ILLINOIS POLLUTION CONTROL BOARD
July 18, 1974

TROJAN-U.S. POWDER CO., a Division of Commercial Solvents Corp., PETITIONER	)	
v.	)	PCB 74-32
ENVIRONMENTAL PROTECTION AGENCY RESPONDENT	)	

MR. NORBERT GARRISON, ATTORNEY, in behalf of TROJAN-U.S. POWDER CO.
MR. LARRY EATON, ASSISTANT ATTORNEY GENERAL, and MR. RONALD LINICK, ATTORNEY, in behalf of the ENVIRONMENTAL PROTECTION AGENCY

OPINION AND ORDER OF THE BOARD (by Mr. Marder)

This action involves a request for variance originally filed under Docket Number PCB 71-57 and PCB 71-58. The Board's Order of June 14, 1971, granted certain aspects of said variance requests, subject to numerous conditions. Upon appeal to the Appellate Court and Motion to Reconsider to the Board, the Board issued a further Order on October 14, 1971, modifying its June 14, 1971, Order. A pertinent part of the October 14, 1971, Order provided for a new hearing to be held in the matter. The Board on January 17, 1974, after delay for unknown reasons, renumbered the variance request PCB 74-32 and set it for hearing.

The original request asked for relief to grant permission for open burning of explosive wastes for Petitioner's Marion and Wolf Lake facilities. Since this time all production operations have ceased at the Marion facility and the instant variance request centers around the Wolf Lake facility only. Relief is sought to burn up to 1000 pounds of non-solid explosive contaminated wastes per day and 100 pounds of solid explosive wastes per day. The record of PCB 71-57 and 71-58 as well as the record of a prehearing conference held on March 12, 1974, was incorporated into this record. Hearing was held on March 27, 1974.

Trojan owns and operates a facility for the manufacture of various explosive products located near Wolf Lake in Union County, Illinois. This facility is located on some 1250 acres of land immediately adjacent to Shawnee National Forest. Operations take place in widely separated buildings numbering over twenty, and employ approximately 105 persons (R. 31).

Mr. John Jackson, plant manager for Trojan, detailed the operations

of the Wolf Lake facility (R. 47-48). One of the products produced is termed a "sensitizer" which is manufactured by mixing cornstarch with sulphuric and nitric acids to produce nitrostarch. This material is then neutralized with ammonia and recovered as a solvent. The powdered material can then be used in the wet or dry form depending on need. The wet nitrostarch is then mixed with ammonium and sodium nitrates in a building called a "scale house." The mixture then goes to the "punch house" for packing into shells. From the "punch house" the material is either paraffin-sealed and packed, or just packed in magazines.

The facility also receives quantities of explosive materials which are introduced into the process. Such items as TNT and RDX are received in packages and mixed with other components.

Wastes are generated in a number of different ways. Contaminated wastes consist of packaging material and empty or contaminated shells. Packaging material consists of about 150 #/day of ball powder drums, 250# of TNT boxes, and some 50# of empty nitrate bags. Solid wastes are generated by cleaning sumps, cleaning beneath buildings or return and/or improperly formulated dynamite. Solid wastes and contaminated wastes are separated (R. 63).

The central issue in this action is whether or not Trojan has exercised good faith in attempting to develop alternate means of disposing of their explosive waste. Much of the testimony reflected on the possible options of such disposal for each type of waste. There would seem to be general concurrence that solid wastes reflect a much more serious and potentially dangerous disposal problem than do contaminated wastes. As mentioned, solid wastes are separated from contaminated wastes; however, due to the nature of the process in some instances contaminated wastes can have quantities of solid waste contained therein. This is due to the fact that empty cartridge casings could have powder residue left in them or on rare occasion a full cartridge could be mixed into the contaminated wastes (R. 24). From this logic we can determine that contaminated wastes have the potential to be solid wastes. It is this possibility that tends to cause Trojan to shy away from incinerating such contaminated wastes.

Various methods of disposal were discussed as follows:

1. Hand picking of contaminated wastes prior to disposal: Both Mr. Jackson and Mr. Dowling (Petitioner's employees) spoke of hand picking of contaminated wastes. This would entail going through each item before it is placed in a trailer for disposal. Material which contained solid waste would then be separated for disposal (R. 24). Mr. Jackson testified that no attempt was ever made to hand pick wastes (to his knowledge), nor did he have any idea as to what costs would be generated by such an operation (R. 63). It is the Board's opinion that such a study would be prerequisite to future plans in that the nature of combustibility of the two segments of contaminated wastes would play an integral part in future compliance plans.

2. Incineration: Much discussion centered around the use of incineration as a viable technique. Mr. Dowling stated that in his opinion incineration was not a viable approach in that to safely burn one needs open space and that any incinerator would be in essence a confined space (R. 138). He further stated that he would not recommend incineration even after hand picking because of the chance of missing a full shell which would then become an explosive force within the confines of the incinerator (R. 168). Mr. Dowling related his experiences as a technical representative for Petitioner in that in all the plant sites he has visited or has knowledge of, open burning is the rule of thumb for this type of wastes (R. 114).

The point that is distressing to the Board is that very little research has been conducted by Petitioner in order to determine whether such a system could be designed and operated (most particularly for contaminated wastes). No outside consultants were ever hired (R. 145) and internal efforts were at best meager (R. 144).

Mr. Richard Altekruse (manager process engineering, Olin Corp.) appeared under subpoena and discussed Olin's experience with an explosive waste incinerator. He stated that Olin's incinerator took two years to develop (R. 203), and was internally developed after consultation with an outside consultant from Southern Illinois University proved nonproductive (R. 187).

The differences between Olin's wastes and Trojan's wastes were pointed out. Olin predominantly manufactures what is termed blank powder or magnesium flares. The rate of reaction of such material is a few hundred feet per second and is used to burn rather than explode. Trojan's waste has detonation velocities of 20,000 feet per second and pressures of many atmospheres (R. 135). The main difference is the explosive versus burning properties of the two wastes. Mr. Dowling related discussions with Olin regarding a test burn of Trojan's material (R. 112). Olin representatives turned down the request; however, there is doubt that Olin understood the nature of the request (R. 195). Olin's incinerator can be used to burn RDX at about 10 #/hr, and would have no problem burning ammonium nitrate bags (R. 198).

3. Landfill operation: Another possible method of disposal discussed was landfilling. In the opinion of Mr. Dowling, this method would be unsatisfactory from a safety viewpoint (R. 23). Mr. Dowling related that due to the insolubility of certain explosives there is a perpetual danger of carelessly digging up explosives and suffering an explosion. Substances such as Tro-Gel would be a severe hazard, while ammonium nitrate would pose a slight hazard (R. 150-153). He related an experience where material lying dormant as long as 25 years exploded upon excavation (R. 155). Once again the difference in the type of waste generated (solid v. contaminated) plays a major part in whether landfilling is a viable alternate.

Environmental Protection Agency Exhibit #1 is a report submitted for Trojan by Mr. R. A. Woodley (director of environmental control) detailing Trojan's efforts to solve their open burning problem. This report was dated September 10, 1971, and was issued in response to the Board's Order in PCB 71-57 and 71-58, requiring the submittal of "a firm program for alternative disposal of explosive wastes." The report details that contacts were made with nine separate facilities to secure information on incineration, and that all of these companies were willing to undertake research projects at Trojan's expense; however, none had a ready-made solution (Exhibit 1, Pg. 3). The report also details preliminary tests of a 1/4" steel incinerator which indicated that explosive contaminated wastepaper can be incinerated if handpicked; however, the report also states that the handpicking operation would be "extraordinarily expensive" (Ex. 1, Pg. 4). The report concludes by asking permission to install and operate an air curtain destructor. The Agency denied the request, based on the fact that air curtain burning was in fact open burning with a slightly greater degree of sophistication (Reco. Pg. 4).

Since the 1971 report there is very little evidence that Petitioner has done anything to further investigate the alternate possibilities open. Petitioner rests on the contention that alternates to open burning are unfeasible, and shows no good faith effort to explore or develop such technology. In its own 1971 report Petitioner states that "incineration can be used" and bares its reluctance to proceed with experimentation on the grounds of high cost. Nowhere in the record does Petitioner allege financial hardship, and the Board has held time and again that economic impact alone is not sufficient grounds for variance (City of Carrollton and Carrollton Farmers Elevator Co. v. Environmental Protection Agency, PCB 71-210, Harold L. Swords v. Environmental Protection Agency, PCB 70-6). The Board has, however, held that variance can be granted if no technology exists, and a viable research program is undertaken (Mt. Carmel Public Utility Co. v. Environmental Protection Agency, PCB 71-15, Union Oil Co. of California Chicago Refinery v. Environmental Protection Agency, PCB 72-447). In 72-447 variance was granted due to a good faith showing which included an ongoing research program. No such ongoing program exists here.

Were it not for the potential danger to the persons employed at the Wolf Lake plant, the above would be sufficient for a dismissal. However, we are faced with a situation in which the Board must rate the safety of those working at the facility as a top priority. The Board will not grant a variance of extended duration; it will rather grant a short variance which will allow open burning for such time as to allow Petitioner to initiate and follow through with a plan intended to alleviate the problem. Such a plan should give careful consideration to handpicking of wastes with the goal of safely incinerating contaminated wastes. The Board after careful consideration of all facts elicited can come to two general conclusions:

1. Separation and safe incineration of contaminated wastes is a distinct possibility and should be vigorously pursued.
2. Incineration of solid wastes presents a much more difficult problem and a compliance plan for this type of material may require a significant amount of time. The Board

would be receptive to such a plan.

Environmental impact is, of course, a major consideration in our determinations. In the instant case, the only data was presented by the Agency (although the burden of proof is clearly on the Petitioner). Petitioner's nearest neighbor is about 1/2 mile from the burning site, and generally population within one mile is sparse. Expected emissions are as follows:

From solid wastes	5 lbs. particulates/100 lbs.
From ~~contaminated~~ wastes	8.5 lbs. part./1000 lbs. waste
	25 lbs. CO/1000 lbs. waste
	2 lbs. HC/1000 lbs. waste
	1 lb. NO_x/1000 lbs. waste

It is the Agency's opinion that these emissions should not cause unreasonable interference with persons or property.

Considering all factors, the Board will grant a six-month variance, to allow open burning with certain conditions. It is the opinion of this Board that little has been done by Petitioner in the way of good faith efforts to achieve compliance.

This Opinion constitutes the findings of fact and conclusions of law of the Board.

ORDER

IT IS THE ORDER of the Pollution Control Board that:

Variance is granted to Trojan-U.S. Powder to open burn a maximum of 100 lbs./day of solid explosive wastes and up to 1000 lbs./day of contaminated explosive wastes for a period of six months from the date of this Order, subject to the following:

1. Within three months of the date of this Order, Trojan shall file with the Agency and the Board a detailed plan to bring about compliance. Such plan shall include as a minimum:

   A) A firm compliance date, if possible.
   B) A timetable for an ongoing research and development program either internally or externally conducted.
   C) A complete economic study on handpicking of wastes.
   D) Distinction between plans for solid and ~~contaminated~~ wastes.

2. Respondent shall, within 30 days from the date of this Order, post a performance bond in the amount of $10,000 in a form satisfactory to the Agency guaranteeing compliance with this Order. Bond shall be forwarded to the Fiscal Services Division, Illinois Environmental Protect-

ion Agency, 2200 Churchill Road, Springfield, Illinois 62706.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted by the Board on the 18th day of July, 1974, by a vote of 5 to 0.

Christan L. Moffett