

ILLINOIS POLLUTION CONTROL BOARD
May 28, 1987

EMERGENCY TECHNICAL SERVICES)
CORP., OF ILLINOIS,)
)
Petitioner,)
)
v.) PCB 87-12
)
ILLINOIS ENVIRONMENTAL PROTECTION)
AGENCY,)
)
Respondent.)

MR. RICHARD O. WOOD, BURDITT, BOWLES & RADZIUS, LTD., APPEARED ON BEHALF OF THE PETITIONER.

MS. BOBELLA GLATZ APPEARED ON BEHALF OF THE RESPONDENT.

OPINION AND ORDER OF THE BOARD (by J. Marlin):

This matter comes before the Board on a Petition for Variance filed by Emergency Technical Services Corporation of Illinois (ETSCI) on January 28, 1987. Pursuant to 35 Ill. Adm. Code 237.103, Explosive Waste, ETSCI is seeking a variance from the prohibition against open burning as set forth by Section 237.102. ETSCI is requesting that the Board grant the variance for a period of five years or until ETSCI has a permitted facility under the Resource Conservation and Recovery Act (RCRA), which ever occurs first. ETSCI filed two exhibits which were inadvertently left off the Petition on January 30, 1987. The Illinois Environmental Agency (Agency) filed its Recommendation on April 20, 1987. By its Order of April 30, 1987, the Board granted the Agency's Motion to File Instantly the Agency Recommendation. In the Recommendation, the Agency recommends that the Board grant the variance subject to various conditions. On May 15, 1987, ETSCI filed a Motion for Leave to File a response to the Agency Recommendation Instantly, The Board hereby grants the motion. In its response, ETSCI states that it has no objection to any of the variance conditions requested by the Agency. In its Petition, ETSCI waived its right to a hearing and no person objected to the Petition. As a result, no hearing was held in this matter.

ETSCI is an Illinois corporation engaged in the disposal of explosive chemicals by way of detonation. ETSCI's offices are located in Schaumburg, Illinois, and it employs two full-time and five part-time employees. All ETSCI employees have valid State blaster's licenses. (Pet., p. 1).

ETSCI has a year to year agreement with the Illinois National Guard (Guard) for use of a small portion of the Guard's 2,500 acre Marseilles Training Site (Site) located in Marseilles, LaSalle County, Illinois. ETSCI utilizes a 100' by 100' area at the Site for its detonation operations. (Pet., p. 2). This detonation area is located about one mile north of the Site's headquarters buildings. The detonation area is also near an area used by the public for dog training and hunting. Entry to the Site is by permit only through Gate 60 which is located about six miles west of the detonation area. (Ag. Rec., p. 2).

ETSCI detonates small quantities of explosive or shock sensitive chemicals at the request of schools, hospitals and small businesses which need to dispose of such chemicals. The types of chemicals commonly detonated by ETSCI include common ethers, picrics, organic peroxides and trinitro compounds. The volume of ether commonly encountered by ETSCI can be as much as one gallon. Other materials range in weight from 5 grams to 500 grams (Pet., p. 2). ETSCI asserts that the quantity of explosive material destroyed during any detonation never exceeds two pounds. (Pet., p. 3).

Typically, ETSCI employees pick up the material to be detonated, package it for safety in transit, and transport the chemicals to the Site. At the Site, the materials are given a small booster charge and are exploded in small volumes over a period of time. Equipment used in this process includes a "Galuanometee [sic], a blasting machine, insulated wire and proper sized blasting caps and prima [sic] cord." ETSCI claims that explosions reach a temperature of 6000 F and 50,000 pounds of pressure. According to ETSCI, the detonation process completely destroys the material without any detrimental environmental impact (Pet., p. 2).

On December 18, 1986, the Board granted ETSCI a 45-day provisional variance concerning the same detonation process at issue here. (PCB 86-217). The provisional variance granted by the Board was subject to conditions of which most have been proposed again by ETSCI. The provisional variance expired on February 1, 1987.

Environmental Impact

ETSCI states, "The process of destroying explosive or shock sensitive chemicals through controlled detonations presents no adverse environmental impact either to existing ambient air quality or to the soil. The resulting by-products from explosives and explosive ethers consist of carbon dioxide, water and small quantities of nitrates." (Pet., p. 2). ETSCI specifically cites a study of its detonation emissions conducted by Hazards Research Corporations in 1983 (Exhibit #1 to the Petition). ETSCI claims that the results of this study indicate

that the discharge into the atmosphere following detonation is comprised of CO₂ and H₂O. (Pet., p. 2). It is admitted by ETSCI that the detonations of some materials, such as picric acid, produce dense smoke, but ETSCI asserts that the constituents of the smoke produce no negative environmental impact (Pet., p. 3). ETSCI also claims that since only small quantities of material are destroyed during any one detonation, Agency air monitoring stations would not reflect the activity covered by the proposed variance. (Pet., p. 3).

In addition, ETSCI states that the destruction of explosive materials through controlled detonation does not create any residues which have a negative environmental impact. ETSCI personnel claim that they cannot recall any incident when a material failed to completely detonate thereby leaving a residue. According to ETSCI, residues are caused by one or more of the following factors:

- 1) selection of materials inappropriate for explosive treatment,
- 2) improper condition of the materials (e.g. too moist),
- 3) utilization of insufficient booster charges.

ETSCI asserts that all of its personnel involved in the detonation process have the necessary training and experience for proper disposal. (Pet., p. 3).

In its Recommendation, the Agency states that the closest residence to the detonation area is located about one mile away. With regard to topography, the detonation area is below the level of most of the surrounding land. The Site manager stated that ETSCI was assigned that area in order to minimize noise and blast wave problems. No complaints from the public have been received by either the Site manager or the Agency concerning the operations of ETSCI. The Agency was informed by the President of ETSCI that detonation sessions occur about twice per month and that each session lasts about two hours (Ag. Rec., p. 3).

The Agency expects emissions from ETSCI operations to include particulates and combustion products. (Ag. Rec., p. 3). The Agency questions the validity of the emissions study presented by ETSCI as Exhibit #1 to the Petition. The copy of the study examined by the Agency was missing page 3. The Board notes that a complete copy of the ETSCI study was filed on May 15, 1987. The Agency also states that the study lacks explanations or sufficient detail concerning methodologies of the study. Specifically, the Agency points to omissions concerning analytical method, sampling method, analytical detection limits, and analyzed species. (Ag. Rec., p. 7).

The Agency states that there is a lack of available literature regarding the short-term or long-term environmental effects of the disposal of shock sensitive materials by means of detonation. In addition, the Agency is concerned about the possibility of incomplete detonation. Mr. Jim O'Brien, Manager of the Office of Emergency Management for the Agency has viewed detonations in which smoke resulted due to an incomplete detonation. Also, according to O'Brien, incomplete detonation can result in "discolored powdery, particulate-type emissions" remaining at the point of impact subsequent to an explosion that produced no smoke. A video tape, supplied by ETSCI and presented as an exhibit to the Recommendation, does show smoke as a product of a detonation by ETSCI. Due to these concerns, the Agency has proposed that the variance include a condition requiring soil sampling of the blast site for each day of operation. The Agency also requests that the variance be limited to materials which it believes are shock sensitive and that cannot be disposed of by other means. As a result, the Agency asserts that some of the chemicals proposed for detonation by ETSCI are in fact not suitable for detonation. Specifically, the Agency states that the detonation of Lauroyl peroxide, Methyl ethyl ketone peroxide, and tert-Butyl peroxyphthalate should not be allowed under the variance because there are alternative reaction procedures available to destroy these chemicals or render them non-hazardous. In addition, the Agency asserts that Cumene hydroperoxide is not shock sensitive and should not be included on a list of chemicals that ETSCI may detonate. The Agency concludes that if the variance is granted with conditions as proposed by the Agency, "little injury would result to the environment and to the public therefore." (Ag. Rec., p. 5-7). ETSCI finds all of the Agency recommendations to be acceptable. (Response to Ag. Rec).

Compliance Plan

Once the U.S. Environmental Protection Agency (USEPA) promulgates regulations for facilities engaged in the open detonation of explosive wastes under the Resource Conservation and Recovery Act (RCRA), ETSCI plans to apply for a Part B permit for a site in Missouri or at another location. ETSCI submitted a copy of the USEPA's proposed rulemaking "Hazardous Waste Management System; Standards for Owners and Operators of Miscellaneous Units" (51 Fed. Reg. 40726) as exhibit #2 to the Petition. Consequently, ETSCI is requesting a variance for a five-year period or until it has a RCRA permitted facility operational, whichever occurs first.

Hardship

It is apparent that without the variance, ETSCI's detonation operations would not be in compliance with Board regulations.

ETSCI claims that a denial would not only impose hardship upon itself but also upon the schools, hospitals, and small businesses which have no alternative means to dispose of these explosive or shock sensitive materials. (Pet., p. 4). With regard to the same issue, the Agency Recommendation states,

The prohibition of open burning and present lack of rules for detonation of shock sensitive wastes does preclude safe disposal of these chemicals from schools, hospitals and small businesses who may possess them in Illinois. Such chemicals present a greater danger to life and health when remaining "on the self" [sic] at these facilities. The service performed by ETSCI is a needed one.

(Ag. Rec., p. 4)

The Agency further asserts that since no standards are yet available from the USEPA, no estimates of costs of controls for compliance are available. (Ag. Rec., p. 4).

Alternative Methods for Compliance

ETSCI states that neither landfills or incinerators will accept explosive material for disposal. In the past, ETSCI has sought, on a case by case basis, emergency permits from the Agency to destroy explosive or shock sensitive materials "on site" at the generator's property. However, ETSCI claims that schools and hospitals are generally not located so as to allow the safe detonation of the materials. According to ESTCI, the only alternative to disposal of these materials would be storage by the generators. However, ESTCI claims that such storage of explosive or shock sensitive materials creates risks especially since some materials become increasingly shock sensitive with age. (Pet., p. 3-4).

Findings

The Agency claims that if the Board grants a variance "little injury would result to the environment and the public." There is nothing in the record which suggests that this is an incorrect conclusion. The area where ETSCI will detonate its materials is sufficiently isolated so as to minimize the impact of the explosions on the general public. Similarly, the evidence indicates that the chemical products of the detonations would not have a significant negative impact upon the surrounding environment. This is particularly true when considering the frequency of the detonations as well as the amount of material detonated.

Both the Agency and ETSCI agree that the type of disposal provided by ETSCI is needed in order to rid schools, hospitals, and businesses of explosive chemical wastes. There also appears to be no alternative means of disposal of such materials.

Given all of the above considerations, the Board finds that denying ETSCI a variance would result in an arbitrary or unreasonable hardship. Therefore, the Board hereby grants ETSCI a variance subject to conditions. The conditions adopted by the Board include those which the Agency has requested in its Recommendation. This Opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

The Board hereby grants Emergency Technical Services Corporation of Illinois (ETSCI) variance from 35 Ill. Adm. Code 237.102, pursuant to the provisions of 35 Ill. Adm. Code 237.103, from May 28, 1987 until May 28, 1992 or until the U.S. Environmental Protection Agency or the Board promulgates regulations which are applicable to the detonation operations of ETSCI, whichever occurs first. This variance is subject to the following conditions.

1. The open detonation shall only be conducted between the hours of 9:00 a.m. and 4:00 p.m. at the area assigned to ETSCI in the Illinois Natural Guard Marseilles Training Site located in Marseilles, Illinois.
2. The open detonation shall only commence when the cloud cover over the detonation site is no more than 50 percent.
3. Any visibly contaminated soils and vegetation shall be excavated after each day of operation by ETSCI and be containerized for disposal as a special waste.
4. Monitoring to verify the efficiency of the technique will be performed as follows:
 - a) A videotape of each detonation shall be made and will include:
 - 1) the "waste" container along;
 - 2) the material as prepared, with initiator, co-explosive (if used) and blasting cap;
 - 3) the actual detonation and shortly thereafter, showing fire and smoke evolved; and

- 4) a close up of the detonation site, documenting residue or lack thereof.
 - b) This videotape will be made available to the Agency upon request.
 - c) A soil sample of the detonation site where the blasts have disturbed the soil shall be taken. One composite sample per day of operation shall be taken, and the sample shall be analyzed for parent materials detonated, with at least 0.1 ppm detection limit, unless evidence can be provided documenting that a higher detection limit is the best commonly achievable.
 - d) A record shall be made of air temperature, wind speed, wind direction, cloud cover, humidity, precipitation for each day of operation and any significant change that occurred during operations.
5. Materials to be detonated shall be limited to:
- a) "common ethers"
 - 1) Diethyl ether (ethyl ether)
 - 2) dioxane
 - 3) isobutyl ether
 - 4) isopropyl ether
 - 5) tetrahydrofuran
 - b) "aromatic trinitro compounds"
 - 1) picramic acid
 - 2) picramide
 - 3) picratol
 - 4) picric acid (trinitrophenol)
 - 5) picric chloride
 - 6) picrylsulfonic acid
 - 7) trinitroaniline
 - 8) trinitrobenzene

- 9) trinitrotoluene (TNT)
- 10) trinitrosalicylic acid
- c) "organic peroxides"
 - 1) acetyl peroxide
 - 2) benzoyl peroxide
 - 3) tert-butyl-hydroperoxide
 - 4) tert-butyl-perbenzoate
- 6. Materials containing the following toxic metals will not be detonated: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Gallium, Germanium, Hafnium, Indium, Iridium, Lead, Manganese, Mercury, Nickel, Osmium, Platinum, Rhenium, Rhodium, Ruthenium, Selenium, Silver, Tellurium, Thallium, Tungsten, and Vanadium.
- 7. Petitioner shall submit to the Agency for the duration of the variance period, quarterly reports which shall contain the following information:
 - a) Date of detonation
 - b) Type of Material detonated
 - c) Amount of material detonated
 - d) Results of composite soil sample taken subsequent to detonation.

The quarterly report shall be addressed as follows:

Mr. Otto Klein
 Illinois Environmental Protection Agency
 Field Operations Section
 P.O. Box 19276
 2200 Churchill Road
 Springfield, Illinois 62794-9276

- 8. Within 45 days of the Board's Order, Petitioner shall execute a Certification of Acceptance and Agreement which shall be sent to:

Bobella Glatz
 Illinois Environmental Protection Agency
 P.O. Box 19276
 2200 Churchill Road
 Springfield, Illinois 62794-9276

This certification shall have the following form:

I, (We) _____, hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 87-12, dated May 28, 1987.

EMERGENCY TECHNICAL SERVICES CORP.

By: _____
(Name)

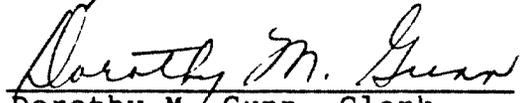
(Name)

(Date)

IT IS SO ORDERED.

Chairman J.D. Dumelle concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 28th day of May, 1987, by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board