

ILLINOIS POLLUTION CONTROL BOARD
September 26, 1991

COUNTY OF LAKE (VERNON HILLS)
WATER SYSTEM),)
)
Complainant,) PCB 91-88
) (Variance)
vs.)
)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
)
Respondent.)

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board on the May 29, 1991 filing by petitioner, County of Lake ("Lake County"), for the Village of Vernon Hills Water System ("Vernon Hills"), of a petition for variance ("Pet."). Lake County seeks relief from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(a), "Restricted Status", to the extent those rules relate to violation by Vernon Hills' public water supply of the 5 picocuries per liter ("pCi/l") combined radium-226 and radium-228 standards of 35 Ill. Adm. Code Subtitle F¹. Lake County requests a two-year and five-month variance, retroactive to May 31, 1991.

On July 15, 1991, the Illinois Environmental Protection Agency ("Agency") filed its variance recommendation ("Rec."). The Agency recommends that variance be granted subject to certain conditions. Lake County waived hearing and none has been held.

For the following reasons, the Board finds that Lake County has presented adequate proof that immediate compliance with the Board's regulations for "Standards for Issuance" and "Restricted Status" would result in the imposition of an arbitrary or unreasonable hardship. Accordingly, the variance is granted, subject to conditions set forth in the attached Order.

BACKGROUND

¹ The standard for combined radium was formerly found at 35 Ill. Adm. Code 604.301(a); effective September 20, 1990 it was recodified at 35 Ill. Adm. Code 611.330(a).

System Description and Sample Analyses

Lake County solely owns and operates the Vernon Hills Public Water Supply System. It is for this water supply system that variance is sought. The Vernon Hills service system includes potable water supply and distribution for a population of 14,600, including residential, industrial and commercial utility customers. The distribution system currently includes three deep wells (Wells 1, 2, and 3), pumps, and distribution facilities. Three shallow wells are no longer in use, one of which is permanently sealed.

Lake County was first advised that Vernon Hills' water supply exceeded the maximum allowable concentration for combined radium in a letter from the Agency dated December 9, 1985. Subsequent analyses have been conducted, including the most recent analysis reported on or about March 15, 1991. The water samples show the following results:

Sample Description	Collection Date	Lab Code	Concentration (pCi/L)	
			Ra-226	Ra-228
<u>Vernon Hills</u>				
Well No. 1	02-07-91	SPW-441	6.4±0.4	4.2±0.1
Well No. 2	02-07-91	SPW-442	6.4±0.4	5.0±1.7
Well No. 3	02-07-91	SPW-443	3.5±0.2	4.6±1.1
		* * *		

The error given is the probable counting error at the 95% confidence level (Pet. at Exh. B)².

Prior Variances

Lake County has received two prior variances from restricted status due to combined radium exceedences for the Vernon Hills public water supply. These are PCB 86-35 (69 PCB 455, May 9, 1986) and PCB 87-198 (89 PCB 69, May 5, 1988). The second variance term was set to expire May 31, 1992, with an interim deadline providing that variance would terminate on May 31, 1991. The earlier termination date was set contingent upon full compliance by having all installations, changes or additions necessary to bring Lake Michigan water to the Vernon Hills Water

² Information on radiological parameters was also included regarding the Wildwood Subdivision. Lake County has also been a petitioner in separate proceedings on behalf of the Wildwood Subdivision Water Supply.

System operational by May 31, 1991, with other additional conditions.

Lake County states it cannot meet the interim deadline for compliance for the reasons stated below in the compliance plan section of this Opinion.

REGULATORY FRAMEWORK

The instant variance request concerns two features of the Board's public water supply regulations: "Standards for Issuance" and "Restricted Status". These features are found at 35 Ill. Adm. Code 602.105 and 602.106, which in pertinent part read:

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. 111½, pars. 1001 et seq.) (Act), or of this Chapter.

Section 602.106 Restricted Status

- b) The Agency shall publish and make available to the public, at intervals of not more than six months, a comprehensive and up-to-date list of supplies subject to restrictive status and the reasons why.

The principal effect of these regulations is to provide that community water supply systems are prohibited from extending water service, by virtue of not being able to contain the requisite permits, unless and until their water meets all of the standards for finished water supplies.

It is Lake County's request that it be allowed to extend its water service while it pursues compliance with the radium standards, as opposed to extending service only after attaining compliance.

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 (Ill. Rev. Stat. 1989, ch. 111½, par. 1035 (a)). 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), 135 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.

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 676, 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.

It is to be noted that grant of variance from "Standards for Issuance" and Restricted Status" does not absolve a petitioner from compliance with the drinking water standards at issue, nor does it insulate a petitioner from possible enforcement action brought for violation of those standards. The underlying standards remain applicable to the petitioner regardless of whether variance is granted or denied.

Standards for radium and gross alpha particle activity in drinking water were first adopted as national Interim Primary Drinking Water Regulations (NIPDWRs) by the USEPA in 1976. The standards adopted were 5 pCi/l for the sum of the two isotopes of radium, radium-226 and radium-228 ("combined radium"), and 15 pCi/l for gross alpha particle activity. Shortly thereafter Illinois adopted the same limits. Although characterized as "interim" limits, these standards nevertheless are the maximum allowable concentrations under both federal and Illinois law, and will remain so unless modified by the USEPA³.

Over much of the fifteen years since their original promulgation, the current radium and gross alpha particle activity standards have been under review at the federal level. The USEPA first proposed revision of the standards in October 1983 in an Advance Notice of Proposed Rulemaking (48 FR 45502). It later republished this advance notice in September 1986 (51 FR 34836). Most recently, on June 19, 1991, USEPA announced a

³ In anticipation of USEPA revision of the radium standard, the legislature amended the Illinois Environmental Protection Act at Section 17.6 in 1988 to provide that any new federal radium standard immediately supersedes the current Illinois standard. (See also, SB 1296 amend. no. 3, June 20, 1991, awaiting approval by the Governor, which amends Section 17.6 of the Act to specifically refer to Board adoption of federal combined radium-226 and radium-228 and gross alpha particle activity standards by peremptory rulemaking.)

proposal to modify both standards⁴. USEPA proposes to replace the 5 pCi/l combined radium standard by separate standards of 20 pCi/l each for radium-226 and radium-228. The gross alpha particle activity standard is proposed to be replaced by an adjusted gross alpha particle activity standard; the latter would still have a 15 pCi/l value, but would no longer include alpha particle activity associated with radium or uranium decay. Under the USEPA's calendar, these standards are scheduled for promulgation by April 1993 with an effective date of October 1994.

COMPLIANCE PLAN

Lake County intends to achieve compliance by replacing the current Vernon Hills well-based water supply with Lake Michigan water. In 1981, Lake County and several neighboring municipalities began planning to design, construct, and operate a Lake Michigan water transmission system. Special legislation enacted in 1985 permitted Lake County and other municipalities to create the Central Lake County Joint Action Water Agency ("CLCJAWA"). Since that time, Lake County and other municipalities have secured allocations from the State of Illinois to use Lake Michigan water and have entered into contracts for completion of transmission systems to deliver Lake Michigan water (Pet. ¶30-2).

The problem of excessive radium in Vernon Hill's water supply will be eliminated⁵ when CLCJAWA delivers Lake Michigan water beginning in mid-1992, with its full year of operation in 1993. When that occurs, Vernon Hills will cease using its ground water supplies and use Lake Michigan water (Pet. 34).

Lake County reports that compliance has not been achieved by the compliance date required in the PCB 87-198 variance because all installations, changes, or additions to Vernon Hills public water supply were not operational by May 31, 1991, as required by Condition G of the previous variance (PCB 87-198). Lake County states that the activities involved in the project and the construction period for bringing Lake Michigan water to central Lake County communities have exceeded the time period reported to the Board in the previous PCB 87-198 variance. Petition Exhibit A, the construction phase progress report of April, 1991, shows that Lake Michigan water is projected to be available by April, 1992 (Pet. ¶28).

⁴ Publication occurred at 56 FR 33050, July 18, 1991.

⁵ Lake Michigan water does not contain amounts of radium in excess of the standards.

Lake County states that it has complied with other conditions of the prior variance, short of completion of construction and compliance. These include:

1. Submittal to the Agency of the interim public water supply contract signed by all members of the CLCJAWA (Condition D);
2. Reporting to the Agency that CLCJAWA transmission facilities would provide for delivery of sufficient quantities of Lake Michigan Water to assure compliance by Vernon Hills public water supply with the standards for radium (part of Condition E);
3. Participation in applying for and obtaining of two permits for segments of the CLCJAWA water transmission system (Condition F);
4. Participation in applying for two permits (Condition G);
5. Taking reasonable measures to minimize the level of contaminant in its finished drinking water (Condition J);
6. Sending of required notices (Conditions H and I). (Pet. ¶8)

Lake County requests variance from May 31, 1991 to October, 1992 for having all installations, changes, or additions relative to the CLCJAWA Lake Michigan water project constructed and operational, and requests extension to October 1993 to allow the required demonstration of compliance, or when analysis pursuant to 35 Ill. Adm. Code. Subpart F shows compliance with the standards, whichever occurs first (Pet. ¶9).

HARDSHIP

Lake County contends that the hardship resulting from denial of the requested variance outweighs any injury to the public from granting the variance (Pet. ¶45-55). Lake County states that denial of variance would mean that all construction within the Vernon Hills service area would cease⁶. This would harm prospective home purchasers as well as business developers and Lake County's tax base. Lake County asserts that the Vernon

⁶ The Board notes that ongoing construction where water main extensions have already been approved would not cease. It is only that new water mains could not be extended, should variance be denied.

Hills area has nearly one billion dollars of construction currently underway or imminent. Lake County notes four developments specifically, each consisting of between 300 and 1200 acres and including both residential and business development (Pet. ¶¶9 and 52).

Lake County states that should variance be denied, it would be forced to proceed with the design and construction of treatment facilities at its well sites which would likely be abandoned when Lake Michigan is obtained. Also, Lake County adds that the temporary facilities would not even be completed before the time Lake Michigan water would be available (Pet. ¶53).

Lake County further notes the USEPA proposal to revise the regulations for radionuclides (Pet. ¶50).

The Agency agrees that denial of the variance would impose an arbitrary or unreasonable hardship on Lake County (Rec. ¶19, 20).

ENVIRONMENTAL IMPACT

Although Lake County has not undertaken a formal assessment of the environmental effects of its requested variance, it contends that there will be minimal or no adverse impact caused by the granting of the variance (Pet. ¶39). The Agency agrees with Lake County's assertion (Rec. ¶13-16). Both Lake County and the Agency cite and testimony presented by Richard E. Toohey, Ph.D., of Argonne National Laboratory, at the July 30 and August 2, 1985 hearings for the Proposed Amendments to Public Water Supply Regulations (R85-14), 35 Ill. Adm. Code 602.105 and 602.106 in support of the assertion that the variance will not result in any adverse environmental impact (Pet. ¶39; Rec. ¶15).

The Agency also refers to updated testimony presented by Dr. Toohey in the Board's hearing on a variance requested by the City of Braidwood in PCB 89-212 (Rec. ¶15).

While the Agency believes that radiation at any level creates some risk, the risk associated with Lake County's water supply is very low (Rec. ¶14). The Agency states that "an increase in the allowable concentration for the contaminants in question should cause no significant health risk for the limited population served by new water main extensions for the time period of this recommended variance" (Rec. ¶16). In summary, the Agency states:

The Agency believes that the hardship resulting from denial of the recommended variance from the effect of being on Restricted Status would outweigh the injury of the public from grant of the variance. In light of the cost to the Petitioner of treatment of its current water supply, the likelihood of no significant injury

to the public from continuation of the present level of the contaminants in question in the Petitioner's water for the limited time period of the variance, the Agency concludes that denial of a variance from the effects of Restricted Status would impose an arbitrary or unreasonable hardship upon Petitioner.

The Agency observes that this grant of variance from restricted status should affect only those users who consume water drawn from any newly extended water lines. This variance should not affect the status of the rest of Petitioner's population drawing water from existing water lines, except insofar as the variance by its conditions may hasten compliance. In so saying, the Agency emphasizes that it continues to place a high priority on compliance with the standards. (Rec. ¶27-28).

CONSISTENCY WITH FEDERAL LAW

The Agency states that the requested variance may be granted consistent with the Safe Drinking Water Act (42 U.S.C. 300(f)) and corresponding regulations (40 CFR Part 141) because the variance does not grant relief from compliance with the federal primary drinking water regulations (Rec. ¶22).

CONCLUSION

Based upon the record, the Board finds that immediate compliance with the "Standards for Issuance" and "Restricted Status" regulations would impose an arbitrary or unreasonable hardship on Lake County (Vernon Hills water system). The Board also agrees with the parties that granting this variance does not pose a significant health risk to those persons served by any new water main extensions, assuming that compliance is timely forthcoming. The Board further finds that Lake County has shown satisfactory progress toward compliance with the Board's regulations for radionuclides. Hence, the Board will grant this variance for a maximum period of two years and five months, retroactive to May 31, 1991, with the final year being solely for the purpose of testing, subject to certain conditions which could result in an earlier termination of this variance.

The Board notes that timely compliance by Lake County may be affected by pending USEPA action to promulgate new standards for radionuclides in drinking water. New radionuclide standards from USEPA could significantly alter Lake County's need for a variance. In recognition of this situation, as recommended by the Agency, the variance will contain suitable time frames to account for the effects of any USEPA alternation (or notice of refusal to alter) of the radium standards.

Today's action is solely a grant of variance from standards of issuance and restricted status. Lake County is not granted variance from compliance with the combined radium standards, nor does today's action insulate Lake County in any manner against enforcement for violation of these standards.

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

ORDER

Lake County is hereby granted a variance from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(b), "Restricted Status", as they relate to the standards for combined radium-226 and radium-228 in drinking water as set forth in 35 Ill. Adm. Code 611.330(a), for a period of two years and five months from May 31, 1991, subject to the following conditions:

- (A) For purposes of this Order, the date of USEPA action shall consist of the earlier date of the:
 - (1) Date of promulgation by the U.S. Environmental Protection Agency ("USEPA") of any regulation which amends the maximum concentration level for combined radium, either of the isotopes of radium, or the method by which compliance with a radium maximum contaminant level is demonstrated; or
 - (2) Date of publication of notice by the USEPA that no amendments to the 5pCi/l combined radium standard, or the method for demonstrating compliance with the 5pCi/l standard will be promulgated.
- (B) Variance shall terminate on the earliest of the following dates:
 - (1) Two years following the date of USEPA action; or
 - (2) October 31, 1993; or
 - (3) October 31, 1992; absent full compliance with condition (F) below; or
 - (3) When analysis pursuant to 35 Ill. Adm. Code 611 Subpart Q, or any compliance with standards then in effect, shows compliance with standards for radium in drinking water then in effect.
- (C) Compliance shall be achieved with any standards for radium then in effect no later than the date on which this variance terminates.

- (D) In consultation with the Illinois Environmental Protection Agency ("Agency"), Petitioner shall continue its sampling level of radioactivity in its wells and finished water. Until this variance terminates, Petitioner shall collect quarterly samples of its water from its distribution system at locations approved by the Agency. Petitioner shall composite the quarterly samples from each location separately and shall analyze them annually by a laboratory certified by the State of Illinois radiological analysis so as to determine the concentration of combined radium-226 and radium-228. At the option of Petitioner, the quarterly samples may be analyzed when collected. 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

- (E) Within three months after each construction permit is issued by the Agency, Petitioner shall advertise for bids, to be submitted within 60 days, from contractors to do the necessary work described in the construction permit. Petitioner shall accept appropriate bids within a reasonable time. Petitioner shall notify the Agency at the address in paragraph (D) within 30 days of each of the following: (1) advertisement for bids; (2) names of successful bidders; and (3) whether petitioner accepted said bids.
- (F) Construction allowed on said construction permits shall begin within a reasonable time of bids being accepted, but in any case, construction of all installations, changes, or additions necessary to achieve compliance with the maximum allowable concentration of the standards in question shall be completed no later than October 31, 1992, with the final year of variance being solely for the purposes of testing to demonstrate compliance.
- (G) Pursuant to 35 Ill. Adm. Code 611.851(b) (formerly 35 Ill. Adm. Code 606.201), 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 will send to each user of its public water supply a written notice to the effect that Petitioner has been granted by the Pollution Control Board 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 radium standard.

- (H) Pursuant to 35 Ill. Adm. Code 611.851(b) (formerly 35 Ill. Adm. Code 606.201, 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 will send to each user of its public water supply a written notice to the effect that Petitioner is not in compliance with the standard in question. The notice shall state the average content of the contaminants in question in samples taken since the last notice period during which samples were taken.
- (I) Until full compliance is achieved, Petitioner shall take all reasonable measures with its existing equipment to minimize the level combined radium-226 and radium-228 in its finished drinking water.
- (J) Petitioner shall provide written progress reports to the Agency at the address below every six months 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:

Illinois Environmental Protection Agency
Division of Public Water Supply
Field Operations Section
2200 Churchill Road
Springfield, Illinois 52794-9276

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 to all 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 and of no force and effect as a shield against enforcement of rules from which this variance is granted. The form of 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 91-88,
September 26, 1991.

Petitioner

Authorized Agent

Title

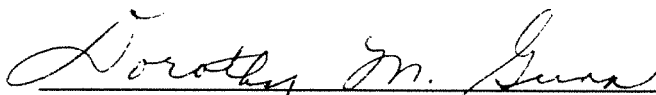
Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1989 ch. 111½ par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

IT IS SO ORDERED.

Board Member B. Forcade dissented. Board Member 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 26th day of September, 1991, by a vote of 6-1.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board