

TOTALLY ENCLOSED TREATMENT FACILITY, REGULATORY CLARIFICATION
OF

February 18, 1983

Mr. Duane W. Marshall
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Dear Duane:

The subject of what is and what is not a Totally Enclosed Treatment Facility has come up a number of times since we discussed the issue in July 1980. In the course of answering these questions, we prepared the enclosed Regulatory Clarification, which we now send to everyone that asks. It treats the subject generally, but I think it answers your questions.

If I can provide any further clarification please let me know.

Sincerely yours,

John P. Lehman
Director
Hazardous & Industrial Waste Division (WH-565)

Enclosure

bcc: Fred Lindsey

TOTALLY ENCLOSED TREATMENT FACILITY

Regulatory Clarification

I. Issue: From questions asked since promulgation of the regulations on May 19, 1980, it is clear that the definition and practical application of the term "totally enclosed treatment facility" require clarification.

II. Discussion: The definition appears in §260.10(a) as follows:

Totally enclosed treatment facility means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

A facility meeting this definition is exempted from the requirement of Parts 264 and 265 (See §§264.1 (g) (5) and 265.1 (c) (9)) and, by extension, the owner or operator of that facility need not notify nor seek a permit for that process. The purpose of this provision is to remove from active regulation those treatment processes which occur in close proximity to the industrial process which generates the waste and which are constructed in such a way that there is little or no potential for escape of pollutants. Such facilities pose negligible risk to human health and the environment.

The part of the definition which has generated the most uncertainty is the meaning of "totally enclosed." The Agency intends that a "totally enclosed" treatment facility be one which is completely contained on all sides and poses little or no potential for escape of waste to the environment even during periods of process upset. The facility must be constructed so that no predictable potential for overflows, spills, gaseous emissions, etc., can result from malfunction of pumps, valves, etc., associated with the totally enclosed treatment or from a malfunction in the industrial process to which it is connected.

Natural calamities or acts of sabotage or war (earthquakes, tornadoes, bombing, etc.) are not considered predictable, however.

As a practical matter, the definition limits "totally enclosed treatment facilities" to pipelines, tanks, and to other chemical, physical, and biological treatment operations which are carried out in tank-like equipment (e.g., stills, distillation columns, or pressure vessels) and which are constructed and operated to prevent discharge of potentially hazardous material to the environment. This requires consideration of the three primary avenues of escape: leakage, spills, and emissions.

To prevent leaking, the tank, pipe, etc., must be made of impermeable materials. The Agency is using the term impermeable in the practical sense to mean no transmission of contained materials in quantities which would be visibly apparent. Further, as with any other treatment process, totally enclosed treatment facilities are subject to natural deterioration (corrosion, etc.) which could ultimately result in leaks. To meet the requirement in the definition that treatment be conducted "...in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment ...," the Agency believes that an owner or operator claiming the exemption generally will have to conduct inspections or other discovery activities to detect deterioration and carry out maintenance activities sufficient to remedy it. A tank or pipe which leaks is not a totally enclosed facilities or the facility is in violation of the regulations.

A totally enclosed facility must be enclosed on all sides. A tank or similar equipment must have a cover which would eliminate gaseous emissions and spills. However, many tanks incorporate vents and relief for either operating or

emergency reasons. Such vents must be designed to prevent overflows of liquids and emissions of harmful gases and aerosols, where such events might occur through normal operation, equipment failure, or process upset. This can often be accomplished by the use of traps, recycle lines, and sorption columns of various designs to prevent spills and gaseous emissions. If effectively protected by such devices, a vented tank would qualify as a totally enclosed treatment facility.

When considering protective devices for tank vents, the question arises as to whether the protective device is itself adequate. The test involves a judgment as to whether the overflow or gaseous emission passing through the vent will be prevented from reaching the environment. For example, an open catchment basin for overflows is not satisfactory if the hazardous constituents in the waste may be emitted to the air. Similarly, it may also not be satisfactory if it is only large enough to hold the tank overflow for a brief period before it also overflows. However, even in this situation, alarm systems could be installed to ensure that the capacity of the catchment basin is not exceeded. Where air emissions from vents or relief valves are concerned, if the waste is non-volatile or the emissions cannot contain gases or aerosols which could be hazardous in the atmosphere, then no protective devices are necessary. An example might be a pressure relief valve on a tank containing non-volatile waste. Where potentially harmful emissions could occur, then positive steps must be taken. For example, the vent could be connected to an incinerator or process kiln. Alternately, a sorption column might be suitable if emission rates are low, the efficiency of the column approaches 100 percent, and alarms or other safeguards are available so that the upset causing the emission will be rectified before the capacity of the column is exceeded. Scrubbers will normally not

be sufficient because of their tendency to malfunction and efficiencies typically do not approach 100 percent.

Tanks sometimes have floating roofs. To be eligible as a totally enclosed facility, such tanks should be constructed so that the roof has a sliding seal on the side which is designed to prevent gaseous emissions and protect against possible overflow.

The part of the definition requiring that totally enclosed treatment facilities be "directly connected to an industrial production process" also generates some uncertainty. As long as the process is integrally connected via pipe to the production process, there is no potential for the waste to be lost. The term "industrial production process" was meant to include only those processes which produce a product, an intermediate, a byproduct, or a material which is used back in the production process. Thus, a totally enclosed treatment operation, integrally connected downstream from a wastewater treatment lagoon would not be eligible for the exemption because the process to which it is connected is not an "industrial production process." Neither would any totally enclosed treatment process at an off-site hazardous waste management facility qualify, unless it were integrally connected via pipeline to the generator's production process. Obviously, a waste transported by truck or rail is not integrally connected to the production process.

Hazardous waste treatment is often conducted in a series of unit operation, each connected by pipe to the other. As long as one end of a treatment train is integrally connected to a production process, and each unit operation is integrally connected to the other, all qualify for the exemption if they meet the requirement of being "totally enclosed." If one unit operation is not "totally enclosed" or is not "integrally connected," then only unit operations upstream from that unit

would qualify for the exemption. The unit and downstream process would require a permit.

The device connecting the totally enclosed treatment facility to the generating process will normally be a pipe. However, some pipes (e.g., sewers) are constructed with manholes, vents, sumps, and other openings. Pipes with such openings may qualify as totally enclosed only if there is no potential for emission or overflow of liquids during periods of process upset, or if equipment (sorption columns, catchment basins, etc.) has been installed to prevent escape of hazardous waste or any potentially hazardous constituent thereof to the environment.

This exemption for totally enclosed treatment facilities applies only to the facility itself. The effluent from that facility may still be regulated. If the waste entering the totally enclosed treatment facility is listed in Subpart D of Part 261, then the effluent from the facility is automatically a hazardous waste and must be treated as such, unless it is "delisted" in accordance with §§260.20 and 260.22. If, on the other hand, the waste entering the totally enclosed treatment facility is hazardous because it meets one of the characteristics subscribed in Subpart C of Part 261, then the effluent waste is a regulated hazardous waste only if the effluent meets one of the characteristics. Since the totally enclosed treatment facility is exempted from the regulatory requirements, it is only the effluents from such processes which are of interest to the Agency. Thus, whether the waste in a totally enclosed treatment facility must be considered towards the 1000 kg/month small quantity generator limit, depends on whether it is a regulated hazardous waste as it exits the totally enclosed treatment facility.

Finally, it is important to note that if the effluents from a totally enclosed treatment facility are discharged to a surface

water body (lake or stream) or to a publicly owned treatment works or sewer line connected thereto, then these wastes are not subject to the RCRA hazardous waste controls at all but are, instead, subject to the Clean Water Act and regulations promulgated thereunder (See 45 FR 76075).

III. Resolution: In sum, a “totally enclosed facility” must:

- (a) Be completely contained on all sides.
- (b) Pose negligible potential for escape of constituents to the environment except through natural calamities or acts of sabotage or war.
- (c) Be connected directly by pipeline or similar totally enclosed device to an industrial production process which produces a product, byproduct, intermediate, or a material which is used back in the process.