# *RCRA Permit Appeal Fact Sheet* **1989**

**FACILITY:** BP Chemicals America, Inc. (BPCA)
Lima, Ohio
OHD 042 157 644
RCRA Appeal No. 89-4

**PETITIONER:** BPCA

**PETITION FILED:** January 17, 1989

**STATUS OF PETITION:** See Permit Appeal Status Report

**ISSUES:** Miscellaneous other issues (burning of hydrogen cyanide vapor; technical issues associated with burning of hydrogen cyanide vapors; incinerator cutoff provisions and other operating requirements; deepwell treatment process; pre-1987 submittals in the permit application record; dilution of restricted waste; classification of reactive wastes; errors in the final permit)

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**Summary of Petition:**

BPCA is seeking review of conditions in the hazardous waste permit issued to its Lima, Ohio incinerator. The majority of contested provisions address the burning of hydrogen cyanide (HCN) vapor, specific cutoff parameters and other requirements for the incinerator, and operations of the deepwell treatment process. In addition, the petitioner contests the classification of waste streams, the Agency's interpretation of the land disposal restrictions (LDRs) with respect to mixing of wastes, and the inclusion of outdated facility submittals in the permit application record.

- **Burning of Hydrogen Cyanide Vapor.** The petitioner contends that permit conditions regulating the burning of HCN vapor as a hazardous waste are unlawful because: (1) HCN vapor is not, by definition, a solid waste and cannot be defined as a hazardous waste; and (2) these vapors are regulated by the Ohio EPA under its Federally approved Clean Air Act (CAA) program. The petitioner claims that allowing this air emission to be regulated by RCRA sets a precedent of intrusions into State CAA programs.

- **Technical Issues Associated with Burning of Hydrogen Cyanide Vapors.** The petitioner contends that the permit imposes technical requirements on handling HCN vapors which are unsound, and believes that the HCN vapor feed should not be restricted by the permit.

- Specifically, BPCA claims that the limits on the vapor pressure supply and the carbon monoxide waste feed will trigger increased use of a less-efficient back-up flare system for burning HCN vapor. This flare system has a destruction efficiency of 95 percent. In contrast, the primary air pollution control devices for the incinerator achieve a 99.99 destruction efficiency, even with waste feed values above the permit limits. Consequently, BPCA contends that these provisions are not only technically unsound, but also fail to promote the protection of human health and the environment.

- The petitioner states that cyanide gas exceeding 1 ppm is protective of human health and the environment, given that the Occupational Safety and Health Administration has set the standard for workplaces at 10 ppm.

- The permit requires BPCA to prepare and submit a written contingency procedure to contain and treat the toxic cyanide gas feed to the thermal oxidizer (i.e., the primary air pollution control device) when permit conditions disallow treatment of the gas stream to the oxidizer (i.e., when the back-up flare system is used). The petitioner contends that the requirement to submit a contingency procedure is erroneous.

■ **Incinerator Cutoff Provisions and Other Operating Requirements.** The petitioner contests numerous incinerator cutoff provisions, including limits on the absolute pressure in the combustion zone and loss of atomization steam. In addition, BPCA challenges the feasibility of continuous monitoring and of calibrating instruments while incinerating hazardous waste.

- The permit requires automatic cutoff of hazardous waste feed to the incinerator if the absolute pressure in the combustion zone exceeds the atmospheric pressure. Because momentary positive pressure could exist in the combustion zone, BPCA argues that the waste feed need not be cut off unless the absolute pressure continuously exceeds the atmospheric pressure for more than ten seconds.

- The permit requires BPCA to cut off hazardous waste feed to the incinerator if atomization steam is lost. The petitioner contends that if atomization steam were lost, the carbon monoxide level would increase as a result of the loss of combustion efficiency. The petitioner also notes that the permit includes separate monitoring requirements for carbon monoxide. Therefore, BPCA contends that the condition regarding loss of atomization steam is not justified, since it does not relate to attainment of the performance standard of the incinerator, and it is redundant to monitoring provisions for carbon monoxide.

- The petitioner contends that continuous monitoring for carbon monoxide and oxygen concentrations, as now required by the permit, has the potential to fail in extended

service. Consequently, the petitioner requests permission to use the standard Orsat gas analysis to verify compliance twice an hour in the event of monitor failure, enabling BPCA to cut off the waste feed manually.

- The petitioner contends that the permit condition requiring calibration of instruments is unsafe and would cause an automatic waste feed cutoff.

- **Deepwell Treatment Process.** The permit requires that deepwell waste be treated through either a mixing process or clarification, followed by filtration. BPCA contends that its deepwell waste treatment system has been designed so that wastes can be mixed, or clarified, or filtered and stored. Consequently, the petitioner argues that the permit provision as written would unnecessarily restrict treatment flexibility by requiring mixing or clarification prior to filtration.

  - In addition, the permit requires shipment of these solid residues to an offsite land disposal facility. BPCA contends that this provision may not be lawful pursuant to 40 CFR Part 268 land disposal restrictions, given the status of the deepwell solids as "derived from" wastes still subject to designation as listed "K" wastes. The petitioner contends that these filtrate streams are intended to be recycled for further treatment as appropriate and will ultimately be disposed of with the other deepwell fluids.

- **Pre-1987 Submittals in the Permit Application Record.** The petitioner argues that process changes completed at the facility in 1988 render invalid pre-1987 submittals to the facility record. BPCA submitted additional materials in 1987 that were intended to supersede its earlier submittals. Consequently, the petitioner contends that failure to delete the pre-1987 submittals creates a confusing and inaccurate record.

- **Dilution of Restricted Wastes.** The permit prohibits dilution of a restricted waste as a substitute for treatment in order to comply with the LDRs. BPCA contends that dilution is allowed when the wastes are commingled to facilitate a combined treatment.

- **Classification of Reactive Wastes.** The petitioner contends that its K011, K013, and K014 wastes do not exhibit a reactive characteristic and, therefore, are not subject to the permit's special provisions for handling reactive wastes.

- **Errors in the Final Permit.** BPCA contends that it had requested a number of changes to the permit, but that these changes were not made. These corrections and modifications address the following conditions:

  - The size of the deepwell wastewater storage and treatment tanks;
  - Standing liquids in containers destined for treatment facilities rather than landfills;
  - Numerous log sheets, diagrams, figures, and exhibits;
  - The "Basic Training Document" and video training tapes;
  - The list of equipment supplied to all operators; and
  - Labeling commercial chemical products, or mixtures of commercial chemical products, as wastes that contain hazardous constituents.

**BEFORE THE ADMINISTRATOR**
**U.S. ENVIRONMENTAL PROTECTION AGENCY**
**WASHINGTON, D.C.**

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| In the Matter of: | ) | |
| BP Chemicals America Inc., Lima, Ohio | ) | RCRA Appeal No. 89-4 |
| RCRA Permit No. OHD 042 157 644 | ) | |

**REMAND ORDER**

Pursuant to Section 124.19 of the Agency's rules, BP Chemicals America Inc. filed a petition for review of a RCRA permit issued by Region V that authorizes hazardous waste management at BP's acrylonitrile manufacturing plant in Lima, Ohio. By order dated August 6, 1990, I granted the petition for review with respect to certain permit conditions that regulate hydrogen cyanide (HCN) vapors at the facility. The parties have briefed the issues upon which review was granted, and the case is now ready for disposition. [1/]

I. Background

BP's HCN vapor is a gaseous emission produced during BP's manufacturing process. Raw material is passed through a reactor unit, a quench unit, an absorber unit, a recovery column, a fractionator column, and a product column, the last of which yields the product acrylonitrile. HCN vapor is produced from the fractionator column and is condensed to the extent

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1/ The August 6, 1990 order denied review on all other issues raised by BP's petition. BP's October 24, 1990 request for oral argument on the HCN issues is denied.

technologically feasible. Condensed HCN is routed to an HCN column for final purification. See BP Brief at 2-3.

Any uncondensable HCN vapor is routed from the fractionator column to thermal oxidizers. Uncondensable HCN at the HCN column is also sent to the thermal oxidizers. If the HCN column is shut down, HCN vapor is sent directly to the thermal oxidizers from the fractionator. All HCN vapor influent to the thermal oxidizers is regulated under Ohio air pollution control laws pursuant to State air permits. BP represents that its thermal oxidizers destroy 99.997% or more of the HCN vapor influent. The oxidizers are also used to burn other waste, including hazardous waste, generated at the facility. See BP Brief at 2-3; B.' RCRA Permit, Part VI.

The RCRA permit issued by Region V authorizes continued hazardous waste management at the facility, including the incineration of hazardous waste in the thermal oxidizers. At issue in this case are permit conditions that regulate BP's handling of the HCN vapors. For example, Permit Conditions VI.D.8.g and VI.D.9a require BP to monitor HCN delivery pressure to the oxidizers and to cut off all waste feed automatically if the HCN vapor supply pressure exceeds a specified threshold. Permit Condition VI.E requires BP to prepare and submit a written contingency plan to contain and treat the HCN vapors when operating conditions are such that the permit prohibits the vapors from being incinerated in the oxidizers. The contingency plan must describe a method for monitoring the HCN vapors in the

vicinity of the oxidizers. Although the permit is not entirely clear in this regard, it could arguably be read to prohibit HCN levels near the oxidizers from exceeding a specified level. [2/]

The August 6, 1990 order granting review directed the parties to brief three issues:

> 1. Whether BP's HCN vapors are "solid waste" as defined in RCRA §1004(27);
>
> 2. If not, whether the RCRA omnibus provision (§3005(c)(3)) may be used to justify RCRA permit conditions that regulate material that is not solid waste; and
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> 3. Whether the permit's regulation of BP's HCN vapors conflicts with the Agency's obligation under RCRA §1006(b)(1) to avoid RCRA regulation that duplicates regulation under the Clean Air Act.

For the reasons set forth below, the Region has failed to articulate an adequate justification for subjecting BP's HCN vapors to the permit terms at issue. The proceeding will be remanded to the Region for further consideration.

## II. Analysis

The Agency's jurisdiction under Subtitle C of RCRA is defined in part by the statutory definition of "solid waste." RCRA §1004(27) defines "solid waste" to include "contained gaseous material" from industrial operations. [3/] The Agency

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[2/] See Permit Condition VI.E ("The procedure must contain details of monitoring method [sic] to be used to ascertain that the concentration of cyanide gas in the atmosphere in the vicinity of the oxidizer shall not exceed 1 ppmv.").

[3/] See 42 U.S.C.A. §6903(27) ("The term 'solid waste' means any garbage, refuse, sludge from a waste treatment plant, water

(continued...)

has interpreted this explicit inclusion of contained gaseous materials as constituting an implicit exclusion of uncontainerized gas. Evidence of this position is reflected in several sources. In the preamble to the 1982 RCRA regulations for hazardous waste incinerators, the Agency noted:

> Fume incinerators which are used to destroy gaseous emissions from various industrial processes, for example, are not subject to regulation under RCRA. In general, the RCRA standards do not apply to fume incinerators since the input is not identifiable as a solid waste, according to the definition set forth in [40 CFR] §261.2.

47 Fed. Reg. 27520, 27530 (June 24, 1982). More recently, the Agency decided against listing certain light ends as hazardous waste despite concerns that appropriate regulation could be evaded by keeping the vapors in a gaseous form, stating:

> [O]ur authority to identify or list a waste as hazardous under RCRA is limited to containerized or condensed gases [i.e., section 1004(27) of RCRA excludes all other gases from the definition of solid wastes and thus cannot be considered hazardous wastes].

54 Fed. Reg. 50968, 50973 (December 11, 1989) (bracketed material in the original; footnote omitted). The RCRA rules provide that

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3/(...continued)
supply treatment plant or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 1324 of [the federal Clean Water Act], or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).").

a container that has held hazardous waste as a compressed gas is "empty," and any hazardous waste therein is not subject to specified RCRA regulations, when the pressure in the container approaches atmospheric. See 40 CFR §261.7(a)(1) & (b)(2).

These authorities show that the Agency views gaseous material to be "solid waste" only when it is containerized. Region V argues that BP's HCN vapor is "contained" by the various process units through which it passes, by associated piping, and by the plant as a whole. The Region's reading of the term "contained," however, cannot be reconciled with the Agency's treatment of fume incinerators. Such incinerators are used to treat vapors that are "contained" in the broad sense of being bound or controlled and not being emitted to the atmosphere, but the Agency considers such vapors to be outside the scope of the "solid waste" definition because they are not containerized in the narrower sense of being in an individual container such that the gas is amenable to shipment.

Region V virtually concedes the difficulty in classifying BP's HCN vapors as solid waste, acknowledging that if BP burned only HCN vapors in its thermal oxidizers, they "might well" be beyond the reach of RCRA regulation. See Region Reply Brief at 3. The Region nevertheless seeks to justify its regulation of the HCN vapors by noting that the thermal oxidizers burn hazardous waste (in addition to the HCN vapors) and are thus regulated units. Although the oxidizers are indisputably regulated units, at least some of the contested permit terms do

not address the thermal oxidizers directly, but instead relate to BP's handling of the HCN vapors apart from their incineration. For example, the requirement that BP prepare a contingency plan for handling the HCN vapors when they cannot be incinerated is regulation of the HCN vapors qua HCN vapors, not as material being treated in a regulated unit.

Region V contends that even if the HCN vapors are not solid (and thus not hazardous) waste, RCRA §3005(c)(3) provides legal authority for the regulation of these vapors. This "omnibus provision" requires the Agency to include permit terms that the Administrator "determines necessary to protect human health and the environment." 42 U.S.C.A. §6925(c)(3). Although the omnibus provision employs rather sweeping language, it does not expand RCRA jurisdiction indefinitely. The statutory context provides guidance on the proper interpretation of its breadth. For example, RCRA §3005(a) requires the Agency to issue rules requiring a RCRA permit for persons owning or operating facilities "for the treatment, storage, or disposal of hazardous waste." RCRA §3005(c)(1) requires permit applicants to demonstrate compliance with the requirements of RCRA §3004(a), which in turn requires the issuance of performance standards "for the treatment, storage, or disposal of hazardous waste." Indeed, Subtitle C as a whole is entitled "Hazardous Waste Management." Where Subtitle C goes beyond the regulation of hazardous waste management, it does so expressly and in well defined contexts, such as the requirement in RCRA §3004(u) that RCRA-permitted

facilities address releases of hazardous constituents (not just hazardous waste) from solid waste management units (not just hazardous waste management units). This statutory context, with its repeated references to solid or hazardous waste management, makes clear that the omnibus provision should not be used as a blank check for unbridled regulation without an adequate nexus to solid or hazardous waste. Of particular importance to the case at hand, the omnibus authority may not be used to override the exclusions (express or implied) from RCRA jurisdiction found in the definition of "solid waste." Otherwise, the exclusions would be rendered virtually meaningless, a result that would not produce a coherent and reasonable reading of the statute.

There are, of course, situations where the proper regulation of hazardous waste management requires permit terms that address materials that are not hazardous waste. For example, a RCRA permit may properly regulate cigarette smoking at a hazardous waste management facility where smoking poses a threat to flammable hazardous waste. On the other hand, the permit could not include restrictions on smoking based exclusively on health risks to the smoker posed by smoking itself because such risks do not have an adequate nexus to hazardous waste management. To take a more pertinent example, the Agency may regulate air emissions associated with hazardous waste management, as well as emissions from equipment that contains or contacts hazardous waste derivatives, even though such emissions might not be solid waste. These emissions are subject to RCRA regulation because

they pose risks that are ultimately tied to hazardous waste management. [4/] Where similar emissions result from product tanks, however, they may not be regulated under RCRA because there is no adequate nexus to hazardous waste. [5/]

In the case at hand, the Region has failed to show that each of the contested permit terms has an adequate nexus to solid or hazardous waste management. The mere fact that the thermal oxidizers used to incinerate the HCN vapors are also used to burn hazardous waste does not, by itself, justify all conceivable regulation of the HCN vapors, particularly in contexts unrelated to incineration (e.g., a requirement to prepare a contingency plan for handling HCN vapors when they are not burned).

Nevertheless, there might be legitimate justifications for some or all of the contested permit terms that have not yet been articulated by the Region or documented in the record. For instance, regulation of HCN vapor incineration might well be justified if the vapors would have an adverse synergistic effect upon hazardous waste treated in the oxidizers. Rather than attempting to define in today's order all situations where an

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[4/] See 40 CFR §§264.1030-264.1065, §§265.1030-265.1064; 55 Fed. Reg. 25454 (June 21, 1990); 52 Fed. Reg. 3748 (February 5, 1987).

[5/] See 52 Fed. Reg. at 3754 (a facility that operates a distillation column for feedstocks is not covered by the RCRA air emission standards because it processes raw material, not hazardous waste); id. at 3761 (issuance of the RCRA air emission standards does not affect the limited exemption in §261.4(c) for hazardous waste generated in process-related equipment, such as product or raw material storage tanks or pipelines, because the risk posed by these units is incidental to the risk posed by the product or raw material); 55 Fed. Reg. at 25467 (same).

adequate nexus to hazardous waste management exists, the better course is to address such determinations on a case-by-case basis. The case is therefore remanded to the Region for further proceedings consistent with this order. On remand, the Region should determine, in consultation with the Agency's Office of General Counsel and Office of Solid Waste, whether regulation of BP's HCN vapors is necessary to protect human health and the environment from threats with an adequate nexus to hazardous waste management. Any permit conditions regarding the HCN vapors included in the permit on remand should be supported by an explanation of why the condition is necessary to address such a threat. The contested permit conditions regarding the HCN vapors and any non-severable conditions (to be determined by the Regional Administrator) shall remain stayed during the remand. No administrative appeal of the remand decision will be required to exhaust administrative remedies under 40 CFR §124.19(f)(1)(iii). [6/]

So ordered.

Dated: 8/21/91

William K. Reilly
Administrator

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[6/] If regulation of BP's HCN vapors is necessary to address a risk with an adequate nexus to BP's hazardous waste management, such regulation would not be duplicative of regulation under BP's state air permits or contravene the Agency's obligation under RCRA §1006(b)(1). Cf. 55 Fed. Reg. at 25468 (RCRA air emission rules are appropriate despite EPA's dual authority to regulate air pollutants under the CAA); 52 Fed. Reg. at 3761 (same).

## CERTIFICATE OF SERVICE

I certify that copies of the foregoing Remand Order in the matter of BP Chemicals America Inc., RCRA Appeal No. 89-4, have been sent to the following in the manner indicated:

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