

2. Garbage in Boilers.

A related issue is the burning of garbage in boilers intended for residential or other heating. This is among the more offensive types of pollution in terms both of particulate emissions that settle out to cause local nuisance and in terms of odors. The City of Chicago banned such burning in 1970 (R. 74-75), and it has found there are adequate scavenger services to assure collection of the refuse (R. 143). The Environmental Protection Act specifically outlaws the burning of refuse in boilers or other vessels not meeting incinerator standards, and we repeat that prohibition in the regulations in order to call attention to it. The Agency asks that we phrase this provision so as to require an incinerator permit. While we agree that such permits should be required, we think this requirement is not properly a part of the open burning regulations but should be adopted in connection with the pending permit and emission regulations for stationary sources (##R 70-15, R 71-4, R 71-8, R 71-18).

3. Leaves and Other Landscape Refuse: "Backyard Incineration."

There has been considerable confusion over the status of leaf-burning under the new statute. Today's regulation makes it clear that leaves and other landscape refuse may be burned on the premises only outside municipalities and a one mile buffer zone beyond towns of 1000 or more people. In populated areas leaf burning is a nuisance. The City of Chicago has recently banned leaf burning, and it reports a significant reduction in complaints as a result (R. 131, 132). We have been urged by numerous witnesses to ban leaf burning.

Dr. George Arnold, on behalf of the Madison County Sanitation and Pollution Committee, argued that leaf burning creates a hazard of fire and of traffic accidents, contributes to the violation of particulate air quality standards, reduces visibility, endangers health, and destroys valuable organic matter (R. 64-67). Several witnesses discussed from personal experience the adverse health effects of leaf burning, especially on persons with respiratory problems (R. 214-32). An allergy specialist testified as to the serious health effects of burning leaves, especially those contaminated with pesticides, upon people with allergies or respiratory diseases (R. 184-91). There was also much evidence as to alternative methods of leaf disposal, including municipal incineration and sanitary landfill (R. 135) as well as mulching and composting to make use of the organic material (R. 67-68, 100-02, 228-30). Cost studies have concluded that the cost of leaf collection is moderate (\$2.58 per family per year in Detroit in 1967, R. 68), and that the cost of such collection is offset more than three to one by the benefits of reducing pollution, even without considering either health effects or the possible benefits of mulching (Ex. 11).

Thus we have concluded that there is no excuse for leaf burning in municipalities. At the Agency's request, however, we have allowed a grace period until the middle of 1972 for people without access to a refuse collection service.

At the other end of the spectrum we are persuaded that the costs of alternative disposal methods are likely to be significantly higher because of low population density and that, in contrast to the overwhelming nuisance created even in rural areas by salvage or garbage burning, the burning of relatively small quantities of leaves, weeds, and other landscape refuse or paper and the like, at irregular intervals on the premises on which they are generated, will cause relatively little harm (R. 105-06; 168-76). We limit this exception to noncommercial and farm refuse and specifically forbid the burning of garbage. We think industrial and commercial concerns, other than farms, which are relatively remote, ought to bear the cost of providing for more acceptable means of disposal. In the case of farms we allow burning, but only if no economic alternative is available.

It is therefore desirable in this case, as authorized by section 27 of the Act, to make different provisions for different parts of the State in terms of population density. It is obviously impossible to draw a scientific line to separate with logical precision those cases in which it is and is not acceptable to burn landscape refuse; one is reminded of the necessity for choosing a somewhat arbitrary voting age. We believe the distinction drawn is an appropriate one that will be easy to administer and to understand.

A word of caution is in order as to the disposition of leaves. We have some reservations about the spreading practice of placing leaves in plastic bags for collection. Plastic bags are relatively nondegradable and may interfere with normal decomposition of the leaves in a sanitary landfill. Moreover, the gaseous products of incineration of plastic bags may not be desirable additions to the air (R. 135, 139). We are not today outlawing the use of plastic for this purpose, since the issue is not before us, but we wish to warn people to take care that in avoiding one environmental problem they do not create another.

4. Fighting Fire with Fire.

The exception permitting fires to stop the spread of other fires requires little comment. It is plain that in such cases open burning can reduce fire losses and air pollution too.

The provision allowing permits for open burning to instruct in firefighting techniques is similar. It is clear that experience with actual fires is indispensable in such instruction, and that such instruction is of enormous value. We have required permits for such

activity in order to ensure that it is not done unnecessarily or in such a place or way as to cause unnecessary pollution. We think the permit requirement will not cause administrative hardship, since a permit can be granted to cover an entire year's training program rather than for each fire (R. 24-25, 40-53, 192-98). We have broadened this provision to allow for testing of firefighting equipment and for fire-control research, for similar reasons.

5. Campfires, Barbecues, and Fireplaces.

We have included an exception for small recreational fires in the belief that we have not yet reached the point where the pleasure given by such fires is outweighed by the little harm they cause. Too many enjoyable things are already illegal, immoral, or fattening; we will not deprive people of the joys of campfires and fireplaces until we are shown it is necessary to do so. We add that garbage is not to be burned in such cases; that local laws must be complied with; that such activities may be stopped if they in fact cause pollution; and that this exception is not to be abused by calling a burning refuse heap a bonfire or by roasting wieners over a pile of leaves.

6. Gas Flares.

Oil refining operations must provide safety vents for releasing explosive gases in the event of increased pressure, and burning of such gases is necessary to avoid the danger of explosion. The flares are kept burning at all times to provide a pilot for igniting emergency releases and to prevent explosive conditions in the pipes. By and large the combustion products are carbon dioxide and water, although some sulfur dioxide results from the burning of hydrogen sulfide during upset conditions. We are convinced on this record that, so long as smokeless devices are employed, as the industry testified they should be, the hazards of explosion amply justify allowing refinery flares. We agree moreover that the relatively small amounts of sulfur dioxide emitted are far preferable to comparable amounts of hydrogen sulfide. (R. 200-09).

Flares are also commonly used to burn small quantities of natural gas produced at oil wells in Illinois. Regulations of the state Department of Mines and Minerals forbid unnecessary waste of this gas, and it is utilized wherever economically feasible. Often, however, there are no nearby buildings to heat with this gas, and the quantities are so small as to make the cost of compressing and distributing it prohibitive. For safety reasons the Department of Mines and Minerals requires this waste gas to be burned. The combustion products are carbon dioxide and water, and we agree no significant pollution is caused. We have exempted such flares, and their counterparts in other industries such as coke-oven and blast-furnace gases, from the open-burning restrictions (R. 75-100).

No permit is required for safety flares because of the enormous number of flares and the consequent administrative burden.

7. Prairie Fires.

After the first hearings we added a provision allowing permits for controlled burning of prairies in order to maintain them in natural condition for historical and botanical purposes. There are few such areas; they are small and remote; burning is not often required. (R. 125-56, 210-13).

8. Trees.

Dutch elm disease is well known to most people these days; an accepted method of retarding its spread has been the prompt cutting and burning of infected trees. We have no adequate assurance that other methods of disposal safely destroy the infecting organism. One witness testified that a foot of landfill cover would suffice, but the bulk of diseased trees is enormous, and a foot is a lot of cover. The City of Chicago has commendably purchased a chipping machine at a cost of over \$60,000 that enables diseased trees to be chopped up and fed to a controlled incinerator, but we cannot say that this solution is within the financial range of all municipalities on this record. On the other side of the coin, we do not believe the burning of wood to be among the more obnoxious forms of open burning. In short, we think the urgency of combatting plant diseases justifies a permit system allowing the burning of infected vegetation under conditions that will minimize pollution (R. 129, 136-38, 164-65, 177-83).

We also agree that permits should be allowed in cases in which it is not feasible to remove the felled vegetation from its site without destroying a substantial segment of forest (R. 154, 165-66).

We have received, and almost always denied, a great many requests for variances to permit the open burning of non-diseased trees. The evidence is persuasive that alternative disposal methods are simply not practicable in most cases (June 3, pp. 51-53). Consequently, after the most recent hearings, we omitted the limitation to diseased trees and inserted a provision authorizing permits for burning any trees outside of restricted areas upon a showing of need. However, the evidence shows that a device called the air curtain destructor, available for only a very few thousand dollars and portable, can substantially reduce emissions from such burning by blowing air over the top of the fire (June 3, pp. 54-61; June 4, pp. 34-35, 46-67). Cost of the unit, including its own motor, is from \$6700 to \$11,300, the cost of a permanent pit estimated at \$2500-\$3500, and operating costs estimated at 15-20¢ per ton (June 4, pp. 57-65). The Cook County Forest Preserve District is installing such a destructor (June 3, pp. 108-09, 113), and they are required in St. Louis County, Missouri (June 4, p. 33). We have allowed several months for the acquisition of such devices, required their use after July 1, 1972, and allowed their use within restricted areas subject to a permit requirement.

9. Explosive Wastes.

We have on several occasions received variance requests regarding open burning of explosive wastes, and we have granted them upon a showing of necessity. We shall continue to do so. However, these cases sometimes involve rather significant quantities of wastes, and the technology for alternative means of disposal is rapidly advancing. These cases are sufficiently important and sufficiently infrequent that we shall continue to deal with them individually on a variance basis.

10. Oil Sludges.

The evidence tells us that on relatively rare occasions safety and state regulations require the burning of oil sludges accumulated in oil production (June 4, pp. 89-97). We have provided for such burning by permit and, in emergencies, without a permit but with a reporting requirement.

11. Local Enforcement.

We have added a provision making clear once more the statutory obligation of local governments to enforce the open-burning regulations. The Agency cannot do it alone. If we are to have a clean environment we must have the cooperation of governments at all levels.

The following changes were made in response to comments received after publication of the proposed final draft: A definition of trade waste was added; the reference to § 9 (c) of the Act was made explicit in Rule 403 to conform to the statute; the exemptions for agricultural and domicile waste have been separated because of the different conditions applicable to each; a grace period has been added for domicile wastes where there is presently no pickup service; the requirement has been added that agricultural waste can be burned only when there is no economically reasonable alternative; domestic fireplaces have been more clearly exempted; the procedural requirements for permits have been reorganized and rewritten to be more specific.

ORDER

- (1) Section 1 of Chapter 2 of Rules and Regulations Governing the Control of Air Pollution, adopted by the Illinois Air Pollution Control Board March 26, 1965, is hereby repealed, except that cases arising before the effective date of this regulation shall be governed by the provisions otherwise repealed.
- (2) A new Part is hereby added to the Rules and Regulations of the Illinois Pollution Control Board as follows:

ILLINOIS POLLUTION CONTROL BOARD
RULES AND REGULATIONS

Ch. 3: AIR POLLUTION
PART IV: OPEN BURNING

401 Definitions.

(a) Agricultural Wastes: Any refuse, except garbage and dead animals, generated on a farm or ranch by crop and livestock production practices, including such items as bags, cartons, dry bedding, structural materials, and landscape wastes.

(b) Domicile Waste: Any refuse generated on single-family domiciliary property as a result of domiciliary activities. The term includes landscape waste, but excludes garbage and trade waste.

(c) Garbage: Refuse resulting from the handling, processing preparation, cooling, and consumption of food or food products.

(d) Landscape Waste: Any vegetable or plant refuse, except garbage. The term includes trees, tree trimmings, branches, stumps, brush, weeds, leaves, grass, shrubbery, yard trimmings, and crop residues.

(e) Open Burning: The combustion of any matter in such a way that the products of the combustion are emitted to the open air without originating in or passing through equipment for which a permit could be issued under Section 9(b) of the Act.

(f) Refuse: Any discarded matter; or any matter which is to be reduced in volume, or otherwise changed in chemical or physical properties, in order to facilitate its discard, removal or disposal.

(g) Restricted Areas: The area within the boundaries of any "municipality" as defined in the Illinois Municipal Code, plus a zone extending one mile beyond the boundaries of any such municipality having a population of 1,000 or more according to the latest federal census.

(h) Trade Waste: Any refuse resulting from the prosecution of any trade, business, industry, commercial venture, utility or service activity, and any government or institutional activity, whether or not for profit. The term includes landscape waste but excludes agricultural waste.

402 Prohibitions.

(a) No person shall cause or allow open burning, except as provided in Rules 403, 404, and 405 of this Part.

(b) No person shall cause or allow the burning of any refuse in any chamber or apparatus, unless such chamber or apparatus is designed for the purpose of disposing of the class of refuse being burned.

403 Exemptions. The following activities are not in violation of Section 9(c) of the Environmental Protection Act or of this Part unless they cause air pollution as defined in the Act. Nothing in this Rule shall exempt such activities from applicable local restrictions.

(a) The open burning of agricultural waste, but only:

(1) on the premises on which such waste is generated;
and

(2) in areas other than restricted areas; and

(3) when atmospheric conditions will readily dissipate contaminants; and

(4) if such burning does not create a visibility hazard on roadways, railroad tracks, or air fields;

(5) more than 1000 feet from residential or other populated areas; and

(6) when it can be affirmatively demonstrated that no economically reasonable alternative method of disposal is available.

- (b) The open burning of domicile waste, but only:
- (1) on the premises on which such waste is generated;
 - (2) in areas other than restricted areas; and
 - (3) when atmospheric conditions will readily dissipate contaminants; and
 - (4) if such burning does not create a visibility hazard on roadways, railroad tracks, or air fields;
 - (5) notwithstanding subparagraph (2) of this paragraph (b), this exemption shall apply to residents in restricted areas who do not have refuse collection service available to them, but only until July 1, 1972.
- (c) The setting of fires to combat or limit existing fires, when reasonably necessary in the judgment of the responsible government official.
- (d) The burning of fuels for legitimate campfire, recreational, and cooling purposes, or in domestic fireplaces, in areas where such burning is consistent with other laws, provided that no garbage shall be burned in such cases;
- (e) The burning of waste gases, provided that in the case of refineries all such flares shall be equipped with smokeless tips of comparable devices to reduce pollution;
- (f) Small open flames for heating tar, for welding, acetylene torches, highway safety flares, and the like.

404 Permits.

- (a) The Environmental Protection Agency may grant permits for open burning in the following instances:
- (1) For instruction in methods of fire fighting; or for testing of equipment for extinguishing fires, of flares and signals, or of experimental incinerators, or for research in control of fires;
 - (2) For the destruction of vegetation on site under circumstances in which its removal would necessitate significant environmental damage;

(3) For research or management in prairie or forest ecology;

(4) For the destruction of landscape wastes, provided that such burning shall not occur:

(i) in restricted areas, unless burning is conducted with the aid of an air-curtain destructor or comparable device to reduce emissions substantially; or

(ii) within 1000 feet of any residential or other populated area; or

(iii) after July 1, 1972 except with the aid of an air-curtain destructor or comparable device to reduce contaminant emissions substantially.

(5) For the destruction of oil sludges in petroleum production for safety reasons where alternative means including product recovery are impracticable; provided, that when emergency conditions require, such burning may be done without a permit, and a report shall be filed with the Agency within ten days thereafter, indicating the place and time of such burning, the quantities burned, the meteorological conditions, and the reasons why emergency burning was necessary.

(b) An application for a permit shall be in such form and shall contain such information as shall be required in procedures adopted by the Agency. Such application shall contain, as a minimum, data and information sufficient to inform the Agency with respect to: the exact quantities and types of material to be burned; the exact nature and exact quantities of air contaminant emissions which will result; the exact frequency, including dates where appropriate, when such burning will take place; the exact location of the burning site, including a map showing distances to residences, populated areas, roadways, air fields, etc.; the methods or actions which will be taken to reduce the emission of air contaminants; the reasons why alternatives to open burning are not available; and the reasons why such burning is necessary to the public interest.

(c) No permit shall be granted unless the applicant proves to the satisfaction of the Agency that the open burning: is necessary to the public interest; will be conducted in such a time, place and manner as to minimize the emission of air contaminants; and will have no serious detrimental effect upon adjacent properties or the occupants thereof.

(d) The Agency may impose such conditions in the permit as may be necessary to accomplish the purposes of the Act or this Part.

(e) No permit shall be valid for longer than one year. Applications for renewal of a permit shall be submitted to the Agency at least 90 days prior to the expiration of the prior permit, and shall conform to Rule 404 (b). The standards for issuance of renewal permits shall be as set forth in Rule 404 (c).

(f) Violation of any of the conditions of the permit shall be grounds for revocation of the permit by the Agency, as well as for other sanctions provided in the Act.

(g) The Agency may revise any permit granted pursuant to this Rule, or any condition contained in any such permit.

405 Explosive Wastes.

Open burning of wastes creating a hazard of explosion, fire, or other serious harm, unless authorized by other provisions in this Part, shall be permitted only upon application for and grant of a variance as provided by the Act and by Chapter 1 of these Rules and Regulations.

406 Local Enforcement.

It shall be the obligation of local governments, as well as of the Environmental Protection Agency, to enforce by appropriate means the prohibitions in this Part.