TRANSPORTATION AND DISPOSAL OF ASBESTOS-CONTAINING WASTE

by R. Kent Anderson

To start off this article I would like to briefly summarize some of the federal regulatory programs that impact on the disposal of asbestos-containing wastes and how recent to soon to be proposed changes will impact on current practices.

The National Emission Standards for Hazardous Air Pollutants, with the acronym of NESHAPs, which is administered under EPA, has asbestos standards that contain numerous requirements that impact on the transportation and disposal of asbestos. These include for example, advanced reporting of planned asbestos removal operations and notification of the intended disposal site, wetting and bagging of waste, labeling waste containers, and landfill cover and access standards. Revisions to the NESHAPs will be split into two phases. The first phase revisions will be proposed later this year and will require, among other things, a manifest-type waste tracking system.

The Occupational Safety and Health Administration, known as OSHA, has regulations that are established to protect workers handling asbestos and include requirements for respiratory protection and other safety equipment and work practices such as bagging and labeling of all asbestos-containing waste.

The Toxic Substances Control Act (TSCA) under EPA administers separate regulations to handle the problem of asbestos construction materials in schools. These regulations require that schools be inspected for asbestos, that the local community be notified of its presence, and that an abatement plan be developed. In addition, the Asbestos Hazard Emergency Response Act, known as AHERA, which was passed in October 1986, required EPA to develop standards that will be protective of human health and the environment for the transportation and disposal of asbestos-containing wastes originating from the nation's schools. The planned revisions to the NESHAPs will partially meet this requirement. A second planned revision of the NESHAPs rule in mid 1989 should complete this requirement. However, AHERA, as enacted by Congress, stated that if the more protective transportation and disposal standards were not finalized by October 1987, the transportation and disposal guidance contained in EPA's "Asbestos Waste Management Guidance" must be adhered to for all wastes removed from the nation's schools. This provision of AHERA means that the Guidance has the effect of law and that words in the Guidance such as "suggested" or "recommended" must be read as "required" for wastes originating from schools. This has resulted in a double set of Federal standards for transportation and disposal of asbestos, depending upon where the waste originated. Revising the NESHAP will result in uniformity of the regulations. This guidance document is available from the Office of Solid Waste at 1-800-424-9346. Once again, in reading the guidance, remember that Congress stated that the recommendations for transport and disposal must be adhered to. In other words, recommendations became mandatory requirements.

The Resource Conservation and Recovery Act (RCRA), regulates the disposal of all solid waste under one of two sets of regulations, either as hazardous wastes or as non-hazardous wastes. According to the Federal RCRA standards, asbestos is regulated as a non-hazardous waste. However, individual states have the power to regulate asbestos as a hazardous waste if they so choose. For example, California and New Mexico regulate asbestos as a hazardous waste. Under RCRA the disposal of asbestos is regulated under the "Criteria for Classification of Solid Waste Disposal Facilities and Practices," which contain general disposal standards. Revisions to these standards were proposed on August 30, 1988, and should be finalized within one year. As proposed under 40 CFR Part 258, the Criteria will set forth revised minimum requirements for municipal solid waste landfills (MSWLFs), the primary receptors of asbestos-containing waste. These Criteria, primarily in the form of performance standards, include location restrictions, facility design and operating criteria, closure and post-closure care, financial assurance, ground-water monitoring, and corrective action requirements. The primary goals of this rule are to establish standards that protect human health and the environment, but that also provide flexibility to the states who will remain responsible for direct implementation and enforcement.

For asbestos-containing wastes that do not contain any asbestos from residential households and that are disposed of at industrial solid waste landfills or construction/demolition waste landfills, the existing Criteria under 40 CFR Part 257 will apply. However, the proposed amendments will impose notification requirements on these facilities that will include information on facility type and location, waste type and volume, management practices, and limited exposure data.

Copies of a summary of the August 30 proposed rule can be obtained by phoning (202) 382-4659.

The Department of Transportation (DOT) also has general standards for the transportation of asbestos which it regulates as a hazardous material. DOT standards include a marking requirement for all asbestos containers and a requirement that empty drums that have been used to transport asbestos be properly labeled as containing a residue.

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA's Superfund Program regulates asbestos as a hazardous substance. Reportable quantities have been established to deal with releases or threats of releases of hazardous substances from vessels and from facilities, which

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includes trucks and landfills. The trigger reportable quantity for a release or threat of release of asbestos is one pound.

State and local agencies may have more stringent standards that impact the transportation and disposal of asbestos and should always be contacted prior to any asbestos removal or disposal operation.

Now that we've briefly reviewed the regulations that impact the transportation and disposal of asbestos-containing waste, the first step to take prior to transporting the waste is to assure that it is properly prepared for transportation. As such, the waste must be wetted and properly containerized prior to removal from an abatement area, which usually means that it must be sealed in leak-proof 6-mil plastic bags. However, large irregular shaped objects such as pipes encased in asbestos can be wrapped and sealed in plastic sheets after being wetted. Many states require double bagging and some require that bagged waste be placed in plastic-lined fiberboard or plastic-lined metal drums. All containers of asbestos-containing waste are required to be labeled with either the EPA or OSHA warning label (49 CFR Parts 171 and 172 Effective 7/1/87). In addition, waste that must be transported must include the DOT marking requirements for a hazardous material. The DOT marking requirement for asbestos-containing waste is:

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Because some disposal facilities require that bagged asbestos wastes be placed in drums, it is important to know the requirements of the intended disposal facility before wastes are loaded for transport.

It is also important when transporting asbestos, and a federal requirement under AHERA for asbestos originating from a school, that the generator of the waste complete a chain-of-custody form, similar to a hazardous waste manifest, to ensure that the waste reaches its intended destination. This form must include the name and address of the waste generator, the waste pickup site, the transporter, and the disposal facility. It must include a description of the waste and the number of containers or estimated quantity of waste. This form is to be signed by each party and a copy retained as they turn responsibility for the waste over to the next party. The use of such a procedure can reduce the potential liability on the part of the generator by assuring that the waste actually reaches the proper disposal facility since under the current NESHAP regulations, the waste generator, and not the disposal site operator, is solely responsible for its proper disposal. This however will be changed in the first of the planned NESHAPs revisions. The first NESHAPs revision will also require use of the chain-of-custody form and will also require that each container have a label that identifies the removal contractor and facility from which the waste originated.

A truck used for waste transport should have a completely enclosed body which should be completely lined with polyethylene sheeting. Many states require a minimum of two layers of sheeting to prevent contamination of the inside of the truck body from asbestos residue adhering to the outside of asbestos containers. After the vehicle is properly prepared, asbestos containers should be carefully loaded by hand to prevent the breaking of bags or containers. Any asbestos that is spilled must be immediately cleaned up and rebagged. Under both NESHAP and OSHA, individuals loading the truck must wear protective clothing and respirators. The revised NESHAPs will also require that the truck be placarded.

Large or irregular shaped asbestos-containing items such as boilers or pipes encased in asbestos must be sealed in plastic, should be transported in a totally enclosed vehicle, and properly secured. There have been several cases where bags of asbestos, and pipes encased in asbestos, have fallen off the rear of a truck. There was even an incident in which an asbestos-covered boiler broke loose from a flatbed truck and fell on an interstate highway. Not only are such incidences a violation of the containerization requirements of the NESHAP regulations but they will also most likely trigger the Superfund reporting requirements under CERCLA. When the vehicle is loaded, under AHERA the transporter must sign the chain-of-custody form and provide a copy to the generator.

When selecting a disposal facility, the toughest job is usually in finding one within a reasonable haul distance that will accept asbestos-containing waste. Most landfills will not accept asbestos for one of several reasons which include: potential health concerns of landfill workers, fear that the landfill will receive opposition from their neighbors if it is known that asbestos is handled at the facility, and the inability of landfills to obtain liability insurance if they accept asbestos.

However, there are a number of sources that can assist you in locating a landfill. First, the "Asbestos Waste Management Guidance" that I previously mentioned contains the telephone numbers of all EPA regional asbestos NESHAPs Contacts and the Regional Asbestos Coordinators. The guidance also contains the RCA hotline number, through which you can obtain a listing of state solid waste agencies.

Upon receipt of waste at an approved landfill, the landfill operator must under the NESHAPs regulations inspect the load to verify that the asbestos waste is properly contained in leak-tight containers and properly labeled. He must also confirm under AHERA, that the waste description and quantity specified on the shipping record is correct. The landfill operator must sign the chain-of-custody shipping form, retain one copy for his records, return a copy to the transporter, and send a copy to the generator. Any waste that is not properly contained or labeled or any discrepancies on the shipping form that cannot be reconciled, must be reported to EPA.

For the actual disposal operation, it is required under AHERA for school wastes that a separate area be designated for asbestos. This makes it easier to control access to this portion of the landfill and reduces the number of individuals who could be potentially exposed to any release. In addition, the special ways that asbestos wastes should be handled makes it incompatible with other wastes. For example, containers of asbestos wastes must be covered with soil prior to compaction, whereas the opposite applies to most municipal wastes. Separate disposal areas for asbestos also make it easier to record the property deed, as required under AHERA, the exact location, depth, and quantity of buried asbestos. This record-keeping requirement will also be included in the first NESHAPs revision.

It is recommended that a trench type landfill be used for asbestos disposal. This type of operation if properly conducted will minimize wind exposure during

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posal site. For asbestos wastes originating from schools, AHERA requires a 6-foot-high chain-link fence with barbed wire guard, attended or locked gates, and warning signs every 330 feet around the perimeter of the asbestos portion of the landfill.

As previously mentioned, under AHERA, the landfill owner must maintain documentation of the specific location, quantity of buried asbestos waste, and depth of waste below the surface. When a section of the landfill is closed, this information must be recorded on the land deed along with a notice warning against excavation of the area. As proposed under RCRA, similar notification would be required for all MSWLFs. In addition, RCRA would require groundwater monitoring, inspection records, and closure and post-closure care plans.

Under RCRA, the proposed post-closure care period for a MSWLF is divided into two phases. Phase I is for a minimum of 30 years during which time the owner or operator must conduct routine maintenance of the final cover, continue any leachate collection, and maintain and operate ground-water and landfill gas monitoring. The second phase of post-closure care would require less intensive care. The State would determine the duration of this phase and would establish the sampling and maintenance requirements.

As I mentioned in the early portion of my article when I discussed various federal regulatory requirements that impact on asbestos disposal, AHERA made the transportation and disposal recommendations contained in the guidance entitled "Asbestos Waste Management Guidance" mandatory for all asbestos waste generated by the nation's schools after October 1987. Because it is difficult for landfill operators to provide different levels of treatment, including separate cells or trenches, for wastes originating from schools as compared to other demolition or renovation projects, you can expect to find that these changes have been implemented by most landfills in how they handle all asbestos-containing waste. In addition, finalization of the proposed Criteria under RCRA, as well as the soon to be proposed changes under the NESHAP, will greatly expand the Federal regulations for landfills and help to make more uniform the transportation and disposal of asbestos-containing waste, regardless of the source of the asbestos.

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The proposed groundwater monitoring standards require, at a minimum, semi-annual monitoring or a limited set of key contaminants. If significant levels of the contaminants are detected, quarterly monitoring would be required for those substances.

Actual costs of the proposed rule will vary significantly depending on the design and operating controls states specify to meet the minimum performance standards in the proposal. EPA estimates, for one possible control scenario, that the proposed rule will result in a median cost per landfill of $43,600 per year. This cost corresponds to an average annual cost of $11 per household or a total annualized cost of $880 million at the national level. EPA determines that for most communities and households these costs are reasonable.

For further information, call the EPA's hazardous waste hotline at 800-424-9346 or 382-3000 in Washington, D. C. ■

EPA Proposes New Standards For Municipal Waste Landfills

The U. S. Environmental Protection Agency took its first major regulatory action to control the disposal of municipal garbage. In this effort, the agency proposed standards to upgrade the condition and help ensure the safety of municipal landfills used to dispose of solid waste.

Under the proposal, states would use the standards to ensure protection of the environment from the operation of the landfills. In addition, landfill operators would be required to set up groundwater-monitoring systems and clean up contamination at operating landfills, as well as close down within five years, landfills located in unstable areas; landfills in some restricted areas would require special controls.

The proposed new standards for both new and existing municipal solid waste landfills also include location restriction, facility-design and operation standards, enclosure, post-closure care for at least 30 years and financial-responsibility requirements. The standards also include requirements for day-to-day management of both new and existing landfills, including waste-handling procedures, daily cover, rodent control, access control, liquids management, explosive-gas control, control of open burning, run-on/run-off controls and recordkeeping. The proposal specifies a risk-based performance standard for landfill design.

Dr. J. Winston Porter, EPA's Assistant Administrator for Solid Waste and Emergency Response, said "These standards will help states protect the public from the adverse effects of improperly operated landfills and will provide a framework for designing sound new landfills.

"Landfills will continue to play an important role in the future for garbage disposal, in conjunction with other options now available, such as recycling and incineration with energy recovery," Porter said. "However, we continue to encourage cities to explore all available options in addition to landfills to help reduce the environmental impact of garbage disposal. Within the next few weeks, we will announce additional steps to help states address their continuing solid waste management and disposal-capacity crunch."

Once the federal standards are issued in final form, states must adopt and implement a permit or similar program within 18 months to ensure that facilities comply with the standards. In the event a state declines to incorporate the standards in its current solid waste regulatory program, EPA now has the authority to enforce the use of the federal standards.

EPA set general criteria for solid waste landfills in 1979 under the solid waste provisions of the Resource Conservation and Recovery Act (RCRA). At the time, RCRA did not provide authority to set federally enforceable regulations. Amendments to RCRA passed in 1984 required EPA to develop regulations for solid waste landfills to include standards for location, groundwater monitoring and corrective action. However, RCRA envisions state and locally implemented solid waste programs.

Today's proposal applies to an estimated 6,000 municipal solid waste landfills. Over 80 percent of the 160 million tons of solid waste produced each year by this country is landfilled; about 10 percent is incinerated; and another 10 percent is recycled. Municipal solid waste landfills are located throughout the country. They are owned predominantly by local governments (78 percent), with 17 percent owned by private entities, four percent by the federal government and one percent by states. Nearly one-half are relatively small (less than 10 acres), disposing of small amounts of waste, or less than 18 tons a day.

States report that only 15 percent of the landfills have liners, and only five percent have leachate-collection systems. Less than a third have some type of groundwater-monitoring system. At least a quarter of these are reported to be violating one or more state groundwater-protection standards.

EPA today also is proposing reporting requirements for industrial solid waste and construction/demolition-debris facilities to gather information for possible regulation of these facilities at a later date. EPA estimates that more than seven billion tons of industrial solid waste is disposed annually in over 27,000 industrial solid waste facilities. In addition, nearly 2500 landfills receive construction and demolition debris. EPA is seeking information on ownership, location, size, type and amount of waste, among other information.

Under the proposal, landfills near airports, in floodplains, wetlands, fault areas and seismic impact zones must incorporate special controls. The agency also is proposing to close within five years existing landfills in unstable areas prone to landslides and excessive soil settlement.

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