

ILLINOIS POLLUTION CONTROL BOARD
December 6, 2001

CITY OF CHARLESTON,)
)
 Petitioner,)
)
 v.)
) PCB 02-20
 ILLINOIS ENVIRONMENTAL) (Variance – Public Water Supply)
 PROTECTION AGENCY,)
)
 Respondent.)

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

This matter is before the Board pursuant to a petition for variance filed by the City of Charleston (Charleston), on August 16, 2001. Pursuant to Section 35(a) of the Environmental Protection Act (Act), the Board may grant variances from Board regulations whenever immediate compliance with Board regulations would impose an arbitrary or unreasonable hardship on the petitioner. 415 ILCS 5/35(a) (2000). The Illinois Environmental Protection Agency (Agency) is required to appear in hearings on variance petitions. 415 ILCS 5/4(f) (2000). The Agency is charged with the responsibility of investigating each variance petition and making a recommendation to the Board as to the disposition of the petition. 415 ILCS 5/37(a) (2000).

Charleston is seeking a variance for its drinking water treatment plant (plant). The requested variance is from Subsection 611.743(a)(1) of the Board's primary drinking water standards. 35 Ill. Adm. Code 611.743.¹ This provision mandates lower turbidity levels in filtered drinking water samples. Charleston has requested the variance for a period of two years. Pet. at 2; resp. at 1.²

In a variance proceeding, the burden is on the petitioner to present proof that immediate compliance with Board regulations would cause an arbitrary or unreasonable hardship, which outweighs public interest in compliance with the regulations. Marathon Oil v. Environmental Protection Agency, 242 Ill. App. 3d 200, 206, 610 N.E.2d 789, 793 (5th Dist. 1993). Pursuant to Section 35(a) of the Act, the Board finds that Charleston has presented adequate proof that immediate compliance with Subsection 611.743(a)(1) of the Board regulations would impose

¹ These standards were adopted by the Board in SDWA Update, USEPA Regulations (July 1, 1998 through December 31, 1998), R99-12 (July 22, 1999).

² Charleston's petition will be cited as "Pet. at ___"; the Agency's recommendations will be cited as "Rec. at ___"; Charleston's response to the hearing officer order will be cited as "Resp. at ___."

such a hardship. For the reasons stated below, the Board grants Charleston's variance request subject to certain conditions recommended by the Agency.

PROCEDURAL MATTERS

The Agency filed its recommendation in response to the petition on October 1, 2001. The Agency recommended that the Board grant the petition subject to certain conditions that are listed in the order below. Rec. at 1, 10-11.

In its petition, Charleston requested a hearing on its petition pursuant to 35 Ill. Adm. Code 104.204(n). On September 6, 2001, the Board accepted this matter for hearing. On November 13, 2001, Charleston filed a waiver of hearing and acceptance of Agency recommendations. The Board accepts Charleston's waiver.

On September 21, 2001, the hearing officer ordered Charleston to provide information to the Board that was not included in the petition. The hearing officer requested additional information on topics such as construction of the new plant and additional data on *Giardia* and *Cryptosporidium*. On November 19, 2001 Charleston filed a response to the hearing officer order.

FACILITY DESCRIPTION

Charleston's existing plant is located at 2600 McKinley Avenue in Charleston, Coles County. Charleston draws its drinking water from Lake Charleston. Charleston provides drinking water to approximately 21,000 residents. The existing treatment plant was built in 1964 and employs seven fulltime certified operators. Pet. at 3, exh. B.

APPLICABLE REGULATIONS AND REQUESTED RELIEF

Charleston's existing plant produces water that meets existing drinking water quality regulations for turbidity. Turbidity is measured in nephelometric turbidity units (NTU). The existing Board regulation requires Charleston to produce water with a turbidity of 0.5 NTU or less 95% of the time. 35 Ill. Adm. Code 611.250(a)(1); pet. at 9.

On December 31, 2001, a new turbidity standard will come into effect at Subsection 611.743(a)(1) of the Board's regulations. Charleston has requested a variance from Subsection 611.743(a)(1). Subsection 611.743(a)(1) applies to drinking water treatment plants that serve more than 10,000 people and have a surface water source. See 35 Ill. Adm. Code 611 Subpart R and 611.101. Subsection 611.743(a)(1) provides:

A PWS [public water supply] subject to the requirements of this Subpart that does not meet all of the standards in this Subpart and Subpart B of this Part for avoiding filtration shall provide treatment consisting of both disinfection, as specified in Section 611.242, and filtration treatment which complies with the requirements of subsection (a) or (b) of this Section or Section 611.250 (b) or (c) by December 31, 2001.

- a) Conventional filtration treatment or direct filtration.
 - 1) For systems using conventional filtration or direct filtration, the turbidity level must be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month, measured as specified in Sections 611.531 and 611.533.

Thus, without the relief provided in a variance, Charleston will have to produce water with an NTU of 0.3 or less 95% of the time by December 31, 2001. Based on Charleston's data from 1998-2001, its existing plant can only produce finished water with a turbidity of 0.3 NTU or less 70% of the time. During that period, the lowest monthly compliance rate with the 0.3 NTU standard was just under 34%. Pet at 5, 9, 10 exh. A.

COMPLIANCE PLAN

In order for Charleston to produce 0.3 NTU combined finished water turbidities 95% of the time, it must build a new plant. Charleston estimated that construction of the plant will take 36 months but will not be complete by the end of December 2001. Charleston began preliminary engineering work in December 2000 and finished it in May 2001. It is in the process of design and permitting the new plant that it began in June 2001 and expects to complete by April 2002. Charleston predicted that construction, startup, and additional permitting activities will take from May 2002 until December 2003. It estimated that the new plant will cost \$8.192 million, including \$96,000 for preliminary design, \$796,000 for design, and \$7.3 million for construction. Future annualized costs are expected to be \$1.6 million including debt service and operating expenses. Pet. at 5-6, 8. Charleston predicted that the turbidity in the water from the new plant will be 0.1 NTU or less 95% of the time, thereby exceeding the new standard. Pet. at 8-9.

During the term of the variance, Charleston proposes to comply with the current turbidity requirement of 0.5 NTU or less 95% of the time at Section 611.250(a)(1) of the Board's regulations. Pet. at 11.

Charleston's new plant will include a new rapid mixer; a pre-sedimentation basin to reduce turbidity; new lime softening contact units for hardness and reduced turbidity; new recarbonation basins for pH adjustment; a new ozone contact basin to control taste, odor, and microbial contaminants; and new granular activated carbon filters to control taste, odor, and turbidity. Pet. at 7-8.

HARDSHIP

Charleston began investigating and implementing a number of strategies to comply with Subsection 611.743(a)(1) of the Board's regulations even before the associated federal regulations were published in late 1998 (*see* below). Charleston tested "process modifications"

such as coagulants, coagulant aids, chemical injection point adjustments, hydraulic loading reductions, and new filters. It also tried diverting stormwater runoff away from the raw water intake and acidifying finished water samples. None of these methods achieved compliance with Subsection 611.743(a)(1). Pet. at 6-7; resp. at 1-2.

Charleston studied other methods to achieve compliance. It considered relocating the water intake to another less turbid part of Lake Charleston, but those areas of the Lake deep enough for an intake pipe are as turbid as the area where the existing intake pipe is located. Charleston also found that increasing the depth of the existing filter beds or raising the filter beds was not plausible. Pet. at 6-7.

Charleston claimed that the only viable option to comply with the turbidity requirements of Subsection 611.743(a)(1) is to build a new plant. Based on the schedule above, Charleston claimed that it would be an arbitrary or unreasonable hardship for it to comply by the December 31, 2001 deadline. Pet. at 7.

The Agency stated that denial of the variance petition would result in an unreasonable and arbitrary hardship. Such hardship would outweigh any injury to the public or the environment if the Board granted the variance. In support of its position, the Agency cited the fact that Charleston will comply with the current turbidity regulations during the term of the requested variance and that Charleston has investigated other options without success. Rec. at 7-8.

ENVIRONMENTAL CONSIDERATIONS

Cryptosporidium is a protozoan associated with the disease cryptosporidiosis. Cryptosporidiosis may cause acute diarrhea, abdominal pain, vomiting, and a fever lasting from 1 to 2 weeks in healthy adults. However, it may be chronic or fatal to immuno-compromised persons. *Giardia* is also a protozoan and is associated with the disease giardiasis. Symptoms include diarrhea, fatigue, and cramps. Both *Cryptosporidium* and *Giardia* can be transmitted in drinking water. U.S. Environmental Protection Agency Office of Water, Water on Tap: A Consumer's Guide to the Nation's Drinking Water Supply (visited November 27, 2001) <<http://www.epa.gov/safewater/wot/appd.html>>.

Charleston stated that the primary reason for stricter turbidity requirements is to reduce the amount of particles in the water which in turn reduces the chance that consumers contract a waterborne disease from microbial contamination, particularly from *Cryptosporidium*. Pet. at 9-10. Charleston analyzed Lake Charleston during January 1999 and detected *Cryptosporidium* but found no *Giardia*. It last analyzed the Lake on May 29, 2001 and detected no *Giardia* or *Cryptosporidium*. As of mid-2001, no *Cryptosporidium* or *Giardia* has ever been detected in the finished water. Charleston claimed that the health risk to its consumers during the requested two-year term of the variance will be minimal. Pet. at 9-10; resp. at 2, exh. B.

The Agency generally agreed, mentioning that Charleston has not had an outbreak of a waterborne disease since its current plant was constructed in 1964 and that the variance should not impose a significant risk to the public or the environment. Rec. at 8.

CONSISTENCY WITH FEDERAL LAWS

The basis for Subsection 611.743(a)(1) of the Board's regulations is the "Interim Enhanced Surface Water Treatment Rule" (IESWTR). *See* 63 Fed. Reg. 69,478 (Dec. 16, 1998); codified at 40 C.F.R. § 141.173 (2000).

Charleston and the Agency agreed that the requested variance may be granted consistent with Section 1412(b)(10) of the Safe Drinking Water Act. 42 U.S.C. Sec. 300g-1(b)(10); pet. at 12; rec. at 8-9. That section provides, in pertinent part:

[A] State . . . may allow up to 2 additional years [beyond the effective date of the regulation] to comply with a . . . treatment technique if the . . . State . . . determines that additional time is necessary for capital improvements.

Both Charleston and the Agency agreed that constructing the new plant is a capital improvement necessary to comply with Subsection 611.743(a)(1) of the Board's regulations. Pet. at 12; rec. at 9.

Illinois has not yet received federal primacy authorization for the IESWTR. The variance thus only provides relief from state turbidity standards.

CONCLUSION

The Board finds that, if the instant variance petition is not granted, Charleston will incur an arbitrary or unreasonable hardship. For this reason, the Board will grant the requested variance, subject to the conditions recommended by the Agency.

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

ORDER

The Board hereby grants petitioner, the City of Charleston, a variance from 35 Ill. Adm. Code 611.743(a)(1) for its existing drinking water treatment plant (plant) in Charleston, Coles County, Illinois, subject to the following conditions:

1. Charleston will take all reasonable measures with existing equipment to minimize the turbidity level in its finished drinking water.
2. Charleston will produce finished water that is 0.3 nephelometric turbidity units (NTU) or lower in at least 34% of the measurements taken each month as specified in 35 Ill. Adm. Code 611.531 and 35 Ill. Adm. Code 611.533.
3. Charleston will continue to comply with the turbidity requirements of 35 Ill. Adm. Code 611.250(a)(1) which requires that the turbidity level of representative

samples to be less than or equal to 0.5 NTU in at least 95% of the measurements taken each month.

- 4. Charleston will provide written progress reports to the Agency's Division of Public Water Supplies, Field Operations Section every three months concerning steps taken to construct the new plant required for compliance with 35 Ill. Adm. Code 611.743(a)(1). The first of these reports shall be due 90 days after the grant of the instant variance which is March 6, 2002.
- 5. This variance will begin on December 31, 2001, and will expire on December 30, 2003.

IT IS SO ORDERED.

If Charleston chooses to accept this variance, within 45 days after the date of this opinion and order, it shall execute and forward to:

Vera Herst
 Division of Legal Counsel
 Illinois Environmental Protection Agency
 1021 North Grand Avenue East
 P.O. Box 19276
 Mail Code #21
 Springfield, Illinois 62794-9276

a certificate of acceptance and agreement to be bound by all the terms and conditions of the granted variance. The 45-day period shall be held in abeyance during any period that this matter is appealed. Failure to execute and forward the certificate within 45 days renders this variance void. The form of the certificate is as follows:

CERTIFICATE OF ACCEPTANCE

The City of Charleston accepts and agrees to be bound by all terms and conditions of the Pollution Control Board's December 6, 2001 order in PCB 02-20.

Petitioner

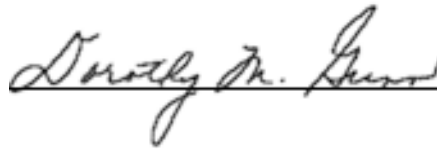
Authorized Agent

Title

Date

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2000); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on December 6, by a vote of 5-0.

A handwritten signature in cursive script that reads "Dorothy M. Gunn". The signature is written in black ink and is positioned above a solid horizontal line.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board