectiveness of pollution control equipment at municipal waste combustor (MWC) emissions from 80 to 95 percent. This revision has the effect of decreasing the MWC high emission factor for divalent mercury from 30 percent to 16 percent. Second, EPA revised the disposal trees under the baseline and options to account for the fact that some CESQGs voluntarily recycle their spent lamps.

II. Relationship to Other Agency Activities

A. Report to Congress on Mercury

As required by the Clean Air Act (CAA) Amendments of 1990, on December 19, 1997, the Agency issued the Mercury Study Report to Congress. The study estimates the quantity of mercury emissions to the air from a number of human activities, estimates the health and environmental impacts associated with these mercury emissions, and describes the technologies available to control mercury emissions from these sources.

The report estimates that annual anthropogenic U.S. emissions of mercury in 1994–1995 were 158 tons. Approximately 87 percent of these mercury emissions came from combustion sources. Approximately 1 percent of mercury emissions are estimated to come from spent mercury-containing lamps.

The report found that anthropogenic emissions of mercury to the air rival or exceed natural inputs. Recent estimates place the annual amounts of mercury released into the air by human activities at between 50 and 75 percent of the total yearly input to the atmosphere from all sources. Some of the air emissions are deposited on land and water within several hundred miles of the source. The remainder enters global circulation, from which it may be deposited on land or water at great distances from the source. Mercury deposited on land or water may be re-emitted and reenter the global circulation to be redeposited elsewhere. When mercury enters water bodies, either through direct deposition or through run-off of mercury deposited on land, a series of transformations occur resulting in conversion of some of the mercury into a methylated form which is more toxic and more conducive to bioaccumulation in fish.

While the report does not quantify the risk from mercury exposure, it concludes that there is cause to seek further reductions in mercury releases and exposures to mercury. The report recommends that cost-effective opportunities to deal with mercury during the product life cycle (rather than just at the point of disposal), should be pursued. The Agency believes that today's rule furthers that goal by including provisions related to management prior to disposal.

In addition, on February 19, 1998, EPA and the Department of Agriculture issued the Clean Water Action Plan, which describes important actions EPA and other federal agencies will take to reduce exposure to toxic pollutants (especially mercury) in the nation's water and fish. Mercury is identified as a pollutant of concern in 60 percent of state-issued fish consumption advisories. The Clean Water Action Plan outlines several important Agency actions aimed at reducing the exposure of people and wildlife to mercury-contaminated fish.

B. Health Effects on Children

In April 1997 President Clinton signed Executive Order 13045 (62 FR 19885), "Protection of Children From Environmental Health Risks and Safety Risks," requiring each federal agency to assess risks that disproportionately affect children, including risks from mercury. Mercury is a toxic, bioaccumulative pollutant. The primary health effects are on the neurological development of children exposed through fish consumption and fetuses exposed through their mothers' consumption of fish. Given equivalent exposure, children absorb more mercury as a percentage of their body weight than do adults. Children are, therefore, more susceptible to the negative health effects of mercury emissions. The results of EPA's analyses (as presented in Modification of the Hazardous Waste Program: Hazardous Waste Lamps—Economic Assessment) indicate that it is likely that emissions from regulated mercury-containing lamps will decrease somewhat as a result of today's final rule. Therefore, it is likely that children may experience a marginal benefit from this action due to these decreased emissions.

III. Rationale for Including Hazardous Waste Lamps in the Scope of the Universal Waste Rule

A. Why Management Controls Are Necessary for Spent Mercury-Containing Lamps

In today's rule, the Agency's primary objective is to promulgate regulations for management of hazardous waste lamps that both protect human health and the environment and are efficient and effective in doing so. EPA believes that management controls for spent mercury-containing lamps are necessary to minimize releases of mercury to the environment during accumulation and transport, to ensure safe handling of such lamps, and to keep spent mercury-containing lamps out of municipal waste management facilities (both landfills and solid waste incinerators). Studies reveal that significant threats of mercury releases from managing spent lamps result from incineration and from breakage during storage and transport. In addition, data available to the Agency show that mercury can be found in municipal landfill leachate, and EPA remains concerned that landfill releases may pose threats over the long term. For these reasons, the Agency has concluded that some management controls are essential for these wastes.

Mercury is easily volatilized; it can be dispersed widely through the air and transported thousands of miles. It undergoes complex chemical and physical changes as it cycles among air, land, and water. Humans, plants, and animals may be exposed to mercury and accumulate it during this cycle, potentially resulting in ecological and human health impacts. The primary health effects from mercury are on the neurological development of children

exposed through fish consumption and on fetuses exposed through their mother's consumption of fish.

Because of its low boiling point, elemental mercury is largely vaporized during municipal waste combustion and, without the use of control technologies specific to mercury, passes out of the municipal waste combustor into the atmosphere with the flue gas. On December 19, 1995, EPA's Office of Air Quality Planning and Standards (OAQPS) promulgated standards for new municipal waste combustors of a certain capacity (60 FR 65387). However, combustors at smaller plants would not be affected by the standards, nor do the standards address the problem of mercury emissions from lamp breakage.

When spent mercury-containing lamps break, the elemental mercury inside becomes available for evaporation, adsorption, or reaction. For example, a study performed by Research Triangle Institute (RTI) estimated emissions from lamps after breakage to be about 6.8 percent of the total mercury content of the broken lamp. The National Electrical Manufacturers Association (NEMA) estimated emissions from lamp breakage to be in the range of 1 percent of the mercury content of the broken lamp. The Electric Power Research Institute's (EPRI) measurements of mercury emissions from uncovered broken lamps totaled 2.8 percent of the total mercury content of the lamp.

Mercury may also be released to the environment as a result of lamp crushing operations. Available studies show that emission percentages from drum top crushing range from 10 to 100 percent of the total elemental mercury in the lamps, depending on the operating conditions and supplemental controls used.

To address these concerns, today's rule moves spent hazardous waste lamps into the universal waste regulatory program. Comments from stakeholders and from other regulatory agencies (especially state solid and hazardous waste authorities) support EPA's conclusion that this approach offers the most effective way to ensure environmentally protective management of these wastes.

B. Why the Universal Waste Approach is Preferable to a Conditional Exclusion for Spent Mercury-Containing Lamps

Although EPA has determined that spent mercury-containing lamps can safely be subject to management requirements that are less stringent than those of full Subtitle C (see discussion in Part III.C below), the Agency does not believe that its proposed conditional exclusion approach would sufficiently protect human health and the environment. It is clear to the Agency that mercury poses an environmental threat and that man-made sources of mercury emissions should be reduced or, where inevitable, managed properly. EPA therefore gave considerable weight to actions that would minimize mercury emissions to the environment while encouraging the collection and environmentally-sound management of spent lamps. The Agency is convinced that the universal waste approach is the best way to further these goals. EPA agrees with those commenters to the proposed rule who stated that the conditional exclusion approach would reduce the quantities of spent mercury-containing lamps that would be recycled, increase disposal of the lamps in municipal landfills, and increase the amount of mercury released to the environment due to increased breakage of lamps during storage, transport, and landfilling. The Agency's analysis predicts that uncontrolled mercury emissions under the conditional exclusion approach are likely to be somewhat greater than under the universal waste approach promulgated in today's rule (see the Economic Assessment discussed in section VII.B of today's preamble).

A principal reason for this conclusion is that some substantive and relatively detailed controls for managing spent mercury-containing lamps are necessary for protection of human health and the environment, although these controls can be structured in a much more simplified and streamlined way than the full Subtitle C management system. The Agency believes that such controls would be difficult to implement and to enforce using a conditional exclusion approach. Such an approach could be appropriate if the regulated universe was less numerous and varied, or more sophisticated about Subtitle C requirements. However, since handlers of spent mercury-containing lamps are widely varied, diffuse, and often not knowledgeable about RCRA regulations, it would be very difficult to monitor compliance and enforce controls such as those included in today's rule if these handlers were completely outside of the Subtitle C universe and the controls were implemented only as conditions for maintaining the exclusion. The Agency believes that the packaging standards and prohibition on treatment included in today's rule are important for preventing potential mercury emissions during storage and transport. Controls of this type can best be implemented through a universal waste-type approach where handlers are operating within a simple, streamlined management system with some limited oversight rather than completely outside of any regulatory structure.

A further reason for selecting the universal waste approach was the Agency's desire to promote further reductions in the quantity of mercury in spent lamps, which will lead to a reduction in total emissions of mercury to the environment. The conditional exclusion approach would have provided less incentive to reduce or eliminate the presence of mercury in lamps, since under that approach spent mercury-containing lamps would not have been classified as hazardous waste.

With respect to mercury, the most significant source reduction achievement has been the reduction and elimination of mercury from alkaline batteries. Although these batteries are still a significant contributor of mercury to municipal solid waste, this contribution is dropping dramatically. Spent mercury-containing lamps are one of the next highest sources of mercury in the municipal solid waste stream, possibly accounting for as much as 3.8 percent of all mercury now going to municipal landfills. Opportunities exist to further reduce mercury content in both standard 4-foot fluorescent lamps and the increasingly popular compact fluorescent lamps.

Commenters on the proposed rule stated that advances in lamp technology have resulted in a 14 percent reduction in lamp mercury content from 1985 to 1990. These commenters also pointed out that projections show an additional 35 percent decline in future mercury levels. Some manufacturers have made considerable progress in reducing levels of mercury in fluorescent lamps. Many commenters urged EPA to continue to encourage industry in these efforts.

The Agency believes that today's final rule will encourage lamp manufacturers to continue reducing or eliminating the amount of mercury used to manufacture lamps. Because mercury-bearing lamps that fail the TCLP are still considered to be hazardous wastes under the universal waste rule, lamp producers will have an incentive to design lamps with a mercury content below the level that will cause the lamps to fail the TCLP. If lamp manufacturers aggressively pursue source reduction, the contribution of mercury to the environment from lamps will continue to decrease over time.

EPA also notes that under the universal waste rule, handlers and destination facilities must comply with the substantive requirements of the

Land Disposal Restrictions (LDR) provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA). These include (1) a prohibition on accumulating prohibited wastes directly on the land; (2) a requirement to treat waste to meet treatment standards before disposal; (3) a prohibition on dilution; and (4) a prohibition on accumulation except for purposes of accumulating quantities sufficient for proper recovery, treatment, or disposal. Since mercury can be found in municipal landfill leachate and releases remain a concern (especially for the long term), the Agency believes that compliance with the substantive requirements of the LDR program is still necessary to minimize risks from managing spent mercury-containing lamps (studies on the movement of mercury in a variety of land disposal settings are ongoing). Again, the Agency believes that controls of this type are best implemented through a simple, streamlined regulatory approach such as the universal waste rule rather than as a conditional exclusion.

A further reason for today's rule finalizing the universal waste approach is that this approach will provide more consistency between federal and state regulations governing the management of spent hazardous waste lamps. Currently, several states have added mercury-containing lamps to their universal waste programs and others have proposed to do so in the near future. By placing hazardous waste lamps within the federal universal waste rule, EPA hopes to encourage additional states to regulate spent lamps as universal waste and therefore promote greater consistency in regulatory approaches across state borders. This will improve waste management efficiency and reduce compliance costs for waste handlers engaged in interstate commerce.

C. Why Relief From Full Subtitle C Requirements is Warranted Both for Mercury-Containing Hazardous Waste Lamps and Other Hazardous Waste Lamps

Although some controls for management of spent lamps are necessary for protection of human health and the environment, for several reasons the Agency believes that these controls can be successfully applied in a more simple, streamlined system than the full Subtitle C program, and that such an approach is appropriate both for mercury-containing hazardous waste lamps and any other spent lamps that are hazardous.

The Agency believes that relief from full Subtitle C requirements for handlers of hazardous waste lamps is justified (whether the lamps are hazardous because they exhibit the toxicity characteristic for mercury or another constituent, such as lead). First, the principal reason for this belief is that the full Subtitle C regulatory structure is not appropriate for the universe of people handling these materials, and adequate protections can be applied in the more appropriate structure of the universal waste rule. Many handlers of hazardous waste lamps are office buildings, retail establishments, and other building managers, most of whom are not familiar with or equipped to comply with the full Subtitle C regulatory structure. This structure was initially developed with industrial hazardous wastes in mind, and is most appropriate for these materials and for the types of facilities that generate these wastes. The streamlined universal waste structure is more appropriate for the numerous, widely varied universe of spent lamp handlers who are not familiar with or easily able to comply with the full hazardous waste regulatory structure.

In addition, the final universal waste rule included a number of factors to be used to evaluate whether candidate wastes are appropriate to be added to the universal waste regulations. The factors were designed to determine whether regulating a particular hazardous waste under the streamlined standards of the universal waste program would improve overall management of the waste. The factors, which are codified at 40 CFR 273.81, include: (a) The waste must be a hazardous waste generated by a wide variety of generators; (b) the waste, or category of waste, should not be exclusive to a particular industry or group of industries, but generated by a wide variety of establishments; (c) the waste should be generated by a large number of generators and generated frequently, but in relatively small quantities; (d) systems to be used for collecting the waste should ensure close stewardship of the waste; (e) the risks posed by the waste during accumulation and transport should be relatively low compared to the risks posed by other hazardous waste, and specific management standards would be protective of human health and the environment during accumulation and transport; (f) regulation of the waste, or category of wastes, under the universal waste rule should result in the diversion of the waste from management with non-hazardous waste streams (i.e., the municipal solid waste stream); (g) regulation of the waste as a universal waste should improve implementation of and compliance with the hazardous waste regulatory program and/or (h) other factors that may be appropriate.

As the Agency noted in the preamble to the final universal waste rule (60 FR 25513), not every factor must be met for a waste to be appropriately regulated under the universal waste system. However, consideration of all the factors should result in a conclusion that regulating a particular hazardous waste under 40 CFR part 273 will improve waste management. After evaluating spent hazardous waste lamps in the context of the regulatory criteria for adding wastes to the universal waste rule, EPA has determined that on balance, these wastes are highly appropriate for inclusion in the regulatory scheme of 40 CFR part 273. The results of the Agency's evaluation of how these wastes meet the universal waste factors are described below.

A. Spent lamps are often hazardous because they exhibit the characteristic of toxicity by exceeding the regulatory level for mercury or another constituent (most frequently lead).

B. Spent hazardous waste lamps are generated by a wide variety of generators, including retail establishments, manufacturing establishments and office buildings.

C. Spent hazardous waste lamps are generated frequently by a large number of generators; in fact, a large percentage of all office buildings, retail establishments, and manufacturing facilities generate such lamps. Spent lamps are often generated in relatively small quantities.

D. The packaging standards included in today's rule and increased recycling will encourage close stewardship of the waste.

E. The Agency is convinced that the requirements of the universal waste program can be highly effective in mitigating risks posed by breakage of hazardous waste lamps during storage and transport. The universal waste requirements for proper packaging and handling of the lamps to avoid breakage during accumulation and transport should prevent releases of mercury or lead to the environment before recycling or other management, which will make the risks posed during accumulation and transport extremely low.

F. The Agency believes that managing hazardous waste lamps under the universal waste program will result in diversion of at least some of this waste from management in the municipal waste stream. EPA believes that the streamlined requirements of today's rule will encourage all handlers of spent lamps (whether hazardous or not) to

manage them under the requirements of part 273. Under the current RCRA regulatory scheme, the management of a waste differs based on the source of the waste. Wastes (including spent lamps) generated by consumers in their homes are not regulated under Subtitle C when discarded, because they are excluded from the definition of hazardous waste under 40 CFR 261.4(b)(1). Similarly, many spent lamps are largely exempt from the hazardous waste regulations because they are generated by conditionally exempt small quantity generators (CESQGs). Spent lamps generated by households and CESQGs are not distinguishable from those generated by fully regulated generators. Because the waste looks the same, spent lamps that would be more protectively managed in the hazardous waste system are entering municipal solid waste landfills or combustors instead. The simplified regulations will provide an incentive for individuals and organizations to collect the unregulated portions of the waste stream and manage them using the same systems developed for the regulated portion, thereby removing spent mercury or lead-containing lamps from the municipal waste stream and minimizing the amount of hazardous constituents going to municipal landfills and combustors.

G. Finally, managing hazardous waste lamps under the universal waste program will improve implementation of and compliance with the hazardous waste regulatory program. Generation of hazardous waste lamps by facilities which otherwise generate no hazardous waste is widespread. Currently, if a mercury or lead-containing lamp is a hazardous waste, it must be managed under Subtitle C regulation. If more than 100 kilograms of hazardous waste (including spent lamps) are generated in a calendar month, generators are subject to full Subtitle C requirements for storage, packaging, manifesting, and record keeping. Many facilities are therefore required to undergo significant technical and paperwork burdens largely or solely because they replace or upgrade used hazardous waste lamps. These generators may not be in compliance with RCRA regulations because they are unfamiliar with the requirements. EPA believes that the streamlined requirements of the universal waste program will give such "episodic" generators a more accessible starting point for good environmental management. If regulatory requirements are simpler, the compliance rate will improve, more hazardous waste lamps will be handled properly, and more spent lamps will be sent for recycling (or to other Subtitle C facilities) instead of going to solid waste landfills or to municipal waste combustors. Improved management will therefore lead to a reduction in the total amount of hazardous waste emissions to the environment.

In summary, considering these factors, the Agency finds that the universal waste approach is highly appropriate for this waste stream, and that it is in fact exactly this type of waste that the universal waste system was designed for. The Agency believes that the universal waste approach promulgated in today's rule will improve management of hazardous waste lamps, will improve implementation of the hazardous waste regulatory program, and will adequately protect human health and the environment from the risks posed by management of this waste stream.

IV. Summary of Final Rule

A. Waste Covered by Today's Rule

Today's rule adds hazardous waste lamps (waste lamps that are hazardous due to exhibiting one or more of the characteristics of hazardous waste) to the federal universal waste rule. In the proposed mercury-containing lamps rule, the Agency provided definitions for "electric lamp" and "mercury-containing lamp." In response to comments received on the proposed definitions, and to reduce potential confusion regarding the scope of the final rule, in today's final rule the Agency is finalizing a single definition of "lamp" or "universal waste lamp." In addition, in the applicability section of today's rule, the Agency is clarifying that all hazardous waste lamps fall within the scope of the universal waste rule.

B. Summary of Management Requirements for Universal Waste Lamps

Today's final rule for hazardous waste lamps ensures consistency with the universal waste rule. Today's rule adds subsections to §§273.13 and 273.33 of the existing universal waste rule, specifically addressing requirements for hazardous waste lamps. New §273.13(d) includes lamp handling requirements for small quantity handlers of universal waste, and new §273.33(d) provides lamp handling requirements for large quantity handlers of universal waste lamps. Management standards for transporters of universal waste lamps are the same as those applicable to transporters of other types of universal waste. Destination facilities (e.g., recycling facilities and treatment and disposal facilities) remain subject to all applicable hazardous waste permitting and management requirements under RCRA.

The universal waste management requirements for different participants handling hazardous waste lamps are summarized below. A discussion of the public comments that the Agency received in response to the management requirements for spent lamps contained in the proposed rule is found in Section V of this preamble, along with EPA's responses to comments received on the proposed requirements.

1. Categories of Participants in the Universal Waste System

There are four categories of participants in the universal waste management system: small quantity handlers of universal waste (SQHUW), large quantity handlers of universal waste (LQHUW), transporters, and destination facilities. When the proposed spent lamps rule was published, the Agency chose to categorize the lamps in a manner that was consistent with the proposed universal waste rule. Both proposed rules classified regulated persons managing universal waste into one of four types: generators, consolidation points, transporters, or 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 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 today's final rule, the Agency is categorizing handlers of hazardous waste lamps in a manner consistent with the existing universal waste regulations.

2. Small and Large Quantity Handlers

The term "universal waste handler" is defined under existing 40 CFR 273.6 as a generator of universal waste or the owner or operator of a facility (including all contiguous property) that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination. The definition of "universal waste handler" does not include: (1) A person who treats (except under the provision of §§273.13(a) or (c), or §§273.33(a) or (c)), disposes of, or recycles universal waste; or (2) a

person engaged in the off-site transportation of universal waste by air, rail, highway, or water, including a universal waste transfer facility. Persons who treat, recycle, or dispose of universal waste remain subject to all applicable hazardous waste regulations as discussed below in Section IV.F. Transporters of universal waste are regulated as discussed below in Section IV.E.

There are two types of entities that are considered handlers of universal waste lamps. The first is a person who generates the lamps, i.e., the person who used the lamps, then determined that they are no longer usable and thus should be discarded. Contractors who remove universal waste lamps from service are considered handlers and co-generators of the waste. The second type of handler is a person who receives universal waste lamps from generators or other handlers, consolidates the lamps, and then sends the lamps on to other universal waste handlers, recyclers, or treatment and disposal facilities. Facilities that accumulate universal waste lamps but do not treat, recycle, or dispose of them are handlers of the lamps. Each separate location, (e.g., generating location or collecting location) is considered a separate handler.

Whether a universal waste handler is a SQHUW or LQHUW depends on the amount of universal waste being accumulated at any time. A small quantity handler of universal waste is defined under 40 CFR 273.6 as a universal waste handler who accumulates 5,000 kilograms or less of universal waste (i.e., batteries, pesticides, thermostats, or lamps, calculated collectively) at any time. A large quantity handler of universal waste is defined under 40 CFR 273.6 as a universal waste handler who accumulates 5,000 kilograms or more of total universal waste (i.e., batteries, pesticides, thermostats, or lamps, calculated collectively) at any time. The 5,000 kilogram accumulation cut-off level refers to the total quantity of all universal waste handled on-site, regardless of the category of universal waste.

On occasion, SQHUWs may accumulate greater than 5,000 kilograms of universal waste on-site at any one time, thus requiring them to comply with the LQHUW regulations. A large quantity handler of universal waste retains this designation for the remainder of the calendar year in which more than 5,000 kilograms of universal waste was accumulated at any given time. A handler may re-evaluate his status as a LQHUW in the following calendar year.

3. Universal Waste Transporters

Under 40 CFR 273.6, the definition of a universal waste transporter is "a person engaged in the off-site transportation of universal waste by air, rail, highway, or water." Persons meeting the definition of universal waste transporter include those persons who transport universal waste from one universal waste handler to another, to a destination facility, or to a foreign destination. These persons are subject to the universal waste transporter requirements of subpart D of part 273.

The proposed regulations for transporters of hazardous waste lamps were designed to be consistent with the proposed universal waste rule. Since the proposed regulations for universal waste transporters were not modified significantly in the final rule, today's requirements for universal waste lamps are essentially identical.

4. Universal Waste Destination Facilities

The definition of "destination facility," found in 40 CFR 273.6, is "a facility that treats, disposes of, or recycles a particular category of universal waste, except those management activities described in paragraphs (a) and (c) of §§273.13 and 273.33 of this chapter (40 CFR part 273). A facility at which a particular category of universal waste is only accumulated is not a destination facility for purposes of managing that category of universal waste." Persons meeting the definition of destination facility are subject to the universal waste destination facility requirements of Subpart E of Part 273.

Like the regulations for transporters, the final regulations for destination facilities have changed very little from the proposed rule.

C. Management Requirements for Small and Large Quantity Handlers of Universal Waste Lamps

As mentioned above, the universal waste rule includes different requirements for small and large quantity handlers of universal wastes. Small quantity handlers are those who accumulate 5,000 kilograms or less of all universal waste categories combined at their location at any time. The requirements for small quantity handlers of universal waste are located in subpart B of part 273. Large quantity handlers are those who accumulate more than 5,000 kilograms of all universal waste categories combined at any time. The requirements for large quantity handlers of universal waste are located in subpart C of part 273.

Both small and large quantity handlers must follow specified requirements when handling universal waste lamps. 40 CFR 273.13 specifies packaging standards for waste lamps to prevent breakage of spent lamps during accumulation, storage, and transport of universal waste lamps. Handlers of universal waste lamps must label each universal waste lamp or container holding the lamps with the words "Universal Waste—Lamp(s)" or "Waste Lamp(s)" or "Used Lamp(s)."

In addition, the final rule requires that spent lamps be managed in a way that prevents releases of mercury or other hazardous constituents to the environment during accumulation, storage, and transport. Handlers may accumulate universal waste lamps for one year. If the lamps are stored for longer than one year, the handler must be able to demonstrate that such accumulation is solely for the purpose of accumulating such quantities of universal waste as are necessary to facilitate proper recovery, treatment, or disposal. (Handlers are not required to notify EPA or the authorized state of storage for longer than one year.)

The requirements for responding to releases applicable to small and large quantity handlers of universal wastes (including universal waste lamps) are found in §§273.17 and 273.37. Today's rule does not amend these sections. All handlers of universal waste lamps must immediately contain any releases from the lamps and must handle the residues according to all applicable regulatory requirements. The Agency notes that any releases of universal waste not cleaned up could constitute illegal disposal and could incur enforcement action under RCRA. In addition, any releases of hazardous substances (universal wastes are hazardous wastes, and thus are hazardous substances) must be reported under CERCLA if they are above reportable quantity thresholds.

The employee training requirements for small and large handlers of universal waste are found in §§273.16 and 273.36. The Agency today is applying these standards to handlers of universal waste lamps. Large quantity handlers must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures related to their responsibilities during normal facility operations and emergencies. Small quantity handlers must inform all employees that handle or have responsibilities for managing universal waste lamps of proper handling and emergency procedures appropriate to such lamps. The Agency believes that basic employee training is

necessary to ensure that employees are specifically familiar with waste lamp handling procedures. Training that is required under other programs (such as OSHA or RCRA) will generally fulfill the part 273 training requirements.

Small quantity handlers are not required to notify EPA of their universal waste management activities and need not obtain an EPA identification number. However, large quantity handlers must notify EPA (or the authorized state) of their universal waste activities and they must obtain an EPA identification number, if they do not already have one.

The Agency has decided to adopt the off-site shipment provisions included in the final universal waste rule for hazardous waste lamps in order to remain consistent with the current universal waste regulations. Handlers of universal waste are prohibited from sending universal waste to a place other than another universal waste handler, a destination facility, or a foreign destination. Handlers who transport universal waste off-site themselves are considered universal waste transporters and must comply with the universal waste transporter requirements. Universal wastes being offered for off-site transportation that meet the Department of Transportation (DOT) definition of hazardous material must comply with the applicable DOT requirements. Large quantity handlers must track waste lamp shipments by maintaining records documenting shipments received by and sent from the facility.

Handlers of universal waste must also comply with requirements for rejected shipments of universal waste. To prevent or limit rejected shipments, facilities that offer universal waste for shipment off-site must ensure, before the shipment is sent, that the receiving facility (another universal waste handler or destination facility) will agree to receive the load. If the shipment is rejected, the handler must take the waste back or agree with the receiving facility on a destination facility to which the shipment will be sent. If a handler rejects a shipment or a portion of a shipment, the handler must contact the originating handler to discuss re-shipment of the load. The handler may send the shipment back to the originating handler or send the shipment to a destination facility agreed upon by both handlers. If a handler receives a shipment containing hazardous waste that is not universal waste, the handler must notify the EPA Regional office of the illegal shipment and receive instruction on further management of the waste. If the handler receives a shipment containing non-hazardous, non-universal waste, the handler may manage the waste according to applicable federal, state, or local solid waste regulations.

D. Effect of Today's Rule on Conditionally-Exempt Small Quantity Generators

Under the universal waste system, conditionally-exempt small quantity generators (CESQGs) can choose to manage their universal waste lamps in accordance with either the CESQG regulations under 40 CFR 261.5 or as universal waste under part 273 (40 CFR 273.8(a)(2)). In addition, handlers and destination facilities that mix universal waste lamps from CESQGs with other universal waste regulated under part 273 are required to manage the combined waste as universal waste under part 273 (40 CFR 273.8(b)).

As discussed in the proposal, hazardous waste lamps that are managed as universal waste under 40 CFR part 273 do not have to be included in a facility's determination of hazardous waste generator status (40 CFR 261.5(c)(6)). Therefore, if a generator manages such lamps under the universal waste system and does not generate any other hazardous waste, that generator is not subject to other Subtitle C hazardous waste management regulations, such as the hazardous waste generator regulations in part 262. A generator that generates more than 100 kilograms of hazardous waste in addition to universal waste lamps would be regulated as a small or large quantity hazardous waste generator and would be required to manage all hazardous wastes not included within the scope of the universal waste rule in accordance with all applicable Subtitle C hazardous waste management standards, depending on the amount of other hazardous waste generated.

E. Requirements for Transporters of Universal Waste Lamps

Transporters of universal waste lamps are subject to the requirements of subpart D of part 273. 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. The Agency notes that the Hazardous Materials Regulations (HMR, 49 CFR parts 171–180) define a hazardous waste as any material that is subject to the Uniform Hazardous Waste Manifest Requirements of U.S. EPA, specified in 40 CFR part 262. Since shipments of universal waste are not required to be accompanied by a manifest, universal wastes are not considered "hazardous wastes" under DOT regulations. Therefore, for any universal waste shipments, transporters of universal waste must decide if the waste falls under any of the other DOT hazard classes to determine if compliance with the DOT requirements for "hazardous materials" under 49 CFR parts 171 through 180 is required. If the waste material does not meet the definition in the HMR for hazardous waste or any other hazardous material, its shipping description on shipping papers will not include a hazard class or identification number shown in the HMR.

Transporters may store universal waste lamps for up to ten days at a transfer facility during the course of transportation. A transporter storing universal waste lamps for more than ten days at one location must comply with the appropriate universal waste handler requirements in managing the wastes accumulated at the site, in addition to complying with the applicable universal waste transporter requirements. Universal waste transporters must transport a shipment of universal waste to a small quantity handler, large quantity handler, or a destination facility.

Today's final rule adopts the release response requirements promulgated in the universal waste rule for transporters of universal waste lamps. These requirements are found in §273.54. The release response requirements have been adopted essentially as proposed and remain consistent with the current requirements for all universal waste transporters.

F. Requirements for Destination Facilities

A destination facility is a facility that treats, disposes of, or recycles universal wastes. The requirements for destination facilities are found under subpart E of part 273. Under the universal waste rule, destination facilities are subject to all hazardous waste management requirements applicable to permitted or interim status hazardous waste treatment, storage and disposal facilities under parts 264 and 265, as well as applicable standards in parts 268 and 270. Facilities that recycle universal waste lamps without accumulating the lamps before they are recycled are subject to the recycling requirements of §261.6(c)(2).

G. Import and Export Requirements

The proposed rule for spent lamps did not include provisions for the importation of lamps. Several

commenters on the universal waste proposal pointed out that the Agency did not address the issue of imports. The Agency's intent was that once universal waste entered the United States, it should be subject to the same standards as any other universal waste. The final universal waste regulations therefore included import requirements in § 273.70. Under today's rule, the same requirements apply to universal waste lamps. Universal waste lamps that are imported from another country must be managed, upon entry into the country, in compliance with the appropriate universal waste requirements for transporters, handlers, or destination facilities, depending on the universal waste management activities conducted within the United States. To determine whether a handler importing universal waste is a small or large quantity handler, the universal waste imported from a foreign country is counted toward the quantity of waste accumulated as would any other universal waste. In addition, handlers managing universal waste that is imported from an Organization for Economic Cooperation and Development (OECD) country are subject to the requirements of 40 CFR part 262 subpart H.

The proposed provisions for exports of spent lamps were equivalent to the proposed provisions for exports of universal waste in the universal waste proposal. The requirements for handlers sending universal wastes (including spent hazardous waste lamps) to a foreign destination are found in § 273.20 for small quantity handlers and § 273.40 for large quantity handlers. Handlers exporting universal wastes are subject to the same provisions as generators of hazardous waste in subparts E and H of part 262. The exporting requirements for transporters of universal wastes to a foreign destination are found in § 273.56. Transporters may only accept shipments of universal wastes bound for foreign destinations that conform to the EPA Acknowledgment of Consent. They must ensure delivery of the universal waste to the facility designated by the person initiating the shipment.

The Agency notes that on April 12, 1996 (61 FR 16290), EPA revised the final universal waste regulations on importing and exporting of universal waste to reflect the Organization for Economic Cooperation and Development (OECD) Council Decision Concerning the Control of Transfrontier Movements of Wastes Destined for Recovery Operations (March 30, 1992). These revised regulations are today adopted for universal waste lamps.

H. Land Disposal Restriction Requirements

The proposed spent lamps rule did not include specific provisions on land disposal restrictions (LDR) requirements. However, the proposed and final universal waste regulations included a provision that exempted generators, transporters, and facilities that consolidated universal waste from the notification requirements in 40 CFR 268.7 and the storage prohibition in § 268.50. Destination facilities are subject to the full LDR program.

Pursuant to the LDR provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA), hazardous wastes listed or identified in accordance with RCRA section 3001 cannot be land disposed until they meet treatment standards (established by EPA), which are sufficient to minimize the short-and long-term threats potentially posed by land disposal. The regulations for the LDR program in 40 CFR part 268 apply to persons who generate or transport hazardous waste, as well as hazardous waste treatment, storage, and disposal facilities, unless they are specifically excluded from regulation in parts 261 or 268. Universal waste, as hazardous waste, remains subject to the requirements of the LDR program.

The applicability of the LDR requirements to universal waste lamps remains the same as the existing requirements for universal waste. Universal waste handlers and transporters must comply with the substantive requirements of the LDR program but are not required to comply with the administrative requirements (e.g., notification to all handlers of applicable treatment standards). The Agency believes that because of the unique nature of universal wastes (i.e., the wastes and treatment standards are easily identifiable), the substantive requirements would be sufficient to ensure that the goals of the LDR program are met for universal waste managed under part 273.

Destination facilities are required to comply with all of the part 268 LDR requirements for universal waste, including both the substantive and administrative requirements. Therefore, all universal waste must be treated or disposed of in compliance with LDR treatment standards, and the appropriate documentation regarding such compliance must be maintained by the destination facilities.

V. Discussion of Comments Received in Response to Proposed Rulemaking and Agency's Response

The following section describes the principal comments the Agency received in response to the proposed rulemaking on mercury-containing lamps. Complete comments and the Agency's responses are located in the docket for this rulemaking.

A. Universe of Lamps Covered Under the Final Rule

1. Summary of Proposed Scope and Definition

The Agency proposed to include within the scope of the universal waste rule those spent mercury-containing lamps that are hazardous because they exhibit the characteristic of toxicity. Common types of electric lamps that may contain sufficient concentrations of mercury (or other constituents) to cause them to be hazardous include, but are not limited to, incandescent, fluorescent, high intensity discharge, and neon lamps. In the proposed rule, the Agency also proposed definitions for "electric lamp" and "mercury-containing lamp" and requested comment on these definitions.

In addition, the Agency requested comment on whether the universal waste approach should address all types of spent lamps that fail the toxicity characteristic. The Agency also requested comment on whether and how frequently other types of spent lamps (such as incandescent and neon lamps) fail the toxicity characteristic test or exhibit other characteristics.

2. Summary of Comments Received

The Agency received a significant number of comments on the proposed definitions of "electric lamp" and "mercury-containing lamp." Many commenters requested that EPA clarify which type of lamps would be included within the scope of the final rule. Other commenters provided suggestions on the types of lamps to include within the definition. Many commenters confirmed that mercury-containing lamps include, but are not limited to, fluorescent lamps, mercury vapor lamps, high pressure sodium vapor lamps, and metal halide lamps.

Many commenters concurred with EPA's findings that mercury lamps consistently fail the toxicity characteristic test for mercury. A few commenters stated that many types of spent mercury-containing lamps (especially HID lamps and incandescent lamps) also frequently exhibit the toxicity characteristic for lead, generally because of lead soldered bases and

leaded glass. These commenters generally supported adding all hazardous waste lamps to the universal waste scheme, because they all fit within the universal waste criteria and it would be more convenient to have the same management requirements for all spent lamps. However, a few other commenters opposed adding lamps other than mercury-containing lamps to the universal waste system, mainly because the Agency lacked data on the effects of other constituents. One commenter claimed to have tested incandescent bulbs at one of its facilities and determined that all the bulbs failed the test for lead, and many failed for cadmium as well.

Some commenters believed that spent fluorescent lamps do not exhibit the toxicity characteristic for mercury under certain circumstances. One commenter, who conducted its own testing of fluorescent light bulbs, stated that test results were highly variable and concluded that the test results on lamps are inconclusive. Some commenters stated that the percentage of lamps that pass the test is rising and will continue to rise due to new technologies employed in lamp manufacturing.

Many commenters said that spent mercury-containing lamps meet the established criteria to be classified as a universal waste, and that managing lamps under the universal waste system will encourage recycling and keep lamps out of the municipal solid waste combustors and landfills. Commenters also stated that the universal waste system for lamps will provide a more consistent national management approach, since many states regulate lamps under regulatory programs that are more stringent than the proposed conditional exclusion option. Many states are also currently adding lamps to the scope of their universal waste programs or have already done so.

3. Agency's Response to Comments and Summary of Promulgated Standards

To simplify the proposed definitions, and in response to comments, the Agency is today finalizing a single definition of "lamp" or "universal waste lamp" which is derived from the proposed definitions of "electric lamp" and "mercury-containing lamp."

The Agency agrees with those commenters who believed that all hazardous waste lamps would be appropriately included in the universal waste program. These lamps appear to meet all of the criteria for inclusion in the universal waste rule (see Section III.C above), and EPA does not believe that the presence of other hazardous constituents (principally lead) in spent lamps should preclude such lamps from being managed as universal wastes. Hazardous waste batteries (including lead-acid batteries) are already part of the universal waste scheme, in part because EPA determined that the environmental risks associated with collection and transportation of these materials was relatively low and can be successfully controlled with the universal waste standards. Lead in hazardous waste lamps is largely found in endcaps and in the glass. Lead is not volatile or widely dispersible in the case of lamp breakage, and EPA also notes that the packaging requirements in today's rule will minimize breakage. For these reasons, the Agency is including all waste lamps that exhibit a characteristic in today's rulemaking.

With respect to incandescent lamps, we note that most of these lamps are generated by households or small facilities. Waste lamps that are household waste remain excluded from hazardous waste regulation under 40 CFR 261.4(b)(1). Facilities that generate less than 100 kilograms of hazardous waste in a calendar month, including any hazardous waste lamps that are not managed as universal waste, qualify as conditionally exempt small quantity generators subject to reduced regulation under 40 CFR 261.5. Spent lamps that do not exhibit any hazardous waste characteristic are not subject to Subtitle C regulation.

EPA also notes that waste lamps must be solid waste (i.e., discarded) before they are considered hazardous wastes and thus subject to regulation under RCRA. Section 273.5(c) describes when lamps become wastes. A used lamp becomes a waste on the date that it is discarded. An unused lamp becomes a waste on the date a handler decides to discard it.

B. Requirements for Handlers of Universal Waste Lamps

1. Prohibition on Treatment

a. Summary of Proposed Provision. The Agency requested comments on the same prohibitions for generators and consolidation points that were proposed in the February 11, 1993 universal waste proposal. The Agency had proposed that generators of hazardous waste lamps and consolidation points managing hazardous waste lamps be prohibited from diluting or disposing of the lamps and from treating them except in response to releases.

The Agency requested comments on management practices for lamps, the risks posed by these practices, and appropriate technical controls to minimize these risks which would not inhibit collection and proper management. The Agency requested comment on whether requirements should be included in the final rule to minimize mercury emissions during storage and transport of the lamps.

The definition of treatment under RCRA (40 CFR 260.10) includes any 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, or render such waste non-hazardous or less hazardous, safer to transport, store or dispose of, amenable for recovery, or storage, or reduced in volume. The crushing of spent mercury-containing lamps clearly falls within this definition. The Agency therefore requested comment on whether generators or consolidation points should be allowed to crush lamps intentionally to minimize volume for storage or shipment and which, if any, standards should be imposed to protect against mercury releases during crushing or the subsequent management of crushed lamps.

b. Summary of Comments Received. Several commenters stated that the Agency should maintain its proposed prohibition on waste treatment, including lamp crushing. These commenters said that lamp crushers are a significant source of mercury emissions and that many lamp recyclers prefer to receive whole lamps. Other commenters stated that generators should be allowed to separate, consolidate, and crush their own lamps. Many commenters supported allowing crushing if it were safely performed, and some commenters stated that crushing is necessary to reduce storage and transportation costs. Information submitted to the Agency on drum top crushing systems for lamps indicates that there is a wide range of air emissions of mercury from these units, depending on the type of controls, and that in some units emissions of mercury exceed the OSHA limit of 0.05 mg/m^3.

c. Agency's Response to Comments and Summary of Promulgated Standards. The Agency is adopting for universal waste lamps the prohibitions in the final universal waste rule promulgated on May 11, 1995. In general, as explained in the preamble to the universal waste rule (60 FR 25519), the Agency does not believe that universal waste handlers, who are not required to comply with the full Subtitle C management standards, should treat universal wastes. Therefore, under today's rule, both small and large quantity handlers of universal waste

lamps are prohibited from diluting or treating universal waste lamps except by responding to releases as provided in §§ 273.17 and 273.37. Prohibitions for small quantity handlers are found in § 273.11 and for large quantity handlers in § 273.31. The prohibition against treatment includes a prohibition of crushing of lamps. EPA is particularly concerned that uncontrolled crushing of universal waste lamps in containers meeting only the general performance standards of the universal waste rule would not sufficiently protect human health and the environment. As stated earlier, the prevention of mercury emissions during collection and transport is one of the principal reasons that the Agency selected the universal waste approach. Allowing uncontrolled crushing would be inconsistent with this goal.

The Agency is aware that a number of states have already added spent lamps to their universal waste programs. Available information indicates that some of these state programs prohibit crushing of spent lamps, but that at least some state programs may allow crushing under regulatory requirements designed to control emissions of hazardous constituents, particularly mercury. The Agency believes that some state programs may include standards for controlling emissions from mercury-containing lamps during crushing that could be equivalent, per RCRA Section 3006, to the federal prohibition.

Therefore, EPA will consider authorization of state programs that include provisions for controlling treatment or crushing of universal waste lamps, where the state program application includes a demonstration of equivalency to the federal prohibition. Factors the Agency would expect such an application to address include the effectiveness of technical requirements in controlling emissions of hazardous constituents, the level of interaction of regulated entities with the regulatory agency to ensure compliance with control requirements, and other factors demonstrating that the state regulatory program would be equivalent to the federal treatment prohibition.

2. Notification Requirement

a. Summary of Proposed Provision. The Agency proposed a notification requirement for generators and consolidation points (i.e., handlers of universal waste lamps) storing more than 35,000 spent lamps. The Agency proposed a numerical rather than a weight limit because lamp packaging (the cardboard boxes in which new replacement lamps are shipped) may constitute a large proportion of the total weight of a shipment or stored quantity of lamps. In addition, industry practice is generally to count lamps by number rather than by weight, calculated by multiplying the number of boxes of lamps in storage or in a shipment by the number of lamps per box. Since a full truckload of fluorescent lamps consists of approximately 35,000 lamps, the Agency proposed that universal waste handlers storing 35,000 lamps or more at any time be required to send a written notification of universal waste lamp storage to the applicable EPA Regional Administrator (or authorized state director) and obtain an EPA Identification Number.

b. Summary of Comments Received. The Agency received only a few comments on the proposed quantity limit for the notification requirement. One commenter suggested increasing the limit to 80,000 lamps. About half the commenters supported the general notification requirement for generators and consolidation points. Other commenters stated that the notification requirement was unnecessary and burdensome since generators may already possess an EPA identification number.

c. Agency's Response to Comments and Summary of Promulgated Standards. In the interest of consistency with the final universal waste rule, the Agency has decided that the 5,000 kilogram limit for the accumulation of all universal wastes will apply to all universal waste handlers (i.e., handlers of batteries, pesticides, mercury thermostats, and lamps). As explained in the preamble to that rule, the Agency believes that the total amount of universal waste at a handler's site is a better indicator of potential risk than the quantity of individual universal wastes being accumulated and handled at that site. EPA has determined that the 5,000 kilogram limit is appropriate for facilities handling universal waste lamps. The Agency believes that it is just as practical to set the notification requirement on the basis of a quantity (or weight) of waste accumulated as on the total number of items generated. Handlers can weigh the amount of waste as easily as they can count the total number of individual light bulbs accumulated, and can also subtract the weight of the packaging.

In response to commenters who said that the notification requirement will be burdensome, the Agency points out that those generators who have already notified EPA of their hazardous waste management activities are not required by the universal waste rule or today's final rule to re-notify EPA or obtain a new identification number. Prior to today's rulemaking, many lamps that are hazardous waste were required to be managed in accordance with all applicable Subtitle C hazardous waste management standards, including the RCRA notification provisions. Therefore, the notification requirement in today's rule is a new requirement only for generators of universal waste lamps that have never generated more than 100 kg of hazardous waste in a calendar month, but now accumulate more than 5,000 kg of universal waste lamps.

3. Prevention of Releases/Packaging Requirements

a. Summary of Proposed Provision. The Agency proposed that generators and consolidation points be required to manage hazardous waste lamps in a manner that minimizes lamp breakage. The proposal required that unbroken lamps be contained in packaging that will minimize breakage during normal handling conditions, and broken lamps be contained in packaging that will minimize releases of lamp fragments and residues.

The Agency requested comment on appropriate management controls for handlers of spent mercury-containing lamps that would minimize potential releases of mercury during collection, accumulation, storage and transport. Approaches suggested by the Agency included requiring performance standards for packaging to minimize lamps breakage. EPA expected that the packaging in which new replacement lamps are shipped from the manufacturer would frequently be reused to store and transport removed, used lamps. The Agency also suggested that requirements could be imposed on storing and transporting spent lamps that are inadvertently broken to prevent further mercury emissions. For example, 55-gallon steel drums or any enclosed container could be used to hold broken lamps for transportation to a recycling facility or a disposal site.

b. Summary of Comments Received. A number of commenters, including both lamp manufacturers and mercury lamp recycling facilities, supported container or packaging standards to minimize lamp breakage during accumulation, storage, and transport. Lamp recycling facilities in particular voiced a preference for spent lamps to be stored and transported in packaging that protects the spent lamps from potential breakage. Commenters representing recycling facilities pointed out that proper packaging will prevent releases of mercury to the environment before the lamps arrive at recycling facilities. These commenters stated that lamp

recycling facilities prefer to receive intact, unbroken lamps so that the lamps can be crushed in a closed, controlled environment at the recycling facility to allow for the capture and recycling of the available mercury. In addition, commenters pointed out that broken lamps and potential releases of mercury can endanger the safety of employees at the recycling facility. Commenters representing both lamp manufacturers and lamp recyclers recommended that intact lamps be stored in original cartons or specially designed containers (e.g., fiber containers with closed lids) that will protect the spent lamps from breakage. Commenters pointed out that unintentionally broken lamps should be stored and transported in closed drums or other puncture-proof containers that are sealed and properly labeled.

Although many commenters supported the promulgation of packaging or container requirements to reduce lamp breakage and reduce mercury emissions during storage and transport, other commenters stated that mercury emissions from broken lamps do not pose a threat to human health and the environment and that therefore protective package may not be necessary.

c. Agency's Response to Comments and Summary of Promulgated Standards. The Agency agrees with the commenters who stated that universal waste lamps should be stored and packaged in a way that minimizes lamp breakage. Recent studies (such as that performed by the Research Triangle Institute) show that significant releases of mercury during storage and transport can occur as a result of lamp breakage. EPA therefore disagrees with those commenters who stated that breakage presents no threat to human health and the environment. Today's final rule adds a subsection (d) for universal waste lamps to the universal waste management §§273.13 and 273.33 for small quantity handlers and large quantity handlers respectively. The Agency believes that these standards generally satisfy the concerns of commenters for environmental protection. The packaging provisions generally resemble the universal waste packaging requirements for mercury-containing thermostats.

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 constituents 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.

4. Accumulation Time

a. Summary of Proposed Provision. In the proposed spent mercury-containing lamps rule, the Agency proposed to limit the time period in which handlers may accumulate such lamps on-site to one year following the date that a lamp becomes a waste. In addition, the Agency proposed several alternative ways to demonstrate compliance with this provision, and solicited comment on the alternatives. The proposed regulations required that generators and consolidation points either mark the container, mark the individual lamps, maintain an inventory system, or place lamps in a specific storage area while identifying the earliest date a lamp was placed in that area.

b. Summary of Comments Received. Generally, most commenters supported the proposed one-year storage time limitation and compliance demonstration requirements. A few commenters stated that each lamp should be dated as soon as it is removed from the lamp fixture to verify compliance with the one-year time limit. Some commenters stated that the one year storage limit was too long and increased the probability of broken lamps. These commenters suggested reducing the time limit to 180 days, 90 days, or 10 days. Other commenters stated that the one-year limit was too restrictive and did not allow for proper recovery, treatment, or disposal. One commenter suggested that a provision be included for case-by-case extensions to the storage time limit if necessary.

c. Agency's Response to Comments and Summary of Promulgated Standards. In today's rule, the Agency has decided to adopt the accumulation time limit requirements in the universal waste rule (§§273.15 and 273.35) for small and large quantity handlers of spent lamps. These requirements are similar to the provisions for the accumulation time limit in the proposed spent mercury-containing lamps rule. However, to remain consistent with the universal waste rule, handlers of universal waste lamps are allowed accumulation for more than one year if such accumulation is solely for accumulating such quantities of universal waste as are necessary to facilitate proper recovery, treatment, or disposal. For any accumulation longer than one year, the handler must be able to prove that such accumulation is solely for accumulating quantities necessary to facilitate proper recovery, treatment, or disposal (it is assumed that any accumulation up to one year is for this purpose). Notification to the EPA Regional Administrator of extended storage is not required; however, authorized states may have more stringent requirements.

The final rule requires that handlers of universal waste lamps comply with one of the following measures to demonstrate compliance with the accumulation time limit: mark the container holding the lamp, mark the individual lamp, maintain an inventory system, place the lamps in a specific storage area marked with the earliest date a lamp is placed in the area identified, or use any other method which demonstrates the length of time that the lamp has been accumulated from the date the lamp becomes a waste or is received.

In response to comments requesting a different accumulation time, the Agency believes that this issue was addressed in the final universal waste rule (60 FR 25526). In that rule, the Agency recognized that one year may not be sufficient for some handlers to accumulate enough universal waste to properly recover, treat, or dispose of the waste. By allowing accumulation for longer than one year, certain facilities will have the additional time they need

to facilitate proper recovery, treatment, or disposal. However, for any accumulation longer than one year, the burden of proof is on the handler to demonstrate that such accumulation is solely for accumulating quantities necessary to facilitate proper recovery, treatment, or disposal. Although the Agency agrees with commenters that it is possible to send spent lamps to a management facility in a shorter period of time, there does not appear to be a strong environmental justification for such a requirement.

Also in response to comments received, the Agency is not modifying the proposed demonstration requirement to show compliance with the accumulation time limit (40 CFR 273.15 and 273.35). Labeling each individual tube with the date that it is removed from the fixture is an acceptable means of identifying the accumulation time. However, the Agency believes that the other measures for showing compliance with the accumulation time limit are adequate and impose a smaller burden, particularly upon small quantity handlers.

5. Tracking of Shipments

a. Summary of Proposed Provision. The Agency requested comment on several ways to track off-site shipments of waste lamps. One suggested approach required the use of a hazardous waste manifest (and thus a hazardous waste transporter) for shipments from the last consolidation point to the destination facility. However, no manifests or other records (or hazardous waste transporters) would be required for shipments from generators to consolidation points or from generators to destination facilities. This approach is the same as that presented in the universal waste proposal. Another approach suggested by the Agency was to require that persons initiating and receiving shipments of spent lamps retain shipping papers documenting all shipments. The last approach suggested was requiring that persons claiming an exemption from the hazardous waste manifesting requirements must keep documentation to show that they qualified for such an exemption (specific shipment records need not be retained). In the proposed spent mercury-containing lamps rule, the Agency stated that because of the large volume of lamp shipments, such shipments are more likely than other universal wastes to be made directly from the generator to the destination facility. Records would be available for such shipments because destination facilities are already required under the hazardous waste regulations to maintain records, including the description and quantity of each hazardous waste received.

b. Summary of Comments Received. Some commenters opposed any tracking and recordkeeping requirements for the shipment of spent lamps. Several commenters said that the use of manifests for generators and consolidation points is not necessary to track the transportation of spent lamps, and that this requirement would create an unnecessary cost burden. These commenters believed that the increased costs and administrative burden of using manifests and hazardous waste transporters would discourage the collection of universal waste and would inhibit removal of these wastes from solid waste landfills and incinerators. Commenters suggested that the documentation requirements for generators and consolidation points should be flexible. However, many commenters, including some of those who opposed manifests, supported some form of tracking requirement to document the transport of universal wastes. These commenters argued that a less burdensome tracking requirement would not inhibit participation in collection programs. Further benefits might include reduction of liability for persons managing universal waste, increased enforceability of the universal waste system, and decreased potential for abuse of the streamlined universal waste requirements. Some commenters supported stringent tracking requirements, and a few stated that all consolidation points should be required to accompany lamp shipments with a manifest to protect generators from potential liability. One commenter stated that receiving facilities should keep documentation of all shipments received until the facility closes.

c. Agency's Response to Comments and Summary of Promulgated Standards. In the final universal waste rule, the Agency decided to require tracking only for large quantity handlers of universal waste. EPA believed that tracking was needed only in cases where facilities are handling larger quantities of universal waste, thus posing potentially greater environmental risk. The Agency decided not to impose these requirements on small quantity handlers of universal waste because it agreed with those commenters who said that the administrative burden of tracking would discourage retail establishments, service centers, and other "front line" collectors managing small quantities of waste from participating in collection programs, thus undermining the goal of the universal waste program. In addition, because these operations accumulate smaller quantities of universal wastes, they will generally pose less risk than facilities accumulating larger quantities.

EPA believes that these arguments apply with equal force to handlers of universal waste lamps. In today's rule, the Agency is therefore adopting the universal waste tracking requirements in part 273 for such lamps. The tracking provisions for small and large quantity handlers of universal waste are found in §§ 273.19 and 273.39, respectively. The universal waste rule includes a recordkeeping requirement to track waste shipments arriving at and leaving from large quantity handlers. 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. 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.

C. Storage Time Limitation for Transporters of Universal Waste Lamps

1. Summary of Proposed Provision

The proposed regulations for transporters of mercury-containing lamps were designed to be consistent with the proposed universal waste rule. The Agency proposed to allow transporters of universal waste lamps to store spent lamps for up to ten days at a transfer facility during the course of transportation. A transporter storing spent lamps for more than ten days at one location would have to comply with the appropriate universal waste handler requirements in managing the wastes accumulated at the accumulation site, in addition to complying with the applicable universal waste transporter requirements.

2. Summary of Comments Received

In response to the proposed universal waste rule, the Agency received

comments from two commenters who argued for a longer storage time limit for transporters. In addition, one commenter argued that the Agency should limit the total transportation time allowed for a waste to reach its destination, rather than impose a time limit for storing the waste during transport. The commenters, however, provided little information to justify a longer in-transit storage time limit. The Agency proposed the same accumulation time limit for transporters of universal waste lamps in the proposed rulemaking on mercury-containing lamps. The transporter accumulation time limit in the proposed universal waste rule was not significantly changed in the final universal waste rule, except to clarify that if the waste is stored for greater than 10 days, the transporter is subject to the standards for small or large quantity handlers.

3. Agency's Response to Comments and Summary of Promulgated Standards

Today's final rule adopts the storage time limit standards for transporters of universal waste lamps as promulgated in the universal waste rule. Under 40 CFR 273.53 of the universal waste regulations, transporters can store universal waste at a transfer facility for ten days or less. If the ten day limit is exceeded, the transporter becomes a universal waste handler and must comply with the applicable small or large quantity handler requirements under subparts B or C of part 273 while storing the universal waste. The Agency chose to retain the proposed 10-day accumulation limit for transporters of universal waste, consistent with the limit for transfer facilities handling other types of hazardous waste. In response to the commenter requesting that the Agency limit total transport time, rather than set a limit on the accumulation time at transfer facilities, EPA does not believe that a limit on total transportation time is practicable because of the extreme variation in the time needed to deliver shipments to different parts of the country. It is generally in the economic self-interest of transporters to make deliveries as quickly as possible. Delays in transport usually imply the likelihood of storage, so a limit on such storage seems the most efficient way to protect human health and the environment.

D. Destination Facility Requirements/ Lamp Recycling Facilities

1. Summary of Proposed Provision

Today's rule does not amend the existing standards for destination facilities receiving universal waste. Destination facilities remain subject to full subtitle C regulation, including all applicable requirements of parts 264, 265, 266, 268, 270, and 124. A recycling facility that does not store universal waste lamps before recycling them must comply with § 261.6(c)(2).

The existing requirements for destination facilities (i.e., hazardous waste treatment, storage, and disposal (TSD) facilities, or recycling facilities that do not store hazardous waste before recycling) are found in subpart E of part 273. Subpart E requires that destination facilities remain subject to full subtitle C regulation. These provisions are the same as those proposed in the proposed spent mercury-containing lamps rule.

The proposed spent mercury-containing lamps rule required that destination facilities recycling hazardous waste lamps prior storage must comply with 40 CFR 261.6(c)(2), which requires that facilities recycling universal waste obtain an EPA identification number. If a recycling facility stores hazardous waste lamps before recycling or performs treatment other than recycling, the facility is subject to full subtitle C hazardous waste management regulations, including the RCRA permitting requirements.

2. Summary of Comments Received

The Agency received many comments addressing the regulation of mercury lamp recycling facilities. Some commenters stated that mercury lamp recyclers are a potential threat to the environment because these facilities lack substantive regulation. A number of commenters suggested that the Agency implement standards for recycling facilities, and suggested best management practices that would reduce releases of mercury into the environment from these facilities.

3. Agency's Response to Comments and Summary of Promulgated Standards

Today's rule does not amend the existing standards for recycling facilities receiving universal waste. In general, destination facilities, including recycling facilities, remain subject to full hazardous waste regulation. A recycling facility that does not store universal waste lamps prior to recycling the lamps is subject only to 40 CFR 261.6(c)(2).

The Agency believes that changing requirements for destination facilities (including lamp recyclers) is beyond the scope of today's regulation, which addresses the generation and collection of universal waste lamps rather than final treatment, disposal, or recycling. EPA believes that with adequate state oversight, universal waste lamps can be safely recycled, allowing the mercury and other economically viable materials to be reclaimed. Safe recycling should ensure that residuals from recovery operations are managed in accordance with all applicable solid and hazardous waste management requirements. Residuals that exhibit a characteristic of hazardous waste must be managed as hazardous waste.

The Agency received no comments concerning the provisions for universal waste destination facilities, other than those addressing lamp recycling facilities. Therefore, today's rule does not amend the existing standards for treatment and disposal facilities receiving universal waste. Treatment and disposal facilities that receive universal waste lamps are subject to the same standards that apply to permitted or interim status hazardous waste treatment, storage, and disposal facilities. These standards include notification requirements, general facility standards, unit-specific management standards, and permitting requirements. The Agency notes that facilities that store universal waste lamps, but do not treat, dispose, or recycle them, are considered handlers and not destination facilities.

E. Sunset Provision

1. Summary of Proposed Provision

In the proposed lamps rule, the Agency requested comments on whether to include a three to five-year sunset provision in the final rule. A sunset provision would require EPA to re-evaluate the effectiveness of the universal waste system in addressing the disposal of lamps after three to five years. At that time, the Agency could decide whether fewer controls or more controls were needed to maintain the safe management of lamps.

2. Summary of Comments Received

More than half of the comments received generally supported a three to five year sunset provision. Commenters stated that a sunset provision would allow the Agency to examine any new information on lamp management and the fate and transport of mercury, and re-evaluate options as necessary.

Other commenters did not support the proposed three to five year sunset provision. Commenters stated that a sunset provision or other deadline was not necessary and that the Agency already had the authority to re-evaluate the rule at any time.

3. Agency's Response to Comments and Summary of Promulgated Standards

Today's final rule does not include a sunset provision. The Agency believes that the data and information provided to the Agency, along with the Agency's own studies and analyses (available in the docket for this rulemaking) provide adequate evidence of the behavior of mercury in the environment and potential releases of mercury to support today's final rule. The Agency notes, however, that if additional information about the behavior of mercury becomes available in the future, the Agency may re-evaluate the standards promulgated in today's final rule.

VI. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA hazardous waste program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found at 40 CFR part 271.

Prior to enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its hazardous waste program entirely in lieu of EPA administering the federal program in that State. The federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in that State, since only the State was authorized to issue RCRA permits. When new, more stringent federal requirements were promulgated or enacted, the State was obligated to enact equivalent authorities within specified time frames. However, the new federal requirements did not take effect in an authorized State until the State adopted the federal requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), which was added by HSWA, new requirements and prohibitions imposed under HSWA authority take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed by the statute to implement these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA related provisions as State law to retain final authorization, EPA implements the HSWA provisions in authorized States until the States do so.

Authorized States are required to modify their programs only when EPA promulgates federal requirements that are more stringent or broader in scope than existing federal requirements. RCRA section 3009 allows the States to impose standards more stringent than those in the federal program. See also 40 CFR 271.1(I). Therefore, authorized States can, but do not have to, adopt federal regulations, both HSWA and non-HSWA, that are considered less stringent.

B. Effect on State Authorization

Today's rule is not promulgated pursuant to HSWA. Therefore the rule is applicable on the effective date only in those States that do not have final RCRA authorization. Today's rule is also less stringent than the current federal program. Because States are not required to adopt less stringent regulations, they do not have to adopt the universal waste regulations for spent lamps. A number of States have added spent lamps to their universal waste programs or are in the process of doing so. While these actions are specifically allowed under the universal waste rule, if a State's standards for spent lamps are less stringent than those in today's rule, the State will need to amend its regulations to make them equivalent to today's standards and pursue authorization.

As noted earlier, EPA recognizes that States have been proactive in adopting universal waste standards for spent lamps. Some of these standards allow crushing of lamps under certain conditions. Although today's rule does not provide for crushing, EPA believes that State programs could have standards for crushing which will be equivalent to the federal rules and thus appropriate for authorization. EPA also believes that this flexibility will allow for a minimal level of disruption to existing State programs. The Agency will determine at the time of authorization whether a State regulation that allows crushing is equivalent to the federal standard.

C. Interstate Transport

Due to the fact that not all States will choose to seek authorization for today's rulemaking, there may be only a few destination facilities that will accept and manage universal waste lamps. The Agency believes that it is important to explain how the regulations will apply because interstate transportation will be necessary for these wastes.

First, a waste which is subject to the universal waste regulations may be sent to a State, or through a State, where it is not a universal waste and where it would be subject to the full hazardous waste regulations. In this scenario, for the portion of the trip through the originating State, and any other States where the waste is a universal waste, neither a transporter with an EPA identification number per 40 CFR 263.11 (hazardous waste transporter) nor a manifest would be required. However, for the portion of the trip through the receiving State, and any other States that do not consider the waste to be a universal waste, the transporter must have a manifest, and must move the waste in compliance with 40 CFR Part 263. In order for the final transporter and the receiving facility to fulfill their requirements concerning the manifest (40 CFR 263.20, 263.21, 263.22; 264.71, 264.72, 264.76 or 265.71, 265.72, and 265.76), the initiating facility should complete a manifest and forward it to the first transporter to travel in a State where the waste is not a universal waste. The receiving facility must then sign the manifest and send a copy to the initiating facility. EPA recommends that the initiating facility note in block 15 of the manifest (Special Handling Instructions and Additional Information) that the wastes are covered under the universal waste regulations in the initiating State but not in the receiving facility's State.

Second, a hazardous waste generated in a State which does not regulate it as a universal waste may be sent to a State where it is a universal waste. In this scenario, the waste must be moved by a hazardous waste transporter while the waste is in the generator's State or any other States where it is not a universal waste. The initiating facility would complete a manifest and give copies to the transporter as required under 40 CFR 262.23(a). Transportation within the receiving State and any other States that regulate the waste as a universal waste would not require a manifest and need not be conducted by a hazardous waste transporter. However, it is the initiating facility's responsibility to ensure that the manifest is forwarded to the receiving facility by any non-hazardous waste transporter and sent back to the initiating facility by the receiving facility (see 40 CFR 262.23 and 262.42). EPA recommends that the generator note in block 15 of the manifest (Special Handling Instructions and Additional Information) that the waste is covered under the universal waste regulations in the receiving facility's State but not in the generator's State.

Third, a waste may be transported across a State in which it is subject to the full hazardous waste regulations although other portions of the trip may be from, through, and to States in which it is covered under universal waste regulations. Transport through the State must be conducted by a hazardous waste transporter and must be accompanied by a manifest. In order for the transporter to fulfill its requirements concerning the manifest (Subpart B of Part 263), the initiating facility must complete a manifest as required under the manifest procedures and forward it to the first transporter to travel in a State where the waste is not a universal waste. The transporter must deliver the manifest to, and obtain the signature of, either the next transporter or the receiving facility.

As noted previously, States are not required to adopt today's rule. However, EPA strongly encourages them to do so. As more States add spent lamps in their universal waste program, not only will this assist in achieving the most benefits of the universal waste program, it will also reduce the complexity of interstate transport of these universal wastes.

VII. Regulatory Requirements

A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735), the Agency must determine whether this regulatory action is "significant" and therefore subject to formal review by the Office of Management and Budget (OMB) and to the requirements of the Executive Order, which include assessing the costs and benefits anticipated as a result of the proposed regulatory action. The Order defines "significant regulatory action" as one that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. Pursuant to the terms of Executive Order 12866, the Agency has determined that today's final rule is a significant regulatory action because this final rule contains novel policy issues. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record. Although this rule is not "economically significant", the Agency has prepared the supporting analysis: Modification of the Hazardous Waste Program: Hazardous Waste Lamps—Final Economic Assessment (Economic Assessment). The findings from this analysis are presented below.

B. Economic Assessment

The Economic Assessment conducted in support of today's final rule analyzed impacts associated with this final universal waste action, plus the primary alternative of promulgating a conditional exclusion for lamps. Although the final rule includes all hazardous waste lamps in the universal waste program, this Economic Assessment addresses only mercury-containing fluorescent lamps. The Agency estimates that non-fluorescent lamps represent approximately 0.8 to 1.7 percent of the total universe of lamps addressed under today's rulemaking. The comparatively negligible proportion of other hazardous waste lamps is not expected to appreciably affect the impact estimates presented in this analysis.

Fluorescent lamps contain a small amount of mercury that emits light when stimulated with electrical current. When a fluorescent lamp breaks, the mercury in the lamp is released into the environment and may cause health risks, primarily through consumption of fish. Neurotoxicity is the health effect of greatest concern for humans; death, reduced reproductive success, impaired growth and development, and behavioral abnormalities are effects of concern to fish, birds, and mammals. Lamp mismanagement scenarios indicate that, without government intervention, market failures will likely lead to disposal activities resulting in unnecessarily high releases of mercury to the environment.

Prior to today's final action, spent lamps that failed the toxicity characteristic leaching procedure (TCLP) test were automatically considered hazardous wastes under RCRA and subject to full Subtitle C management requirements, unless the lamps are generated by a household or a conditionally-exempt small quantity generated. EPA recognized the confusion and mismanagement patterns historically associated with maintaining spent hazardous waste lamps within the Subtitle C system. The Agency is taking today's final action of adding spent lamps to the scope of universal waste regulations in an effort to streamline the current regulations governing the management of such lamps, increase lamp management efficiency, and ultimately to cause a potential reduction in aggregate mercury emissions. The Agency's final action of adding spent lamps to the scope of the universal waste system, however, is not expected to completely determine how these lamps will be managed in individual states. States already have the option of including lamps within their universal waste programs. Furthermore, states that have not chosen to adopt universal waste programs, or have not included lamps within their universal waste programs, are not obligated to do so in response to EPA's decision.

The universal waste regulations include requirements for the proper packaging of spent lamps, storage of spent lamps, EPA notification, and responses to releases. EPA selected this action over the other proposed option which would have been based on a conditional exclusion (CE). The CE would have excluded spent mercury-containing lamps from regulation as hazardous waste. The addition of spent lamps to the universal waste regulations is considered a deregulatory action and imposes fewer requirements on generators and transports of spent lamps than the hazardous waste management standards under RCRA Subtitle C. The proposed conditional exclusion would have been deregulatory as well.

The Economic Assessment conducted in support of today's final rule analyzed impacts associated with the final universal waste action, plus the primary alternative of promulgating a conditional exclusion for lamps. Two different compliance scenarios are examined in the baseline, and under each option in an effort to incorporate alternative management practices. The first (high) compliance scenario assumes 100 percent compliance under all regulatory schemes. The second (low) compliance scenario assumes 20 percent compliance under a scenario where handlers of spent mercury-containing lamps are subject to full Subtitle C, 80 percent compliance under the universal waste option, and 90 percent compliance under the conditional exclusion option. The reader should refer to the report: Mercury Emissions From The Disposal of Fluorescent Lamps—Revised Model, Final Report, for a detailed discussion of estimated compliance rates. This report is available in the RCRA docket established for today's action.

The total national annualized costs of compliance and disposal under the baseline are estimated at $80.01 million

and $54.37 million under the high and low compliance scenarios, respectively. Under the universal waste final action these costs are projected at $78.52 million under the high compliance scenario and $56.14 million for the low compliance scenario. In the high compliance scenario, the costs under full Subtitle C and universal waste are close because transportation and disposal costs, which account for approximately 76 percent of total costs, are virtually the same. Under the low compliance scenario, costs under the universal waste final action are higher than under the full Subtitle C baseline because of the higher compliance rate assumed under the universal waste scheme. While costs could increase for some non-exempt entities under the universal waste approach, this would be the result of non-compliance in the baseline. These costs would not appropriately be attributable to this rulemaking. Compliance and disposal costs under the conditional exclusion option also were examined. Aggregate annualized costs under the conditional exclusion option are estimated at $73.90 million and $52.60 million for the high and low compliance scenarios, respectively.

The Economic Assessment also examined economic impacts on affected facilities. EPA's final universal waste action is projected to result in cost savings to affected generators under the high compliance scenario. Adverse impacts on generators, therefore, are not anticipated. However, actual costs to some generators may increase under the low compliance scenario. The magnitude of the potential cost increase under this scenario, however, would not result in meaningful impacts on affected generators. In addition to generators, the Assessment also examined potential economic impacts on consolidation and recycling facilities. The Agency found that few, if any, spent fluorescent lamp consolidation facilities exist at present or are likely to exist in the future as independent economic entities. Impacts on consolidated facilities dedicated to spent fluorescent lamps, therefore, were not examined. Recycling facilities may benefit indirectly due to today's final, which may result in additional revenues for firms owning or operating recycling facilities.

The Economic Assessment projected changes in total nationwide mercury emissions resulting from the universal waste final action and the conditional exclusion option. Average annual emissions corresponding to the management of spent mercury-containing fluorescent lamps (four-foot equivalents) were projected over the 1998 through 2007 period. Under the high compliance scenario, average annual baseline emissions were estimated at 790.4 kilograms. Emissions under the universal waste final action were projected at 790.5 kilograms, resulting in an incremental increase of 0.1 kilograms, or 0.013 percent above the baseline. Emissions under the conditional exclusion option are projected at 798.4 kilograms, or 1.012 percent beyond the baseline. Under the low compliance scenario, average annual baseline emissions are estimated at 822 kilograms. The universal waste final action is projected to result in average annual emissions of 819.2 kilograms. This is a reduction of 2.8 kilograms, or 0.341 percent. Emissions under the conditional exclusion option increase by 10.5 kilograms, or 1.277 percent beyond the baseline.

The examination of cost-effectiveness may help put the above emission increments into perspective. Cost-effectiveness allows for the direct comparison of costs, or cost savings on a per kilogram basis. Under the high compliance scenario, shifting from the baseline to the universal waste final action is projected to result in cost savings of $10.5 million per additional kilogram of mercury emitted. This implies that it would be very expensive, on a per kilogram basis, to keep emissions low by holding to a high compliance baseline. Under the low compliance scenario, shifting from the baseline to the universal waste final action is projected to result in a cost increase of $0.63 million per kilogram of mercury reduced. Furthermore, today's final action is projected to cut emissions by over thirteen kilograms per year compared to the conditional exclusion option, at a cost of approximately $0.27 million per kilogram.

For more information on the cost and emissions impacts associated with today's final rule see the EPA report: Modification of The Hazardous Waste Program: Hazardous Waste Lamps—Economic Assessment. This report is available from the RCRA docket established for this action.

C. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) whenever an Agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. The following discussion explains EPA's determination.

The small entity analysis conducted for today's final action indicates that the addition of spent lamps to the universal waste system would generally result in savings to affected entities relative to baseline requirements. Under the full compliance scenario, the rule is not expected to result in a net cost to any affected entity. Thus, adverse impacts are not anticipated. Costs could increase for entities that are not complying with current requirements, but even these costs (which are not properly attributable to the current rulemaking) would not be expected to result in significant impacts on a substantial number of small entities. Based on the foregoing discussion, I hereby certify that this rule will not have a significant adverse economic impact on a substantial number of small entities. Consequently, the Agency has determined that preparation of a formal Regulatory Flexibility Analysis is unnecessary.

For more information on small entity impacts potentially associated with today's final rule see the EPA report: Modification of the Hazardous Waste Program: Hazardous Waste Lamps—Regulatory Flexibility Screening Analysis. This report is available from the RCRA docket established for this action.

D. Environmental Justice

Under Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," as well as through EPA's April 1995 "Environmental Justice Strategy, OSWER Environmental Justice Task Force Action Agenda Report", and the National Environmental Justice Advisory Council, EPA has undertaken to incorporate environmental justice into its policies and programs. EPA is committed to addressing environmental justice concerns, and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population,

regardless of race, color, national origin, or income, bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities. To address this goal, EPA conducted a qualitative analysis of the environmental justice issues under this final rule. Potential environmental justice impacts are identified consistent with the EPA's Environmental Justice Strategy and the OSWER Environmental Justice Action Agenda. In addition, public comments received on the 1994 proposal that relate to environmental justice were reviewed for this analysis.

As mentioned before, the primary concern regarding management of spent mercury-containing lamps is the air emissions as a result of crushing and accidental breakage during transport, lamp management, or disposal. Mercury air emissions can have human health effects through direct contact or indirect human contact by consuming fish and shellfish, or through contamination of drinking water (perhaps from inadequate disposal measures).

From a direct exposure standpoint, the transient nature of mercury air emissions results in less concern to the location of minority and low-income populations than might be expected. Since atmospheric mercury can travel thousands of miles (and beyond U.S. borders), an environmental justice analysis does not require a detailed geographic analysis. However, populations immediately surrounding transportation, incineration, recycling, crushing, or disposal facilities may be exposed to a higher concentration of emissions than those populations living further away. If these types of facilities are located more often in communities characterized by low-income or minority populations, there may be disproportionate impacts to those populations from the promulgation of today's final rule. If the location of such facilities is random with respect to race or income, disproportionate impacts could be said not to exist. The low compliance scenario is examined for the environmental justice analysis.

Of the indirect exposure pathways, the ingestion of mercury-contaminated fish and shellfish has been shown to be of the highest concern due to mercury's propensity to bioaccumulate in the aquatic environment. This can present an environmental justice issue since the bulk of subsistence fisher populations consist of low-income people. These subsistence fisher populations rely on locally-caught fish as an inexpensive source of protein or due to cultural reasons. However, since today's rule is expected to improve compliance, and thus adequate management of mercury-containing lamps, it is expected that there will be a positive impact on these populations, with less mercury available to contaminate aquatic environments.

No disproportional impacts for low-income or minority communities are expected as a result of the final action for the following reasons:

(1) The environmental impact of the final universal waste action is small. The 10-year modeling period projects a net decrease in emissions (low-compliance scenario) at approximately 30 kilograms under the universal waste final action. The conditional exclusion option would have shown an increase (approximately 105 kg) in mercury emissions over 10 years. In either case, the wide distribution of mercury emissions is unlikely to create significant impacts on any particular community.

(2) The distribution of the municipal waste combustors and recycling facilities throughout minority and/or low income counties in the United States does not suggest any distributional pattern around communities of concern. Lamps crushing, legal or illegal, is difficult to measure because any building in any area is a potential source. Specific impacts on low income or minority communities, therefore, are undetermined. The Agency believes that emissions during transportation would not be a major contributor to communities of concern through which lamps may be transported. Any lamps broken during transport would be contained in the packaging. The Agency recognizes, however, the potential for some increased risk to transportation workers. Overall, no disproportional impacts to minority and/or low income communities are expected.

For more information on the environmental justice analysis conducted in support of today's final rule see the EPA report: Modification of the Hazardous Waste Program: Hazardous Waste Lamps—Economic Assessment. This report is available from the RCRA docket established for this action.

E. National Technology Transfer and Advancement Act of 1995 (NTTAA)

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, though OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This rule does not establish technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

F. Executive Order 13045—Children's Health

"Protection of Children From Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that EPA determines (1) "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must: Evaluate the environmental health or safety effects of the planned rule on children; and explain the environmental health or safety effects of the planned rule on children; and explain why the planned regulation is preferable to other potential effective and reasonably feasible alternatives considered by the Agency. We believe this final rule is not subject to E.O. 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) because it is intended to be deregulatory. However, an analysis of the potential effects of this action on children's health in the spirit of the Executive Order and consistent with the Agency's ongoing concern with children's health, is included in section II of today's preamble.

G. Regulatory Issues—Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for the proposed and final rules with "federal mandates" that may result in expenditures by state, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year.

Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA established any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enable officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The Agency's analysis of compliance with the Unfunded Mandates Reform Act (UMRA) of 1995 found that today's final rule imposes no enforceable duty on any State, local or tribal government or the private sector. This final rule contains no federal mandates (under the regulatory provisions of Title II of the UMRA) for state, local, or tribal governments or the private sector. In addition, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. The Act generally excludes from the definition of "federal intergovernmental mandate" (in sections 202, 203, and 205) duties that arise from participation in a voluntary federal program. Adopting today's final action, because it is less stringent, is optional. The universal waste final action, therefore, could be interpreted as voluntary and not subject to the Unfunded Mandates Analysis requirement. Furthermore, today's final action is deregulatory and will not impose incremental costs in excess of $100 million to the private sector, or to state, local, or tribal governments in the aggregate.

H. Paperwork Reduction Act

The Information Collection Request (ICR) detailing the information collection requirements associated with today's rule will be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* A copy of the ICR document (ICR No. 1699.02) may be obtained from Sandy Farmer by mail at OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington, DC 20460, by e-mail at farmer.sandy@epamail.epa.gov, or by calling (202) 260–2740. A copy may also be downloaded off the Internet at http://www.epa.gov.icr. The information requirements are not effective until OMB approves them.

The information requirements established for this action, and identified in the Information Collection Request (ICR) supporting today's final rulemaking, are largely a self-implementing process. This process will ensure that: (i) Handlers of lamp wastes are held accountable to the universal waste requirements; and (ii) state inspectors can verify compliance when needed. For example, the universal waste standards require LQHUWs and SQHUWs to demonstrate the length of time that the lamp waste has been accumulated from the date it was received or became a waste. The standards also require LQHUWs and destination sites to keep records of all shipments received and sent. Further, the standards require waste handlers to notify EPA when needed (e.g., notification of illegal shipment).

EPA will use the collected information to ensure that lamp waste is being managed in a protective manner. These data aid the Agency in tracking lamp waste shipments and identifying improper management practices. In addition, information kept in facility records helps handlers and destination sites to ensure that they and other facilities are managing lamp wastes properly. Section 3007(b) of RCRA and 40 CFR part 2, subpart B, which define EPA's general policy on the public disclosure of information, contain provisions for confidentiality. However, no questions of a sensitive nature are included in any of the information collection requirements associated with today's action.

EPA has carefully considered the burden imposed upon the regulated community by the regulations. EPA is confident that those activities required of respondents are necessary and, to the extent possible, has attempted to minimize the burden imposed. EPA believes strongly that if the minimum requirements specified under the regulations are not met, neither the facilities nor EPA can ensure that hazardous waste lamps are being managed in a manner protective of human health and the environment.

The aggregate burden to respondents over the three-year period covered by this ICR is estimated at 385,461 hours, with a cost of approximately $15,247,245. The aggregate burden to the Agency is estimated at 5,583 hours, with a cost of $320,910. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose, or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15.

I. Executive Order 13084

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that

significantly or uniquely affect their communities."

EPA has determined that the requirements of Executive Order 13084 do not apply to today's final rule because the rule does not significantly or uniquely affect Indian tribal governments or communities. Furthermore, the rule does not impose any enforceable duties on these entities, and is not likely to impose substantial direct compliance costs on tribal governments and their communities.

J. Executive Order 12875

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

Today's rule does not create a mandate on State, local, or tribal governments. The rule does not impose any enforceable duties on these entities. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

VIII. Submission to Congress and General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A "major rule" cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective six months from the date of publication.

List of Subjects

40 CFR Part 260

Administrative practice and procedure, Confidential business information, Hazardous materials, Recycling, Reporting and recordkeeping, Waste treatment or disposal.

40 CFR Parts 261

Hazardous materials, Recycling, Waste treatment and disposal.

40 CFR Parts 264 and 265

Hazardous materials, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Waste treatment and disposal.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 270

Hazardous materials, Packaging and containers, Reporting and recordkeeping requirements, Waste treatment and disposal.

40 CFR Part 273

Environmental protection, Hazardous materials, Packaging and containers.

Dated: June 28, 1999.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations, parts 260 261, 264, 265, 268, 270 and 273, are amended as follows:

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921–6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

Subpart B—Definitions

2. Section 260.10 is amended by adding in alphabetical order the definition of "Lamp" and by revising the definition of "Universal Waste" to read as follows:

§ 260.10 Definitions.

* * * * *

Lamp, also referred to as "universal waste lamp", is defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

* * * * *

Universal Waste means any of the following hazardous wastes that are managed under the universal waste requirements of part § 273 of this chapter:

(1) Batteries as described in § 273.2 of this chapter;

(2) Pesticides as described in § 273.3 of this chapter;

(3) Thermostats as described in § 273.4 of this chapter; and

(4) Lamps as described in § 273.5 of this chapter.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

Subpart A—General

4. Section 261.9 is amended by revising paragraphs (b) and (c), and adding paragraph (d) to read as follows:

§ 261.9 Requirements for universal waste.

* * * * *

(b) Pesticides as described in § 273.3 of this chapter;

(c) Thermostats as described in § 273.4 of this chapter; and

(d) Lamps as described in § 273.5 of this chapter.

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

5. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

Subpart A—General

6. Section 264.1 is amended by revising paragraphs (g)(11)(ii) and (g)(11)(iii) and adding a new paragraph (g)(11)(iv) to read as follows:

§ 264.1 Purpose, scope, and applicability.

* * * * *

(g) * * *

(11) * * *

(ii) Pesticides as described in § 273.3 of this chapter;
(iii) Thermostats as described in § 273.4 of this chapter; and
(iv) Lamps as described in § 273.5 of this chapter.
* * * * *

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES

7. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6906, 6912, 6922, 6923, 6924, 6925, 6935, 6936, and 6937.

Subpart A—General

8. Section 265.1 is amended by revising paragraphs (c)(14)(ii) and (c)(14)(iii) and adding a new paragraph (c)(14)(iv) to read as follows:

§ 265.1 Purpose, scope and applicability.
* * * * *
(c) * * *
(14) * * *
(ii) Pesticides as described in § 273.3 of this chapter;
(iii) Thermostats as described in § 273.4 of this chapter; and
(iv) Lamps as described in § 273.5 of this chapter.
* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

9. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

10. Section 268.1 is amended by revising paragraphs (f)(2) and (f)(3) and adding a new paragraph (f)(4) to read as follows:

§ 268.1 Purpose, scope, and applicability.
* * * * *
(f) * * *
(2) Pesticides as described in § 273.3 of this chapter;
(3) Thermostats as described in § 273.4 of this chapter; and
(4) Lamps as described in 40 CFR 273.5.
* * * * *

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

11. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

Subpart A—General Information

12. Section 270.1 is amended by revising paragraphs (c)(2)(viii)(B) and (c)(2)(viii)(C) and adding a new paragraph (c)(2)(viii)(D) to read as follows:

§ 270.1 Purpose and scope of these regulations.
* * * * *
(c) * * *
(2) * * *
(viii) * * *
(B) Pesticides as described in § 273.3 of this chapter;
(C) Thermostats as described in § 273.4 of this chapter; and
(D) Lamps as described in § 273.5 of this chapter.
* * * * *

PART 273—STANDARDS FOR UNIVERSAL WASTE MANAGEMENT

13. The authority citation for part 273 continues to read as follows:

Authority: 42 U.S.C. 6922, 6923, 6924, 6925, 6930, and 6937.

Subpart A—General

14. Section 273.1 is amended by revising paragraphs (a)(2) and (a)(3) and adding a new paragraph (a)(4) to read as follows:

§ 273.1 Scope.
(a) * * *
(2) Pesticides as described in § 273.3;
(3) Thermostats as described in § 273.4; and
(4) Lamps as described in § 273.5.
* * * * *

15. Section 273.2 is amended by revising paragraphs (a)(1), (b)(2), and (b)(3) to read as follows:

§ 273.2 Applicability—batteries.
(a) * * *
(1) The requirements of this part apply to persons managing batteries, as described in § 273.9, except those listed in paragraph (b) of this section.
* * * * *
(b) * * *
(2) Batteries, as described in § 273.9, that are not yet wastes under part 261 of this chapter, including those that do not meet the criteria for waste generation in paragraph (c) of this section.
(3) Batteries, as described in § 273.9, that are not hazardous waste. A battery is a hazardous waste if it exhibits one or more of the characteristics identified in part 261, subpart C of this chapter.
* * * * *

16. Section 273.3 is amended by revising paragraph (a) introductory text to read as follows:

§ 273.3 Applicability—pesticides.
(a) *Pesticides covered under this part 273.* The requirements of this part apply to persons managing pesticides, as described in § 273.9, meeting the following conditions, except those listed in paragraph (b) of this section:
* * * * *

17. Section 273.4 is amended by revising paragraph (a) to read as follows:

§ 273.4 Applicability—mercury thermostats.
(a) *Thermostats covered under this part 273.* The requirements of this part apply to persons managing thermostats, as described in § 273.9, except those listed in paragraph (b) of this section.
* * * * *

18. Section 273.5 is revised to read as follows:

§ 273.5 Applicability—Lamps.
(a) *Lamps covered under this part 273.* The requirements of this part apply to persons managing lamps as described in § 273.9, except those listed in paragraph (b) of this section.
(b) *Lamps not covered under this part 273.* The requirements of this part do not apply to persons managing the following lamps:
(1) Lamps that are not yet wastes under part 261 of this chapter as provided in paragraph (c) of this section.
(2) Lamps that are not hazardous waste. A lamp is a hazardous waste if it exhibits one or more of the characteristics identified in part 261, subpart C of this chapter.
(c) *Generation of waste lamps.* (1) A used lamp becomes a waste on the date it is discarded.
(2) An unused lamp becomes a waste on the date the handler decides to discard it.

§ 273.6 [Redesignated as § 273.9]

§§ 273.6 and 273.7 [Reserved]

19. Section 273.6 is redesignated as § 273.9 and §§ 273.6 and 273.7 are added and reserved.

20. Section 273.8 is added to read as follows:

§ 273.8 Applicability—household and conditionally exempt small quantity generator waste.
(a) Persons managing the wastes listed below may, at their option, manage them under the requirements of this part:
(1) Household wastes that are exempt under § 261.4(b)(1) of this chapter and

are also of the same type as the universal wastes defined at § 273.9; and/or

(2) Conditionally exempt small quantity generator wastes that are exempt under § 261.5 of this chapter and are also of the same type as the universal wastes defined at § 273.9.

(b) Persons who commingle the wastes described in paragraphs (a)(1) and (a)(2) of this section together with universal waste regulated under this part must manage the commingled waste under the requirements of this part.

21. Newly designated § 273.9 is amended by adding, in alphabetical order, the definition of "Lamp" and revising the definitions of "Large Quantity Handler of Universal Waste," "Small Quantity Handler of Universal Waste" and "Universal Waste" to read as follows:

§ 273.9 Definitions.

* * * * *

Lamp, also referred to as "universal waste lamp" is defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

* * * * *

Large Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, thermostats, or lamps, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 5,000 kilograms or more total of universal waste is accumulated.

* * * * *

Small Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who does not accumulate 5,000 kilograms or more total of universal waste (batteries, pesticides, thermostats, or lamps, calculated collectively) at any time.

* * * * *

Universal Waste means any of the following hazardous waste that are subject to the universal waste requirements of this part 273:

(1) Batteries as described in § 273.2

(2) Pesticides as described in § 273.3

(3) Thermostats as described in § 273.4; and

(4) Lamps as described in § 273.5.

* * * * *

Subpart B—Standards for Small Quantity Handlers of Universal Waste

22. Section 273.10 is revised to read as follows:

§ 273.10 Applicability.

This subpart applies to small quantity handlers of universal waste (as defined in 40 CFR 273.9).

23. Section 273.13 is amended by adding a new paragraph (d) to read as follows:

§ 273.13 Waste Management.

* * * * *

(d) *Lamps.* A small quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(1) A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

(2) A small quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

24. Section 273.14 is amended by adding a new paragraph (e) to read as follows:

§ 273.14 Labeling/marking.

* * * * *

(e) Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)."

Subpart C—Standards for Large Quantity Handlers of Universal Waste

25. Section 273.30 is revised to read as follows:

§ 273.30 Applicability.

This subpart applies to large quantity handlers of universal waste (as defined in § 273.9).

26. Section 273.32 is amended by revising paragraphs (b)(4) and (b)(5) as follows:

§ 273.32 Notification.

* * * * *

(b) * * *

(4) A list of all the types of universal waste managed by the handler (e.g., batteries, pesticides, thermostats, lamps);

(5) A statement indicating that the handler is accumulating more than 5,000 kg of universal waste at one time and the types of universal waste (e.g., batteries, pesticides, thermostats, and lamps) the handler is accumulating above this quantity.

27. Section 273.33 is amended by adding a new paragraph (d) to read as follows:

§ 273.33 Management.

* * * * *

(d) *Lamps.* A large quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(1) A large quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

(2) A large quantity handler of universal waste must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment. Containers must be closed, structurally sound, compatible with the contents of the lamps and must lack evidence of leakage, spillage or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.

28. Section 273.34 is amended by adding a new paragraph (e) to read as follows:

§ 273.34 Labeling/marking.

* * * * *

(e) Each lamp or a container or package in which such lamps are

contained must be labeled or marked clearly with any one of the following phrases: "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)."

Subpart D—Standards for Universal Waste Transporters

29. Section 273.50 is revised to read as follows:

§ 273.50 Applicability.

This subpart applies to universal waste transporters (as defined in § 273.9).

Subpart E—Standards for Destination Facilities

30. Section 273.60 is amended by revising paragraph (a) to read as follows:

§ 273.60 Applicability.

(a) The owner or operator of a destination facility (as defined in § 273.9) is subject to all applicable requirements of parts 264, 265, 266, 268, 270, and 124 of this chapter, and the notification requirement under section 3010 of RCRA.

* * * * *

Subpart G—Petitions to Include Other Wastes Under 40 CFR Part 273

31. Section 273.81 is amended by revising paragraph (a) to read as follows:

§ 273.81 Factors for petitions to include other wastes under this part 273.

(a) The waste or category of waste, as generated by a wide variety of generators, is listed in subpart D of part 261 of this chapter, or (if not listed) a proportion of the waste stream exhibits one or more characteristics of hazardous waste identified in subpart C of part 261 of this chapter. (When a characteristic waste is added to the universal waste regulations of this part 273 by using a generic name to identify the waste category (e.g., batteries), the definition of universal waste in § 260.10 of this chapter and § 273.9 will be amended to include only the hazardous waste portion of the waste category (e.g., hazardous waste batteries).) Thus, only the portion of the waste stream that does exhibit one or more characteristics (i.e., is hazardous waste) is subject to the universal waste regulations of this part 273;

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