

ILLINOIS POLLUTION CONTROL BOARD

November 4, 1993

VILLAGES OF GRANVILLE & MARK, )  
  )  
                  Petitioner,                  )  
  )  
                  v.                                  )      PCB 93-163  
  )      (Variance)  
ILLINOIS ENVIRONMENTAL                  )  
PROTECTION AGENCY,                  )  
  )  
                  Respondent.                  )

OPINION AND ORDER OF THE BOARD (by M. Nardulli):

This matter is before the Board on the September 1, 1993, filing by petitioners Villages of Granville & Mark (Villages or petitioners) of a petition for variance. The Villages seek 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 the Villages' public water supply of the 5 pCi/l standard for combined radium-226 and radium-228. That standard is set forth at 35 Ill. Adm. Code 611.330(a). The Villages request a variance for five years or until analysis pursuant to 35 Ill. Adm. Code 605.104(a) shows compliance with the standard regulating the contaminant, whichever comes first.

On October 4, 1993, the Illinois Environmental Protection Agency (Agency) filed its variance recommendation. The Agency recommends that the variance be granted, subject to certain conditions. The Villages waived hearing and none was held.

For the following reasons, the Board finds that the Villages have 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

The Villages are municipalities located in Putman County, Illinois. (Pet. at 1.) The Villages provide potable water for residential, commercial, and industrial customers. The total population served by the Villages is approximately 2,080 persons. (Pet. at 4.) The variance would affect the entire populations of both Villages. Petitioners are not part of a regional public water supply.

The petitioners own and operate the distribution systems in question. The Village of Granville owns and operates the wells and the Granville Distribution System. The Village of Mark owns

the and operates the Mark Distribution System. The petitioners maintain the public water distribution system which includes 2 deep wells, pumps and distribution facilities. (Pet. at 4-5.)

If the requested variance is granted, petitioners currently foresee extending their water mains to serve: Migliorini's First Addition to the Village of Mark, containing 2 commercial lots; extension of the water main to remaining 21 lots not served by Village water in Timberline Subdivision to the Village of Mark; water looping in both communities to eliminate periods of low pressure during heavy demand; replacement of water mains in areas experiencing excessive breaks or in areas of small diameter mains; and extension of water main east of Granville along east Silver Spoon Street. (Pet. at 5.)

The Villages were first advised by the Agency that their water supply exceed the permissible level of combined radium on December 19, 1985. Petitioners were subsequently placed on restricted status. The most recent analysis of Granville's waters supply was made on April 29, 1993. This analysis showed a combined radium content of 6.5 pCi/l in well #1, tap 1, an amount that exceeds the 5 pCi/l standards. That analysis was of an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals. Well #2, tap 2, of Granville's water supply showed a combined radium content of 6.1 pCi/l. Because the Village of Mark purchases its water from the Village of Granville, these combined radium levels apply to the drinking water that the Village of Mark supplies to its customers as well. Petitioners are not on restricted status for exceeding any other contaminant. (Ag. Rec. at 4-5.)

#### 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. 111 ½, 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 public water supply systems are prohibited from extending water service, by virtue of not being able to obtain the requisite permits, unless and until their water meets all of the standards for finished water supplies. The Villages' request that they be allowed to extend their water service while they pursue compliance with the combined radium standard, 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. (415 ILCS 5/35(a) (1992).) 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 (1st Dist. 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 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.

A 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 ("article activity"). Shortly thereafter Illinois adopted the same limits. Although characterized as "interim" limits, these standards nevertheless are the maximum

allowable concentrations (MCLs) under both federal and Illinois law, and will remain so unless modified by the USEPA.<sup>1</sup>

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 Fed. Reg. 45502). It later republished this advance notice in September 1986 (51 Fed. Reg. 34836). On June 19, 1991, USEPA announced a proposal to modify both standards.<sup>2</sup> 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 an effective date of October 1994.

#### COMPLIANCE PLAN

Petitioners have considered two approaches for bringing the water supply into compliance. The first option is to use wells not yet drilled for blending purposes. Estimated construction costs, including water mains and controls, are \$100,000.00. The second option is to construct treatment facilities in order to properly treat all water supplied by these wells. Water treatment may consist of ozone treatment or reverse osmosis treatment. Petitioners report a pilot study for ozone treatment has been conducted but the report is not yet complete. Petitioners also report that a pilot study of reverse osmosis treatment could take 24 months to complete. Accurate costs and time figures are not yet available. (Pet. at 7.)

Petitioners report that the first primary method of treatment is lime or lime-soda softening. Gross alpha and radium removal by lime softening can be related to hardness removal and pH of treatment. Lime softening can remove 80-90 percent of the contaminant, therefore, lime softening could be suitable for rawwaters containing up to 25 pCi/l for radium. However, this method produces large quantities of sludge and concentrates the

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<sup>1</sup> 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.

<sup>2</sup> Publication occurred at 56 Fed. Reg. 33050, July 18, 1991.

contaminant. This causes additional problems and expenses in proper waste disposal. (Pet. at 7.)

Petitioners report that the second treatment method is ion exchange water softening. Petitioners state that this method is cheaper than lime softening, is effective and will remove 90% of the contaminant. However, if an ion exchange softener which is regenerated with slat is used, the sodium content of the water will be increased significantly. Petitioners state this may create a significant risk to persons who are hypertensive or have heart problems, even though the treatment would reduce the risk from radium for the general population. In addition, the waste from routine softening is high in total dissolved solids and may be very difficult to dispose of legally. Also, some of the radioactivity remains in the ion exchange material, so that it may be a hazard to anyone subsequently working on the softener, and disposal of the radioactive ion material may be a problem. Hence the Agency has informed petitioners that it is actively discouraging the use of the ion exchange process for radionuclide removal, unless that is the best treatment method available for a particular supply. (Pet. at 8.)

The Agency reports that if petitioners fail to achieve compliance through one or both of the alternative plans, petitioners would have to identify and install necessary treatment technology to bring the facility into compliance. (Ag. Rec. at 7.) Also, the Agency states that its records indicate that the Villages have not previously sought a variance from regulations pertaining to the combined radium limitations. (Ag. Rec. at 4.)

#### HARDSHIP

The Villages contend that the hardship resulting from denial of the requested variance outweighs any injury to the public from granting the variance. (Pet. at 14.) The Villages note that the promulgation of a new radium standard by the United States Environmental Protection Agency (USEPA) may significantly alter the Villages' compliance status and may even obviate the need for a continued variance from Restricted Status. The Agency agrees with this statement noting that USEPA has indicated that the proposed standard will be less stringent than the current standard. (Ag. Rec. at 7.) According to the Villages, "the substantial expenditure of public funds for treatment facilities which may become obsolescent in the near future is not in the public interest and does not grant a corresponding benefit to the public." (Pet. at 13.) The Villages further argue that denial of the requested variance results in an arbitrary and unreasonable hardship because it halts construction and hurts prospective home buyers as well as business developers and the Villages' tax base. (Pet. at 14.)

The Agency agrees that denial of the variance would impose an arbitrary or unreasonable hardship on the Villages. (Ag. Rec. at 8.)

ENVIRONMENTAL IMPACT

Although the Villages have not undertaken a formal assessment of the environmental effects of the requested variance, it contends that there will be minimal or no adverse impact caused by the granting of the variance. (Pet. at 8.) The Agency agrees with the Villages' assertion. (Ag. Rec. at 7-8.) Both the Agency and the Villages cite the 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 and the updated testimony presented by Dr. Toohey in the Board's hearing on a variance requested by the City of Braidwood in PCB 89-212, in support of the assertion that the variance will not result in any adverse environmental impact. (Pet. at 8; Ag. Rec. at 7.)

While the Agency believes that radiation at any level creates some risk, the risk associated with the Villages' water supply is very low. (Ag. Rec. at 6.) 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." (Ag. Rec. at 7-8.) In summary, the Agency states as follows:

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 that variance. In light of 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.<sup>3</sup> In so saying, the Agency emphasizes

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<sup>3</sup> The Board notes that this assertion is incorrect. The requested variance will effect the entire population of the Villages of Granville and Mark. However, the Board believes that

that it continues to place a high priority on compliance with the standards.

(Ag. Rec. at 10.)

#### CONSISTENCY WITH FEDERAL LAW

The Agency states that the requested variance may be granted consistent with the Safe Drinking Water Act (SDWA), PL 93-523, as amended by PL 96-502, 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 regulations. (Ag. Rec. at 9.) The Agency states that granting a variance from the effects of restricted status affects State and not federal law and regulations; a variance from the effect of restricted status would allow water main extensions, under the Act and Board regulations. The Agency further states that the recommended variance is not a variance from USEPA's national primary drinking water regulations and does suspend the effect of the SDWA. The Agency asserts that a federal variance is not at issue, and there should be no risk to the State of Illinois of loss of primacy. The Agency believes that petitioners will remain subject to the possibility of enforcement for violations of the MCL for the contaminants in question under state and federal law. The Agency concludes that because continuing progress is being made towards compliance while awaiting final promulgation of the standard, it is unlikely that USEPA will object to the issuance of the recommended variance.

#### 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 the Villages of Granville and Mark. The Board also agrees with the parties that granting this variance does not pose a significant health risk to those persons served who will be affected by the variance, assuming that compliance is timely forthcoming.

The Board notes that timely compliance by the Villages may be affected by pending USEPA action to promulgate new standards for radionuclides in drinking water. USEPA has recommended a standard of 20 pCi/l for both radium-226 and radium-228. This proposed standard was published on July 18, 1991 (56 Fed. Reg. 33,050 (1991)), and the public hearings on the standard began on September 6, 1991. It is anticipated that the new standard as amended will adopted this year. New radionuclide standards from

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this misstatement is not so significant so as to compel a denial of the variance.

USEPA could significantly alter the Villages' need for a variance or alternatives for achieving compliance. 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 alteration (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. The Villages are not granted variance from compliance with the combined radium standard, nor does today's action insulate the Villages in any manner against enforcement for violation of these standards.

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

#### ORDER

The Villages of Granville and Mark are 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), 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 5 pCi/l combined radium standard or the method for demonstrating compliance with the 5 pCi/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) November 4, 1998; or
  - (3) When analysis pursuant to 35 Ill. Adm. Code 611.720(d), or any compliance with standards then in effect, shows compliance with standards for radium in drinking water then in effect.



- (C) In consultation with the Illinois Environmental Protection Agency ("Agency"), petitioners shall continue their sampling level of radioactivity in their wells and finished water. Until this variance terminates, petitioners shall collect quarterly samples of their water from their distribution system at locations approved by the Agency. Petitioners 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 radium-226 and radium-228. At the option of petitioners, 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

- (D) Within three months of USEPA action, petitioners shall apply to the Agency at the address below for all permits necessary for the construction, installation, changes or additions to petitioners' public water supply needed for achieving compliance with the MCL for combined radium or with any other standard for radium in drinking water then in effect:

Illinois Environmental protection Agency  
Public Water Supply System  
Permit Section  
P.O. Box 19276  
2200 Churchill Road  
Springfield, IL 62794-9276

- (E) Within six months of USEPA action after each construction permit is issued by IEPA, petitioners shall advertise for bids, to be submitted within 60 days, from contractors to do the necessary work described in the construction permit. The petitioners shall accept appropriate bids within a reasonable time. Petitioners shall notify the Agency, Division of Public Water Supplies, within 30 days, of each of the following actions: 1) advertisements for bids, 2) names of the successful bidders, and 3) whenever petitioners accepted the 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 MCL in question shall be completed no later than two years following USEPA action. One year will be necessary to prove compliance.

- (G) Pursuant to 35 Ill. Adm. Code 611.851(b) (formerly 35 Ill. Adm. Code 606.201), in the first set of water bills or within three months after the date of this Order, whichever occurs first, and every three months thereafter, petitioners will send to each user of their public water supply a written notice to the effect that petitioners have 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, petitioners will send to each user of their public water supply a written notice to the effect that petitioners are 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, petitioners shall take all reasonable measures with their existing equipment to minimize the level combined radium-266 and radium-228, in their finished drinking water.
- (J) Petitioners 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 62794-9276

Within forty-five days of the date of this Order, petitioners 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 93-163, November 4, 1993.

\_\_\_\_\_  
Petitioner

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

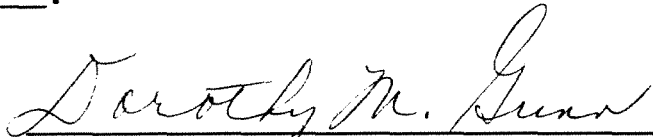
\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Section 41 of the Environmental Protection Act, 415 ILCS 5/41, 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.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 4th day of November, 1993, by a vote of 6-0.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board