OCEAN INCINERATION OF HAZARDOUS WASTES: REGULATORY ASPECTS

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Camp Dresser & McKee Inc.
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Discussion by

Robert B. Dean
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Additional public confidence could be secured by making a continuous TV scan of the stacks together with scans of key meters. This could show that hazardous waste is not burned except when the flame is under proper control. The TV record should be sealed from access by the captain or crew while the vessel is conducting a burn.

Additional Discussion by

Robert B. Dean
Waste Management and Research
Copenhagen, Denmark

The authors present a well-written description of regulatory aspects of at-sea hazardous waste incineration. Particularly informative is the fact that at-sea incineration of nonhazardous and of hazardous wastes falls under the jurisdiction and cognizance of a number of U.S. and international agencies. Consequently, the need for centralized regulation within the U.S. (such as by EPA and the U.S. Coast Guard as advocated by the authors) appears to be well founded. At least in terms of the environmental assessment of ocean incineration, industry would find dealings with one or two agencies to be superior to regulation by several, whose numbers may include international organizations. Moreover, the setting of emission limits, of at-sea ambient air quality standards, and of marine environmental standards by the EPA would reduce the burden placed upon industry to evaluate the impact of site-specific at-sea incineration projects in the absence of environmental standards.

Discussion by

Paul G. Gorman
and
Douglas E. Fiscus
Midwest Research Institute
Kansas City, Missouri

This is a very good paper, and very useful since it gives a comparison of regulations governing ocean incineration versus those governing land-based incineration. It rightly notes that in addition to EPA regulations, land-based incineration is subject to state and local regulations that may be more restrictive.

One minor correction is that the particulate limit is corrected to 7% O₂, not corrected to 12% CO₂.

The paper states that DE is measured only for designated PORCs. This is correct, but the article goes on to state that this simplifies the S&A efforts and reduces the cost and complexity of the trial burn. It does indeed simplify the analysis but not necessarily the sampling. In an overall sense, it does reduce cost and complexity, but even so, the costs and complexity are still large.

There was no mention of ocean incineration costs versus land-based incineration costs. While such a comparison would undoubtedly be difficult to make, at least some discussion of cost factors would be valuable to the readers to help assess the potential for ocean incineration. Also, an in-depth body of knowledge exists concerning ocean incineration and several EPA reports have been published...
on this subject. These might be listed as references to the paper and would be valuable background information to those readers unfamiliar with ocean incineration.

Discussion by

Donald A. Oberacker
USEPA
Cincinnati, Ohio

I wish to commend the authors of this paper for having done an excellent job in summarizing the national and international regulatory policies and programs with regard to incineration of hazardous industrial liquid wastes on special incineration ships or vessels.

I have witnessed, directed, or assisted in the environmental performance evaluations, and studied and participated in tests of designs for land and ocean incineration facilities numbering approximately 30 or more over the past 10-12 years. Included among these are several existing or planned incineration ships, and personal service as EPA's onboard observer on two sailings of one commercial ship. Although not directly participating in the London Dumping Convention and its meetings, my inputs to its EPA representatives attending such meetings have been expressed and recorded. I personally support continuing exploration and use of incineration ships as an alternative incineration mechanism.

I find no faults with the paper whatsoever as the authors have assembled a factual and complete overview of regulatory issues for the subject at hand. I further believe that the authors' possess an adequate background on these issues because of their work in the field and attendance of various public meetings on EPA permitting discussions.

Discussion by

G. M. Savage
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Richmond, California

The authors present a well-written description of regulatory aspects of at-sea hazardous waste incineration. Particularly informative is the fact that at-sea incineration of non-hazardous and of hazardous wastes falls under the jurisdiction and cognizance of a number of U.S. and international agencies. Consequently, the need for centralized regulation within the U.S. (such as by EPA and the U.S. Coast Guard as advocated by the authors) appears to be well founded. At least in terms of the environmental assessment of ocean incineration, industry would find dealings with one or two agencies to be superior to regulation by several, whose numbers may include international organizations. Moreover, the setting of emission limits, of at-sea ambient air quality standards, and of marine environmental standards by the EPA would reduce the burden placed upon industry to evaluate the impact of site-specific at-sea incineration projects in the absence of environmental standards.

AUTHORS' REPLY

To Robert B. Dean

Mr. Dean's suggestion of requiring a continuous TV scan is a good one for allaying the public's concern and should be made part of the permit requirements. The TV camera would be tied in with the incinerator burners in such a way that burns can only take place while the TV camera is in operation.

In regard to data recording, I believe a better method than the TV camera is an on-line real-time process computer which could monitor, alarm, control and record. It would also have a protected memory so that data could not be tampered with.

In answer to Mr. Dean's additional comments regarding the regulatory issues, EPA has made a commitment to issue specific regulations dealing with ocean incineration by 1985. It is hopeful that these will clarify U.S. requirements and streamline the permitting procedure.

To Paul S. Gorman and Douglas E. Fiscus

Messrs. Gorman and Fiscus's comments and correction are well taken. Since the paper dealt primarily with regulatory issues, technical references were minimized, but a good source is a recent paper by Desmond H. Bond, "At-Sea Incineration of Hazardous Wastes," Environmental Science Technology Vol. 18, No. 5, 1984.

To Donald A. Oberacker

Although a cost comparison between land-based and ocean incineration is of general interest, the real issue in many locations is the availability of a permitted hazardous waste disposal facility within reasonable transportation distance. Probably the primary market area for ocean incineration are sources located within 300 and 500 miles from deep water ports. It was thought, although now somewhat in doubt, that it would be considerably easier obtaining a permit for burning hazardous wastes at sea than in the densely populated areas found along our coast line. We appreciate the complimentary remarks submitted by Mr. Oberacker who himself serves as a valuable source of information on this subject.