

ILLINOIS POLLUTION CONTROL BOARD  
February 25, 1993

CITY OF CHESTER,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 93-23
	)	(Variance)
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
	)	
Respondent.	)	

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

This matter is before the Board on the February 3, 1993 petition for variance filed by the City of Chester (Chester). Chester seeks relief from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(a), "Restricted Status", to the extent those regulations relate to the violation by Chester's public water supply of the maximum contaminant level (MCL) of 0.10 mg/L for total trihalomethanes (TTHM) as set forth in 35 Ill. Adm. Code 611.310(c) and (d). Chester seeks a 24 month variance until February 25, 1995.

On February 11, 1993, the Illinois Environmental Protection Agency (Agency) filed its variance recommendation. The Agency recommends that the Board grant a 24-month variance subject to certain conditions to give Chester time to perform four quarterly tests, to see if it is in compliance, and to submit the test results. (Agency Rec. par. 36(A).) The Agency states that this will also allow Chester time to prepare a plan for immediate improvements or replacement of existing treatment facilities necessary to permanently address the TTHM problem. (Agency Rec. par. 36(A).) Chester waived hearing in this matter, and none was held.

For the reasons discussed below, the Board finds that the record contains adequate proof that to require immediate compliance with 35 Ill. Adm. Code 602.105(a) and 602.106(a) would result in the imposition of an arbitrary or unreasonable hardship. Accordingly, the Board will grant the variance subject to the conditions specified in the accompanying order.

BACKGROUND

Chester is a municipality in Randolph County, Illinois, which provides potable water for the residential, commercial, and industrial customers in the City of Chester, the Village of Ellis Grove, the Randolph County Conservation Area, and the Chester Mental Health Center. (Pet. par. 9.) Chester serves a total

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population of 6890. (Pet. par. 9.) Water is distributed as follows:

Residential	75%
Commercial	15%
Industrial	5%
Institutional	5%

(Pet. par. 9.)

Chester owns and operates the water supply, treatment facility, and distribution system for the City of Chester. (Pet. par. 11.) Chester, however, does not own or operate the distribution system of the Village of Ellis Grove or the Chester Mental Health Center. (Pet. par. 11.) Chester is not part of a regional water supply. (Pet. par. 10.) Water is provided to all residential, commercial, and industrial users as needed, and charges are made according to ordinance. (Pet. par. 11.) If variance is granted, Chester foresees extending its water mains to serve 24 low-income, elderly, and handicap housing units within Chester. (Pet. par. 12.)

Agency records indicate the Chester has not sought a variance from regulations concerning TTHM prior to this petition. (Agency Rec. par. 7.) The Agency also states that Chester is not presently on restricted status for exceeding any other contaminant. (Agency Rec. par. 14.)

REGULATORY FRAMEWORK

The instant variance request concerns 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(a), "Restricted Status. Those regulations provide, in pertinent part, as follows:

Section 602.105 Standards for Issuance

- a) The Agency shall not grant any construction or operating permit required by this Part unless the applicant submits adequate proof that the public water supply will be constructed, modified or operated so as not to cause a violation of the Environmental Protection Act (Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1001 et seq.) (Act), or of this Chapter.

Section 602.106 Restricted Status

- a) Restricted status shall be defined as the Agency determination, pursuant to Section 39(a) of the Act and Section 602.105, that a

public water supply facility may no longer be issued a construction permit without causing a violation of the Act or this Chapter.

These regulations authorize the issuance of construction permits only where the applicant submits proof that the public water supply will be constructed, modified or operated in accordance with the Act.

In determining whether any variance is to be granted, the Act requires the Board to determine whether a petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship. (415 ILCS 5/35(a) (1992).<sup>1</sup>) Furthermore, the burden is upon the petitioner to show that its claimed hardship outweighs the public interest in attaining compliance with regulations designed to protect the public (Willowbrook Motel v. Pollution Control Board (1977), 133 Ill.App.3d 343, 481 N.E.2d 1032). Only with such showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship. Where the petitioner seeks to extend a variance, the petitioner must show satisfactory progress.

A further feature of a variance is that it is, by its nature, a temporary reprieve from compliance with the Board's regulations (Monsanto Co. v. IPCB (1977), 67 Ill.2d 276, 367 N.E.2d 684), and compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter. (Id.) Accordingly, except in certain special circumstances, a variance petitioner is required, as a condition to grant of variance, to commit to a plan which is reasonably calculated to achieve compliance within the term of the variance.

The grant of variance from 35 Ill. Adm. Code 602.105(a) and 602.106(a) does not absolve a petitioner from compliance with the MCL at issue, nor does it insulate a petitioner from possible enforcement action brought for violation of that MCL. The underlying MCL remains applicable to the petitioner regardless of whether variance is granted or denied.

#### CHESTER'S RESPONSE AND PROPOSED COMPLIANCE PLAN

Prior to notification of noncompliance, Chester's existing treatment plant operated as follows. Raw water was pumped from the Mississippi River to a rapid mix chamber. (Pet. par. 20.) Chlorine was fed just prior to the rapid mix chamber and lime, ferric sulfate, and powdered activated carbon were added at the

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<sup>1</sup>This section of the Act was previously codified at Ill.Rev. Stat. 1991, ch. 111½, par. 1035(a).

rapid mix chamber. (Pet. par. 20.) The flow was then split in the rapid mix chamber with the flow going to one rectangular sedimentation basin (without sludge removal equipment) and to one circular sedimentation basin (with sludge removal equipment). (Pet. par. 20.) Water then flowed through four rapid chamber sand filters which have a 27 inch layer of anthracite on top of the sand. (Pet. par. 20.) After filtration, the water flowed into a clearwell where it was pumped into the distribution system. (Pet. par. 20.) Polyphosphate was added prior to filtration and fluoride was added after filtration. (Pet. par. 20.)

On March 20, 1992, Chester received an Agency letter stating that the level of TTHM in its water distribution system exceeded the regulatory MCL for TTHM. (Pet. par. 15.) The letter stated that the TTHM average for the past four consecutive quarters was 0.135 mg/L, which exceeded the 0.10 mg/L MCL standard. (Pet. pars. 15, 16, Ex. B.) On March 25, 1992, the Agency notified Chester that it would be placed on restricted status. (Pet. par. 15, Ex. C.) Compliance with 35 Ill. Adm. Code 611.310(c) and (d) was not achieved because there was no aqua ammonia feed equipment on line in time to affect the changes necessary. (Pet. pars. 18, 19.)

After Chester realized that the MCL for TTHM would not be met, Chester modified its treatment process to reduce the TTHM concentration in the treated water. (Pet. par. 21.) The modifications included the installation of an aqua ammonia feed system. (Pet. par. 21.) It was anticipated that this modification would reduce the concentration of TTHM throughout the distribution system. (Pet. par. 22.)

On February 2, 1992, Chester submitted a plan to the Agency for additional ammonia as a means of lowering the TTHM level. (Pet. par. 17.) Upon receipt of a March 31, 1992 Agency permit, Chester authorized the purchase of equipment and construction of facilities to inject ammonia and produce chloramines as a primary means of disinfection. (Pet. par. 17.) The equipment was placed into service in mid-October, 1992. (Pet. par. 18.) Reduction of TTHM levels was immediate. (Pet. pars. 18, 27.) The period of time requested for the variance will allow Chester to adjust and monitor the treatment processes. (Pet. par. 23.)

#### ALTERNATIVE COMPLIANCE PLANS

There are two primary methods for achieving compliance. (Pet. par. 28.) The first method is to optimize the treatment process to remove TTHM precursors, thereby reducing TTHM formation. (Pet. par. 29.) The second method is to use an alternative disinfection method. (Pet. par. 30.) The most common alternative disinfection method is an ammonia feed process, which Chester has implemented as discussed above. (Pet.

pars. 30, 31.) Ozone is another commonly used disinfection method. (Pet. par. 30.)

#### HARDSHIP

Denial of the variance would prevent the Agency from issuing construction and operating permits to Chester until compliance is achieved. Without the construction and operating permits, all construction requiring water extensions within Chester's service area would be halted. (Pet. par. 35.) Chester argues that denial of the variance will have a negative impact on prospective home purchasers and developers, as well as on its tax base. (Pet. par. 35.) Specifically, Chester plans to extend its water mains to serve the new 24 unit housing complex within the city. (Pet. par. 12.)

Chester further argues that, because there is no significant risk of harm to the environment or to the public health for the variance period, continuation of the effect of being placed on restricted status would work an arbitrary or unreasonable hardship on the city, its taxpayers, and on prospective developers, as well as those persons and industries served by those developers. (Pet. par. 36.) Chester concludes that the hardship resulting from a denial of the variance outweighs the harm to the public resulting from a grant of the variance. (Pet. par. 36.)

The Agency agrees that, under the circumstances in this case, a denial of the requested variance would result in an arbitrary or unreasonable hardship. (Agency Rec. pars. 25, 26.) The Agency further agrees that denial of the variance would impose an arbitrary or unreasonable hardship in that the Agency could not issue a water main extension permit to allow for the occupancy of the new 24 unit housing complex within Chester. (Agency Rec. par. 27.)

#### ENVIRONMENTAL IMPACT

Chester has made no formal assessment of the effect of this variance on the environment. (Pet. par. 25.) Chester, however, asserts that "the granting of this variance for the limited time period of the requested variance will not cause any significant harm to the environment or to the people served by potential water main extensions that would be allowed if this variance is granted. [Chester] does not consider the TTHM concentration of this community water supply to be a significant health risk for the limited time period of the requested variance." (Pet. pars. 25, 34, 36.) Although Chester does not state the basis for this belief, Chester's petition together with the Agency's recommendation sufficiently addresses this matter.

The Agency believes an incremental increase in the allowable

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concentration for TTHM will impose no significant injury to the environment or to the limited population served by the new water main extensions for the time period recommended. (Agency Rec. pars. 24, 25, 26.) TTHM are organic chemicals consisting of one carbon atom and three halogen atoms. (Agency Rec. par. 19.) TTHM are formed when free chlorine reacts with naturally occurring compounds which are generally produced by decaying vegetation. (Agency Rec. par. 19.) Research by the National Cancer Institute and the National Academy of Sciences indicates that TTHM may be carcinogenic and can lead to liver and kidney disorders, birth defects, and central nervous system damage. (Agency Rec. par. 19.)

The United States Environmental Protection Agency (USEPA) promulgated federal regulation 44 Fed. Reg. 68624, R81-11, Ex. 4, R81-11, 23-24 in response to the potential adverse health effects of TTHM. (Agency Rec. par. 20.) The regulations establish an MCL for TTHM of 0.10 mg/L and provide monitoring schedules. (Agency Rec. par. 20.)

The federal regulations are part of the Primary Drinking Water Regulations (40 CFR 141) under the Safe Drinking Water Act (SDWA) (42 U.S.C 300f (1989)). The SDWA requires states to adopt rules at least as stringent as the USEPA rules to retain primary enforcement responsibilities. (Agency Rec. par. 20.) In Illinois, the TTHM standard of 0.10mg/L is applicable to public water supplies serving over 10,000 people and, after January 1, 1992, to public water supplies serving less than 10,000 people. (35 Ill. Adm. Code 611.310(c) and (d).) (Agency Rec. par. 21.) This standard is estimated to allow for one excess cancer death for every 10,000 to 100,000 people with a lifetime exposure to TTHM at the MCL in their drinking water. (Agency Rec. par. 21.)

#### CONSISTENCY WITH FEDERAL LAW

The Agency states that the requested variance may be granted consistent with the SDWA and corresponding regulations (40 CFR Part 141) because the variance does not grant relief from national primary drinking water regulations. (Agency Rec. par. 29.) The Agency also does not believe that USEPA will object to the issuance of variance because continuing progress is being made towards compliance. (Agency Rec. par. 33.)

#### CONCLUSION

Under the circumstances in this case, the Board finds that immediate compliance with 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(a), "Restricted Status" with respect to TTHM would impose an arbitrary or unreasonable hardship on Chester. Although Chester's petition does not fully address some issues, the petition read together with the Agency's

recommendation provides sufficient information on which the Board may base a decision.

Although Chester has not listed compliance costs, the record indicates that the costs of modifications were minimal since Chester already has the capacity of feeding the aqua-ammonia as described. (Pet. par. 26.) Chester also moved very quickly to achieve compliance as soon as it was informed that the TTHM level exceeded the MCL. The TTHM levels in Chester's finished water (0.135 mg/L) is only slightly above the MCL (0.10 mg/L) and should cause no significant health risk for the limited population served by the new water main extensions for the time of this variance.

A variance of 24 months will allow Chester time to perform quarterly tests to monitor the level of contaminants. The Board accordingly will grant this variance for a maximum period of 24 months to allow Chester to adjust and monitor its treatment processes. Today's action is solely a grant of variance from 35 Ill. Adm. Code 602.105(a), "Standards of Issuance" and 35 Ill. Adm. Code 602.106(a), "Restricted Status" as they relate to TTHM.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

#### ORDER

The City of Chester (petitioner) is hereby granted a variance from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(a), "Restricted Status", as they relate to the maximum contaminant level (MCL) for total trihalomethanes (TTHM), as set forth in 35 Ill. Adm. Code 611.310(c) and (d). This variance will remain in effect until February 25, 1995, subject to the following conditions:

- (A) Variance shall terminate on the earliest of the following dates:
  - (i) February 25, 1995; or
  - (ii) when analysis of petitioner's water supply shows compliance with the standard for TTHM in drinking water.
- (B) In consultation with the Illinois Environmental Protection Agency (Agency), petitioner shall continue its sampling to determine the level of TTHM in its public water supply through the water treatment facility. Until this variance terminates, petitioner shall collect quarterly samples of its water from its distribution system at locations approved by the Agency

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in accordance with 35 Ill. Adm. Code 611.680. Analysis shall be performed by a laboratory certified by the State of Illinois for TTHM analysis. The results of the analyses shall be reported within 30 days of receipt of the most recent result to:

Illinois Environmental Protection Agency  
Compliance Assurance Section  
Division of Public Water Supplies  
2200 Churchill Road  
Springfield, Illinois 62794-9276

The running average of the most recent four quarterly sample results shall be reported to the above address within 30 days after receipt of the most recent quarterly sample.

- (C) Pursuant to 35 Ill. Adm. Code 611.851(b), in its first set of water bills or within three months after the date of this order, whichever occurs first, and every three months thereafter, petitioner shall send to each person served by its public water supply a written notice to the effect that the Illinois Pollution Control Board has granted petitioner a variance from 35 Ill. Adm. Code 602.105(a) Standards of Issuance and 35 Ill. Adm. Code 602.106(a) Restricted Status, as they relate to the MCL standard for TTHM.
- (D) If results of analyses performed on samples pursuant to 35 Ill. Adm. Code 611.685 show a violation of the MCL for TTHM, then public notice shall be made pursuant to 35 Ill. Adm. Code 611.851(b).
- (E) Until full compliance is achieved, petitioner shall take all reasonable measures with its existing equipment to minimize the level of TTHM in its finished drinking water.
- (F) Petitioner shall provide written progress reports to the Agency beginning July 1, 1993, and continuing every six months thereafter until compliance, concerning steps taken to comply with the paragraphs of this order. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph. Progress reports shall be addressed to:



Illinois Environmental Protection Agency  
Division of Public Water Supply  
Field Operations Section  
2200 Churchill Road  
Springfield, Illinois 62794-9276

- 2) Within forty-five days of the date of this order, petitioner shall execute and forward to:

Stephen C. Ewart  
Division of Legal Counsel  
Illinois Environmental Protection Agency  
P.O. Box 19276  
2200 Churchill Road  
Springfield, Illinois 62794-9276

a Certificate of Acceptance and Agreement to be bound by all terms and conditions of the granted variance. The 45 day period will be held in abeyance during any period that this matter is being appealed. Failure to execute or forward this certificate within 45 days will render the variance null and void. The form of the certificate is as follows:

I (We), \_\_\_\_\_,  
hereby accept and agree to be bound by all terms and conditions of the order of the Pollution Control Board in PCB 93-23, February 25, 1993.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

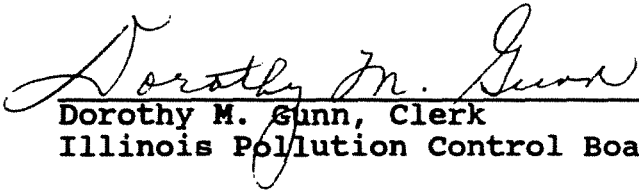
IT IS SO ORDERED.

Board Members J. Theodore Meyer and B. Forcade dissented.

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Section 41 of the Environmental Protection Act, 415 ILCS 5/41 (1992 State Bar Edition), provides for appeal of final orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements (but see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration, and Castenada v. Illinois Human Rights Commission (1989), 132 Ill.2d 304, 547 N.E.2d 437.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 25<sup>th</sup> day of February, 1993, by a vote of 4-2.

  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board