

ILLINOIS POLLUTION CONTROL BOARD  
January 5, 1989

CITY OF SPRING VALLEY, )  
 )  
Petitioner, )  
 )  
v. ) PCB 88-181  
 )  
ILLINOIS ENVIRONMENTAL )  
PROTECTION AGENCY, )  
 )  
Respondent. )

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

This matter comes before the Board on a Petition for Variance ("Pet.") filed November 4, 1988 by the City of Spring Valley ("Spring Valley"). Spring Valley seeks variance from 35 Ill. Adm. Code 602.105(a) "Standards For Issuance" and 602.106(b) "Restricted Status" to the extent those rules relate to violation by Spring Valley's public water supply of the 5 picocuries per liter ("pCi/l") combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a) and of the 15 pCi/l gross alpha particle activity standard of 35 Ill. Adm. Code 604.301(b). The variance is requested to extend for a period of three and one-half years from the date variance is granted.

On December 1, 1988, the Illinois Environmental Protection Agency ("Agency") filed a Recommendation ("Rec.") in support of grant of variance subject to conditions. Hearing was waived and none was held.

Based on the record before it, the Board finds that Spring Valley would incur an arbitrary or unreasonable hardship if variance was denied. Accordingly, the variance will be granted, subject to conditions.

BACKGROUND

Spring Valley, which has a population of approximately 5000 residents, is a non-home rule municipality located in Bureau County (Pet. para. 6). Among other services, Spring Valley provides a potable public water supply derived from deep wells and supplied through a distribution system which includes watermains, fire hydrants, 100,000 gallons of elevated storage and 500,000 gallons of above ground storage (Id.). The system provides water to all residential, commercial, industrial, and other users within Spring Valley.

Spring Valley currently draws water from two wells which have the following characteristics (Pet. para. 9):

<u>Well No.</u>	<u>Depth</u>	<u>Placed in Operation</u>	<u>Gallons Per Minute</u>
10	2696 feet	1967	825
11	2723 feet	1976	1536

Spring Valley was first advised of the high radium content in its water supply by letter from the Agency dated December 8, 1986 (Pet. Attachment 2), and was first notified of placement on restricted status by letter from the Agency dated January 8, 1987 (Pet. Attachment 3).

The Agency based its determination on a single composite sample which showed a radium-226 content of 7.0 pCi/l and a radium-228 content of 2.4 pCi/l, for a combined value of 9.4 pCi/l (Pet. Attachment 2). The record does not specifically identify when this sample was collected, other than that it obviously predates the Agency's December 8, 1986 letter. No samples collected later than this single composite sample (see Footnote #2, p. 7) are available to either directly confirm or directly refute the results reported in December 1986.

This sample record notwithstanding, Spring Valley observes that an earlier Agency report of analyses<sup>1</sup> dated December 9, 1985 (Pet. Attachment 1) and a consulting report of October 10, 1988 (Pet. Attachment 4) both suggest a lower radium content than indicated in the Agency's December 8, 1986 letter. In the case of the latter, analyses of Spring Valley's raw water made in connection with a pilot radium-removal program indicated a radium content of 4.6 pCi/l (Id. at 1). Although this result was not derived from samples taken in full conformance with the sampling procedures necessary to demonstrate compliance with the Board's combined radium standard, Spring Valley nevertheless contends that it raises uncertainty as to whether radium concentrations in the Spring Valley water supply actually exceed the 5.0 pCi/l combined radium standard.

Spring Valley states that compliance with the combined radium standard has not yet been achieved because of the confusion relating to what it characterizes as the "conflicting mandates" in the Agency's letters of December 9, 1985 and

<sup>1</sup> The Board notes that although the December 9, 1985 letter states the radium-226 content is 5.2 pCi/l and the radium-228 content is less than 1.0 pCi/l, the letter nevertheless concludes the "combined radium-226 and 228 is below the maximum allowable concentration (MAC) of 5 pico Curies per liter" (Pet., Attachment 1 at 1) and advises Spring Valley that "no further action is required at this time" (Id.).

December 8, 1986 (Pet. para. 15) and because of questions raised by the more recent radium analyses recorded in the pilot study (Id.).

The Board observes that there is no indication in the record of any sample results for gross alpha particle activity.

#### REGULATORY FRAMEWORK

In recognition of a variety of possible health effects occasioned by exposure to radioactivity, the U.S. Environmental Protection Agency has promulgated maximum concentration limits for drinking water of 5 pCi/l of combined radium-226 and radium-228. Illinois subsequently adopted the same limit as the maximum allowable concentration under Illinois law.

The action that Spring Valley requests here is not variance from these two maximum allowable concentrations. Regardless of the action taken by the Board in the instant matter, these standards will remain applicable to Spring Valley. Rather, the action Spring Valley requests is the temporary lifting of prohibitions imposed pursuant to 35 Ill. Adm. Code 602.105 and 602.106. In pertinent part these sections 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. 1981, ch. 111<sup>1</sup>/<sub>2</sub>, pars. 1001 et seq.) (Act), or of this Chapter.

#### Section 602.106 Restricted Status

- a) Restricted status shall be defined by 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.
- 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.
- c) The Agency shall notify the owners or official custodians of supplies when the supply is

initially placed on restricted status by the Agency.

Illinois regulations provide that communities are prohibited from extending water service, by virtue of not being able to obtain the requisite permits, if their water fails to meet any of the several standards for finished water supplies. This provision is a feature of Illinois regulations not found in federal law. It is this prohibition which Spring Valley requests be lifted.

In consideration of any variance, the Board is required to determine whether the petitioner would suffer an arbitrary or unreasonable hardship if required to comply with the Board's regulations at issue (Ill.Rev.Stat.1987, ch. 111 $\frac{1}{2}$ , par. 1035(a)). It is normally not difficult to make a showing that compliance with regulations involves some hardship, since compliance with regulations usually requires some effort and expenditure. However, demonstration of such simple hardship alone is insufficient to allow the Board to find for a petitioner. A petitioner must go further by demonstrating that the hardship resulting from denial of variance would outweigh the injury of the public from a grant of the petition (Caterpillar Tractor Co. v. IPCB (1977), 48 Ill. App. 3d 655, 363 N.E. 2d 419). Only with such showing can hardship rise to the level of arbitrary or unreasonable hardship.

Moreover, a variance by its nature is 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, a variance petitioner is required, as a condition to grant of variance, to commit to a plan which is reasonably calculated to achieved compliance within the term of the variance.

#### HARDSHIP

Spring Valley believes that a requirement to come into immediate compliance would impose an arbitrary or unreasonable hardship. Spring Valley and the Agency both note that by virtue of Spring Valley's inability to receive permits for water main extensions, any economic growth dependent on those water main extensions would not be allowed. Spring Valley notes:

The City of Spring Valley has experienced minimal growth in the past ten years, but has expanded its industrial base somewhat by the development of an industrial park located at the Northwest portion of the City. There has been interest in expansion of that industrial park, which would result in creation of additional jobs and increasing the tax base for the

City of Spring Valley. There has also been recent interest in developing a new residential subdivision in the eastern portion of the City. Both of these expansion activities will require the extension of watermains. Without a variance from the restricted status, growth of the City of Spring Valley is stifled. (Pet. para. 14)

Spring Valley adds that restricted status adversely affects prospective home purchasers as well as commercial and industrial developers and, consequently, Spring Valley's tax base (Pet. para. 32). Lastly, Spring Valley asserts that there is significant need for expansion of its water distribution system to serve the domestic and fire protection requirements of the local population, including expansion of proposed subdivisions (Pet. para. 33).

#### PUBLIC INJURY

Although Spring Valley has not undertaken a formal assessment of the environmental effect of its variance request, it contends that extension of its watermains will not cause any significant harm to the environment or to the people served by the potential watermain extensions (Pet. para. 26, 29). The Agency contends likewise (Rec. para. 16). In support of these contentions, Spring Valley and the Agency reference testimony presented by Richard E. Toohey, Ph.D. and James Stebbins, Ph.D., both of Argonne National Laboratory, at the hearing held on July 30 and August 2, 1985 in R85-14, Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code at 602.105 and 602.106.

The Agency believes that while radiation at any level creates some risk, the risk associated with Spring Valley's water is low. Moreover, the Agency believes that "an incremental increase in the allowable concentration of the contaminants in question even up to a maximum of four times the MAC for the contaminant 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. para. 16; emphasis in original). In conclusion, 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 that 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 contaminant in question in the Petitioner's water for the limited time period of the variance, and the possibility of compliance with the

MAC standard due to use of a manganese greensand potassium permanganate filter, 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 radium standards.

(Rec. para. 26 and 27).

#### COMPLIANCE PROGRAM

Spring Valley proposes initially to resolve the uncertainty regarding radium concentrations in its water supply by conducting additional testing in accordance with Agency procedures (Pet. para. 16). In the event that this testing shows combined radium concentrations in the water supply exceed 5.0 pCi/l, Spring Valley intends to install a manganese greensand potassium permanganate filter on its water supply (Id.). A pilot study on the use and utility of such filter has already been undertaken by Spring Valley (Pet. Attachment 4). This study suggests that the filter is capable of an 85% radium removal efficiency (Id. at 1), which, if achieved under day-to-day operation, would reduce observed combined radium to well below the 5.0 pCi/l standard. Spring Valley estimates that full implementation of the filter system would require 12 to 24 months (Pet. para. 20).

The Agency believes that a properly designed manganese greensand potassium permanganate filtration system should effectively reduce existing radium concentrations by at least 50%, which thereby suggests that it is a suitable technology for achieving compliance (Rec. para. 17).

#### CONCLUSION

The Board finds that, in light of all the facts and circumstances of this case, denial of variance would impose an arbitrary or unreasonable hardship upon Petitioner. The Board also agrees with the parties that no significant health risk will be incurred by persons who are served by any new water main extensions, assuming that compliance is timely forthcoming.

The Board notes that throughout this record there is little reference to gross alpha particle activity in the Spring Valley water system. Moreover, the record contains no indication that the gross alpha particle activity standard has ever been exceeded within the Spring Valley water system. The Board further notes that, whereas Spring Valley at places in its Petition specifically requests variance from restricted status based upon both the combined radium and gross alpha particle parameters (e.g., Pet. Introduction), at other places in its Petition it appears to be requesting variance related only to combined radium (e.g., Pet. para. 2). The Agency itself recommends variance related to both parameters (Rec. p. 1; para. 29), but likewise provides no citation to any violations of the gross alpha particle standard. The Board normally does not grant variance where there has been no demonstration of violation (Willowbrook Motel Partnership v. IEPA, PCB 81-149, 45 PCB 55; The Village of Elk Grove v. IEPA, PCB 84-158, 62 PCB 296; City of West Chicago v. IEPA, PCB 85-2, 64 PCB 251; Village of Minooka v. IEPA, PCB 85-100, 65 PCB 529), and neither Spring Valley nor the Agency have demonstrated that special circumstances in the instant matter warrant departure from this precedent. Accordingly, the grant of variance will be with respect only to the combined radium standard. It should be noted by the parties that if subsequent developments indicate a need for variance related to gross alpha particle activity, such matter may be considered in a future action before this Board.

As a final matter, the Board notes the Agency recommends certain adjustments in the internal dates as requested by Spring Valley (Rec. at para. 28). The internal dates in question concern the times allotted for obtaining sampling results, selection of a method of compliance, and demonstrating compliance. Included among them is the recommendation that the final full year of the variance be reserved for demonstration of compliance<sup>2</sup> and the variance terminate one-year early if Spring Valley is not in position to begin the compliance demonstration at that time. The Board finds the Agency's recommendations on these issues to be well founded, and therefore will condition the grant of variance in accordance with these conditions, as well as with other conditions consistent with this Opinion and with the Illinois Environmental Protection Act.

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

<sup>2</sup> The Board notes that demonstration of compliance sufficient to be removed from restricted status requires collection of samples over a period of at least four consecutive calendar quarters. Thus, demonstration of compliance may significantly postdate attainment of contaminant concentrations at below-standard values.

ORDER

1. Petitioner, the City of Spring Valley, is hereby granted variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and 602.106(b), Restricted Status, but only as they relate to the 5 pCi/l combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a), subject to the following conditions:

(A) This variance expires on June 15, 1992, or when analysis pursuant to 35 Ill. Adm. Code 601.104(a) shows compliance with 35 Ill. Adm. Code 604.301(a), whichever is sooner; except that if Petitioner fails to begin operating all installations, changes, or additions necessary to achieve compliance by June 16, 1991, this variance shall expire on that date.

(B) Compliance with the maximum allowable concentrations of combined radium-226 and radium-228 shall be demonstrated no later than June 15, 1992.

(C) On or before May 15, 1989, Petitioner shall submit to the Agency an Interim Compliance Report, which shall briefly describe what compliance options are being investigated and review what financial resources are being considered for use in achieving compliance. Such report shall be submitted to:

Illinois Environmental Protection Agency  
Division of Public Water Supply  
Field Operations Section  
2200 Churchill Road  
Springfield, Illinois 62708

(D) On or before August 15, 1989, Petitioner shall submit to the Agency at the address in condition (C), a detailed Compliance Plan which shall show how compliance will be achieved within the shortest practicable time.

(E) On or before January 1, 1990, unless there has been a written extension by the Agency, Petitioner shall apply to the Agency for all permits necessary for construction of installations, changes or additions to Petitioner's public water supply needed for achieving compliance with the maximum allowable concentration for the combined radium standard. Such applications shall be made to:

Illinois Environmental Protection Agency  
Division of Public Water Supply  
Permit Section  
2200 Churchill Road  
Springfield, Illinois 62708

- (F) Within one month 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 condition (C) of each of the following actions: 1) advertisement for bids, 2) names of successful bidders, and 3) whether Petitioner accepted the bids.
- (G) 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 combined radium shall begin no later than July 15, 1990 and shall be completed on later than July 15, 1991.
- (H) In consultation with the Agency, Petitioner shall continue its sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Until this variance terminates, Petitioner shall sample its water from its distribution system at locations approved by the Agency. Petitioner shall composite the quarterly samples for each location separately and shall have them analyzed by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of the two parameters, radium-226 and radium-228. Within 30 days of the receipt of each analysis results of the analyses shall be reported to:
- Illinois Environmental Protection Agency  
Compliance Assurance Section  
Division of Public Water Supplies  
P.O. Box 19276  
2200 Churchill Road  
Springfield, Illinois 62794-9276
- (I) Pursuant to 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 shall 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(b) Restricted Status, as they relate to the combined radium-226 and radium-228 standard.

- (J) Pursuant to 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 shall send to each user of its public water supply a written notice to the effect that Petitioner is not in compliance with the combined radium-226 and radium-228 standard. The notice shall state the average content of the contaminant in question in samples taken since the last notice period during which samples were taken.
  - (K) Until full compliance is reached, Petitioner shall take all reasonable measures with its existing equipment to minimize the level of combined radium in its finished drinking water.
  - (I) Petitioner shall provide written progress reports to the Agency at the address in condition (C) every three months concerning steps taken to comply with the Order of the Pollution Control Board in this matter. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph.
- 2) Within 45 days of the date of this Order, Petitioner shall execute and forward to Bobella Glatz, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Post Office Box 19276, Springfield, Illinois 62794-9276, a Certification of Acceptance and Agreement to be bound to all terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being 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 variance was granted. The form of said Certification shall be as follows:

CERTIFICATION

I (We), \_\_\_\_\_, hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 88-181, January 5, 1989.

\_\_\_\_\_  
Petitioner

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 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 Members Jacob D. Dumelle and Bill Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 5<sup>th</sup> day of January, 1989, by a vote of 5-2.

Dorothy M. Gunn  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board