

ILLINOIS POLLUTION CONTROL BOARD
September 19, 1996

CITY OF DEKALB,)	
)	
Petitioner,)	
)	
v.)	PCB 96-246
)	(Variance - Public Water Supply)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

RONALD G. METEKAITIS APPEAR ON BEHALF OF PETITIONER;

STEPHEN E. EWART APPEARED ON BEHALF OF RESPONDENT.

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

The City of DeKalb (DeKalb) filed a petition for variance on June 3, 1996, seeking an extension of variance from the requirements of "Standards for Issuance" and "Restricted Status" as they relate to the maximum contaminant level (MCL) for combined radium in its drinking water supply. (35 Ill. Adm. Code 602.105(a), 602.106(b) (1994).) In the prior variance, the Board granted DeKalb relief from the requirements of "Standards for Issuance" and "Restricted Status" to the extent those rules involve 35 Ill. Adm. Code 611.330(a), which establishes an MCL of 5.0 picocuries per liter (pCi/L) for combined radium-226 and radium-228. (*City of DeKalb v. IEPA*, (June 20, 1991) PCB 91-34, 123 PCB 593.) DeKalb's prior variance expired June 20, 1996.

DeKalb now seeks to extend that variance until the earliest of the following five dates: (1) three years following the effective date of any regulation promulgated by the United States Environmental Protection Agency (USEPA) which amends the MCL for combined radium; (2) when analysis pursuant to 35 Ill. Adm. Code 611.720, or any compliance demonstration method then in effect, shows compliance with combined radium standards then in effect; (3) three years following USEPA publication of notice that no amendments of the 5.0 pCi/L combined radium standard will be promulgated; or (4) five years from the date of any grant of its request for extension of variance. (Pet. at 1-2.)

For the reasons set forth below, the Board finds that DeKalb has presented adequate proof that immediate compliance with the Board's regulations for "Standards for Issuance" and "Restricted Status" would impose an arbitrary or unreasonable hardship. In addition, the Board finds that DeKalb has made satisfactory progress towards achieving compliance during the term of its prior variance. Accordingly, the request for an extension of variance from the Board's standard for combined radium is granted, beginning on the date of this opinion and subject to the conditions set forth in the attached order.

The Board's responsibility in this matter arises from the Illinois Environmental Protection Act (Act). (415 ILCS 5/1 *et seq.* (1994).) The Board is charged therein with the responsibility of granting variance from Board regulations whenever it is found that immediate compliance with the regulations would impose an arbitrary or unreasonable hardship upon the petitioner. (415 ILCS 5/35(a).) A request for extension of variance may be extended from year to year upon a showing of satisfactory progress during the prior variance. (415 ILCS 5/36(b).) The Agency is required to appear at hearings on variance petitions (415 ILCS 5/4(f)), and is charged, among other things, 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).)

PROCEDURAL HISTORY

On July 18, 1996 the Illinois Environmental Protection Agency (Agency) filed a Motion to File Recommendation Instanter and its Recommendation for Variance. By affidavit the Agency asserts that it received DeKalb's petition on June 14, 1996 and could not complete the technical review of the variance extension by July 14, 1996; therefore, the Agency requests leave to file its recommendation four days late. The Board hereby grants the Agency's motion to file its recommendation instanter and accepts its recommendation. The Agency recommends that DeKalb's request for extension of variance be granted, subject to certain conditions which are explained later in this opinion.

Between July 17, 1996 and July 22, 1996 the Board received three motions to intervene by various DeKalb residents. On July 29, 1996 DeKalb filed a Motion for an Expedited Decision. In its August 1, 1996 order the Board denied the motions to intervene and granted the motion for expedited decision subject to timely receipt of transcripts and post-hearing briefs, and as Board resources would allow.

In its petition for variance, DeKalb waived the hearing requirement in this matter. However, on June 10, 1996 the Board received a letter of objection and request for hearing from DeKalb resident Dorianne Burg. Eight letters of objection and requests for hearing were subsequently received. Consequently, and pursuant to 35 Ill. Adm. Code 104.160(c)(2), a hearing was held before Hearing Officer Deb Frank on August 5, 1996 in DeKalb, Illinois. Dozens of members of the public attended, 19 of whom delivered public comments. In addition, after the hearing, the Board received 11 additional public comments.¹ Finally, the Agency filed its post-hearing brief on August 20, 1996 and DeKalb filed its post-hearing brief on August 22, 1996.²

BACKGROUND

¹ Public comments were assigned numbers in the chronological order in which they were received by the Board. Public comments will be cited to as (P.C. #__.)

² DeKalb's Petition for Extension of Variance will be cited as (Pet. at __); the Agency's Recommendation will be cited as (Rec. at __.); the hearing transcript will be cited as (Tr. at __.); DeKalb's post-hearing brief will be cited as (DeKalb Br. at __.); and, the Agency's post-hearing brief will be cited as (Agency Br. at __.).

DeKalb, located in DeKalb County, Illinois, is a municipality that provides a potable water supply and distribution system to a population of approximately 35,076. The population served consists of 7,494 residential customers, 659 commercial and industrial users, 53 users at Northern Illinois University and 93 miscellaneous utility customers. (Pet. at 4.)

DeKalb's water supply and distribution system consists of nine sandstone aquifer wells, four elevated storage tanks totaling 5.75 million gallons, and ninety miles of distribution facilities. Water is provided to all residential, commercial and industrial users, as needed, and charges are made to all users, as established by ordinance. In 1995 water was pumped at an average of 4.05 million gallons per day. The materials used are raw water, polyphosphates for iron sequestration, fluoride for tooth care and chlorine for disinfecting. DeKalb is not part of a regional public water supply. (Pet. at 4-5.)

DeKalb is requesting an extension of its prior variance to allow for expansion or extension of its water supply and distribution system. The most recent analyses of its water supply was completed at the following locations:

Tap 1, Well 4: Combined radium content of 12.0 pCi/L taken 11/15/95;

Tap 2, Well 6: Combined radium content of 13.7 pCi/L taken 1/3/96;

Tap 3, Well 7: Combined radium content of 6.0 pCi/L taken 9/13/95;

Tap 4, Well 8: Combined radium content of 7.2 pCi/L taken 11/15/95;

Tap 6, Well 10: Combined radium content of 9.1 pCi/L taken 1/3/96;

Tap 7, Well 11: Combined radium content of 5.1 pCi/L taken 11/15/95;

Tap 8, Well 12: Combined radium content of 5.8 pCi/L taken 5/9/96;

Tap 9, Well 13: Combined radium content of 10.9 pCi/L taken 11/15/95.

The results were obtained from analyses of composite samples compiled over four consecutive quarterly samples. DeKalb's water system currently draws water from its wells at night and stores it in four elevated storage tanks prior to distribution during daytime hours. (Tr. at 23.) Although radium testing was not drawn from the storage tanks, DeKalb calculated a weighted average consumption of combined radium, which was 7.3 pCi/L for 1995. (Tr. at 23-24, 29-30.) The levels currently exceed the 5.0 pCi/L combined standard for radium-226 and radium-228. DeKalb is not listed on restricted status for exceeding any other contaminant. (Pet. at 4-9.)

REGULATORY FRAMEWORK

In determining whether any variance is to be granted, the Act requires the Board to ascertain 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).) Furthermore, the burden is upon 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, 135 Ill.App.3d 343, 481 N.E.2d 1032 (1st Dist. 1977).) Only with such showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship.

A variance, by its very nature, is a temporary reprieve from compliance with the Board's regulations, and compliance is to be pursued regardless of the hardship which eventual compliance presents an individual petitioner. (Monsanto Co. v. Pollution Control Board, 67 Ill.2d 276, 367 N.E.2d 684 (1977).) Accordingly, as a condition to the granting of variance, a variance petitioner is required to commit to a plan which is reasonably designed to achieve compliance within the term of the variance, unless certain special circumstances exist. A request for extension of a variance can be granted on a year to year basis, but only upon a showing of substantial progress towards achieving compliance. (415 ILCS 36(b).)

The action that DeKalb requests is not a variance from the MCL of 5.0 pCi/L for combined radium. The radium standard will remain applicable to DeKalb's water supply irrespective of the action taken by the Board in this matter. Rather, 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, respectively, and 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...or of this chapter.

(35 Ill. Adm. Code 602.105.)

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.
- 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.

(35 Ill. Adm. Code 602.106.)

The principal effect of these regulations is that public water suppliers are prohibited from extending water service due to their inability to obtain the requisite permits, unless and

until their water meets all the standards for finished water supplies. A grant of variance from “Standards for Issuance” and “Restricted Status” neither absolves a petitioner from compliance with the drinking water standards at issue, nor insulates a petitioner from possible enforcement actions for violation of those standards. The underlying standards remain applicable to the petitioner regardless of whether the variance is granted or denied.

Standards for combined radium in drinking water were first adopted as National Interim Primary Drinking Water Regulations by the United States Environmental Protection Agency (USEPA) in 1976. The standard adopted was 5.0 pCi/L for the sum of two isotopes of radium: radium-226 and radium-228 (“combined radium”). Shortly thereafter Illinois adopted the same limits. Although characterized as “interim” limits, these standards nevertheless are the MCLs under both federal and Illinois law, and will remain so unless modified by the USEPA. In anticipation of USEPA’s revision of the radium standard, the Illinois legislature amended the Act at Section 17.6 in 1988 to provide that any new federal radium standard will immediately supersede the current Illinois standard. The state standard is therefore inexorably tied to the federal standard, and cannot be greater than or less than the federal limit.

Since their original promulgation, the current radium standards have been under review at the federal level. The USEPA has been evaluating the interim radium standards pursuant to Sections 1412(b)(1)(B) and 1412(b)(2) of the Safe Drinking Water Act that require USEPA to propose and promulgate the National Revised Primary Drinking Water Regulations. On October 5, 1983 USEPA announced its intention of revising the interim radionuclides standards in an Advanced Notice of Proposed Rulemaking (ANPR) (48 Fed.Reg. 45502). In that notice, USEPA stated that it would perform a comprehensive reassessment of the interim standards in order to optimize public health protection without unnecessary economic burdens on states and communities. It later republished this ANPR in September 1986, establishing MCL goals for radionuclides and providing information related to establishing MCLs for radionuclides (51 Fed.Reg. 34836).

On July 18, 1991 the USEPA published a rulemaking proposal which included a revision of the interim standards for radium-226 and radium-228 (56 Fed.Reg. 33050). USEPA proposes to replace the 5.0 pCi/L combined radium standard with separate MCLs of 20.0 pCi/L each for radium-226 and radium-228. In proposing the revised MCLs, USEPA gave consideration to available technologies and associated costs, analytical capabilities and health risks associated with the contaminants. USEPA determined that alternatives at the 10^{-4} lifetime risk level, approximately 20.0 pCi/L for both radium-226 and radium-228, are protective to human health. As such the USEPA concluded that it was not cost effective to set MCLs for radium at the technically feasible level of 5.0 pCi/L.

This change in the radium standard was to be promulgated by April 1995, but the deadline was later extended to September 1995. However, Congress prohibited funds for the promulgation of final radionuclide standards for fiscal year 1994 and 1995. Mr. Joseph Harrison, Chief of the Safe Drinking Water Division, USEPA Region V, announced that in light of the projected proposal for the relaxed standard, the USEPA would not force any

municipality to spend funds to comply with the federal combined standard. At hearing, Tracey Virgin reported that the Agency expects a decision as to specific final regulation action to be announced by USEPA in October 1996. (Tr. at 133.)

COMPLIANCE PLAN

Past Compliance Efforts

On December 26, 1990 the Agency notified DeKalb that its water supply system had been placed on Restricted Status List for exceeding the MCL for combined radium. (Rec. at 7.) DeKalb petitioned for, and was granted a variance from 35 Ill. Adm. Code 602.105(a), Standards for Issuance, and 602.106(b), Restricted Status, to the extent those rules apply to combined radium-226 and radium-228. (City of DeKalb v. IEPA (June 20, 1991), PCB 91-34, 123 PCB 593.) DeKalb states that, during the five-year period of its variance, it followed the directives set forth in the Board's June 20, 1991 order. Specifically, DeKalb continued its sampling program of collecting quarterly water samples from each well, having them analyzed and submitting the results to the Agency. (Tr. at 37.) DeKalb also created an Ad Hoc Water Quality Advisory Committee and hired the engineering consulting firm of Baxter & Woodman to evaluate alternatives methods to achieve compliance. (Tr. at 37, 41.) DeKalb attempted to minimize the levels of combined radium by reducing the water volumes from the two wells with the highest concentrations of radium, thereby reducing the weighted average consumption of radium by DeKalb's customers. (Tr. at 21.) In addition, DeKalb notified its users of its noncompliance with the radium standard by including a notice with its monthly water bills. (Tr. at 40.) The notice language was drafted pursuant to Agency directive. (Tr. at 328.)

The Board's order also required DeKalb to submit written progress reports to the Agency every six months until compliance is achieved. DeKalb states that it complied with this directive through June 1992, but failed to submit any more reports until August 1996, when Ronald Naylor, director of public works, submitted a four-year summary progress report to the Agency. (Tr. at 44-45.) Finally, DeKalb states that, as directed by the Board's 1991 order, it has investigated options for reducing the amount of radium in its water supply. (Rec. at 7.) DeKalb reports that, at a cost of \$30,000, two primary options were identified:

(a) Blending: Developing shallow wells from sand and gravel or limestone aquifers for blending and diluting purposes. (Pet. at 16.) DeKalb found that the best location for developing shallow wells is west of DeKalb, near the Village of Malta in the buried Troy Bedrock Valley. (Id.) DeKalb estimates a 3-year construction timetable for acquiring rights to develop wells and actual construction of the wells, and calculates the total cost to be between \$6.8 and \$12 million because blending will have to occur at each of the system's nine water supply points. (Tr. at 63-66.)

(b) Ion Exchange Treatment: a water softening treatment that can effectively remove more than 90% of the radium but creates an iron sludge which will have to be disposed by connecting to the DeKalb Sanitary District system at a cost of \$10,000 to

\$15,000 per year. (Tr. at 59, 66.) DeKalb is not confident that the DeKalb Sanitary District would allow iron sludge to be disposed in the sewage system. (Pet. at 8.)

Future Compliance Plans

DeKalb proposes to take certain steps toward achieving compliance during the extended term of its variance. DeKalb will continue to consult with the engineering firm of Baxter & Woodman, Inc., and will continue to work with its Ad Hoc Water Quality Advisory Committee to consider alternative compliance options. In consultation with the Agency, DeKalb will continue its sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Every three months, DeKalb will notify its water supply customers of its noncompliance with the combined radium standard, its most current radium level, and that it has received a variance from the requirements of 35 Ill. Adm. Code 602.105(a) "Standards for Issuance" and 602.106(b) "Restricted Status". DeKalb states that since implementing a checks and balances system between the water superintendent and the city's engineer, it can assure timely submission of progress reports to the Agency every six months during the extended term of the variance. (Tr. at 46.).

DeKalb points to the uncertain status of the federal standard for combined radium, and to the USEPA's position of not enforcing the current standard as long as the water supplier makes satisfactory progress towards achieving compliance, in stating that the most appropriate course of action is to seek an extension of its variance that is linked to the adoption or non-adoption of revised radium standards. (Pet. at 13.) DeKalb believes that such a variance would relieve it from expending significant funds to design and construct facilities which may either be over-designed or unnecessary by the time they are completed. (Id.) DeKalb states that it is willing to commit to all actions short of final design and construction of appropriate facilities until a final decision is made regarding radium standards. (Id.)

ARBITRARY OR UNREASONABLE HARDSHIP

DeKalb states that denial of its request for an extension of variance would pose an arbitrary or unreasonable hardship because significant development would be delayed or precluded. (Pet. at 17.) During the term of its prior variance, DeKalb experienced notable economic growth which required the installation of 90,000 feet of water mains to serve new developments and improve fire flows in the community. (Id.) DeKalb anticipates further growth in the next few years and listed 37 planned or ongoing projects which would be seriously affected if an extension of variance is denied. (Id. at 18.) Mark Bernaci, director of DeKalb's department of planning and development, stated at hearing that approximately 805 dwellings will be constructed which represents an estimated 2,265 new customers to be served. (Tr. at 91-92.) In addition, the city estimates 850,000 square feet of new development, and 990,000 square feet of new industrial development during the term of the extended variance. (Tr. at 95.)

Mr. Bernaci further explained the fiscal impact of these new developments:

“Property tax to the area’s local governmental agencies would amount to \$3.65 million annually, again, to all taxing districts, of which \$240,000 would accrue to the City of DeKalb. Sales tax revenues would amount to \$3.2 million annually of which \$2.8 million would accrue to the City of DeKalb, and the balance to the DeKalb County government. And then third, utility tax would amount to \$140,000 annually to the City of DeKalb.”

(Id.) Mr. Bernaci asserted that these planned and ongoing developments have a significant economic impact as well. DeKalb will experience approximately \$135 million of new construction value, hundreds of construction jobs, roughly \$160 million in gross annual retail sales activity and about 2,200 permanent jobs employed by the proposed new commercial and industrial development. (Tr. at 96-97.) Mr. Bernaci indicated that these numbers are conservative in that many developments did not provide him with statistics to analyze. (Id.)

In light of these statistics, DeKalb states that denial of its requested extension of variance would be an arbitrary or unreasonable hardship because it would require the Agency to place DeKalb on restricted status. Placing DeKalb on restricted status would require the Agency to reject construction and operating permits until compliance with the standards is achieved, which in turn means that no new water main extensions could be constructed, and further development would be obstructed. (Pet. at 13-14.)

ENVIRONMENTAL IMPACT

At hearing DeKalb introduced Dr. Robert Rowland as its expert on the health effects of radium. Dr. Rowland received a Ph.D. in radiation biology and has worked from 1950 to the present at Argonne National Laboratory studying the effects of ingested radium in human beings. (Tr. at 99-101, Pet. Exhibit 12.) Dr. Rowland explained that radium, a daughter of uranium 238, is uniformly distributed throughout the environment; in fact, one ounce of garden soil can contain about 21.0 picocuries of radium. (Tr. at 102-103.) Since we grow our food from soil, all food stuffs, including meat from grazing farm animals, contain radium. For example, one Brazil nut contains nearly 1,000 picocuries per gram. In short, Dr. Rowland states that radium “is truly with us at all times in all ways”. Regarding radium’s presence in water, Dr. Rowland stated that radium leaches into aquifers from the rocks below, and is uniformly present in those aquifers from year to year. (Tr. at 105-106.)

Dr. Rowland asserted that he is familiar with a number of models employed to determine the health risks associated with radium in drinking water, including the linear nonthreshold model used by the USEPA which appeared in the July 18, 1991 Federal Register along with the proposed radium levels of 20.0 pCi/L for each isotope. Dr. Rowland believes this model to be invalid, despite the 1991 modification which acknowledged that radium does not induce leukemia, and which approximated what effects are seen at very low levels of intake. (Tr. at 107-108.) When asked to apply the model to DeKalb’s variance request, Dr. Rowland took the estimated number of new water customers (2,265) and the daily weighted average for combined radium (7.3 pCi/L), and over a five-year period, calculated a risk of 0.006 radium-induced malignancies per year in the population served by DeKalb. (Tr. at

108.) Dr. Rowland stated that since malignancies occur in integers, he believes the best number to be zero. (Tr. at 109.)

Dr. Rowland further testified that he developed his own analysis from the radium studies at Argonne which rejects the linear nonthreshold model, or other models dependent upon the amount of radium intake. Dr. Rowland believes that a threshold exists, below which no radium-induced malignancies will occur, above which there exists an increased chance of developing a radium-induced malignancy. Dr. Rowland explained that Argonne studied 2,238 people who acquired radium in a variety of ways, including: chemists who extracted radium from raw materials; patients who received intravenous injections of radium to treat various illnesses; and women who painted radium on items for a glow-in-the-dark effect. From studying these people, Dr. Rowland determined that no one who ingested less than 500 microcuries of radium developed a radium-induced malignancy, and that many malignancies were observed in those who ingested more than 500 microcuries of radium. (Tr. at 112-113.) Dr. Rowland explained that one microcurie equals one million picocuries. (Tr. at 113.) Based on this model, Dr. Rowland testified that the risk associated with 7.3 picocuries in DeKalb's drinking water is zero. (Tr. at 114.)

In its recommendation, the Agency stated its belief that granting the requested variance extension would impose no significant injury to the public or the environment. (Rec. at 13.) The Agency asserts that the proposed variance should cause no significant health risk for the population served by any new water main extensions for the time period of the recommended variance. (*Id.*) At hearing the Agency presented Tracey Virgin, toxicologist for the Agency, who testified that USEPA derived its linear nonthreshold limit of 5.0 pCi/L as an initial standard from combined human and animal studies. (Tr. at 127.) Ms. Virgin stated that these findings turned out to be flawed; thereafter, USEPA reanalyzed their data and set a new standard of 20.0 pCi/L each for radium-226 and radium-228. (Tr. at 128.) Ms. Virgin testified that USEPA indicated that a time frame for the promulgation of the new radium standard would be available October 21, 1996. (Tr. at 133.)

Both parties referred the Board to testimony presented by Richard E. Toohey, Ph.D., of Argonne National Laboratory, at hearing held on July 30 and August 2, 1985 in R85-14, Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code 602.105 and 602.106.

CONSISTENCY WITH FEDERAL LAW

The parties believe the Board can grant the requested variance consistent with the Safe Drinking Water Act, PL 93-523, as amended by PL 96-502, 42 U.S.C. 300(f) and the USEPA drinking water regulations (40 CFR 141 (1993)). The requested variance, which would allow construction of water main extensions, would not be a variance from federal drinking water regulations, but only a variance from the state's regulations regarding Restricted Status. Since only state criteria are relevant in this request for variance, there is no federal law with which the USEPA needs to be concerned. The parties point out that granting the variance will not insulate DeKalb from possible enforcement actions for violations of the radium standards;

however, the USEPA has indicated that it will not intervene in variances which trigger final design and construction of compliance equipment by the date on which USEPA revises the MCL for radium set forth at 40 CFR 141.15(a). (Pet. at 24, Rec. at 14-15.)

PUBLIC COMMENTS

After the Agency published notice of DeKalb's request for extension of variance on June 25, 1996 in The Daily Chronicle, the Board received fourteen public comments at hearing and nine public comments by mail. All public comments oppose a granting of the extension of variance because DeKalb's radium levels exceed the federal standard and commenters believe the radium levels pose a serious health risk to DeKalb citizens. Below is a synopsis of each public comment received.

Public Comments Entered at Hearing

1. Judson Hite, Altheimer & Gray, on behalf of Citizen's Advocacy Network (CAN), stated that DeKalb citizens were not only denied intervention in this proceeding, but also feel cut off from and uninformed by the City of DeKalb. Mr. Hite stated that DeKalb knew in 1979 that its radium levels did not comply and the citizenry wants a compliance schedule that the city will follow. DeKalb failed to comply with 7 of 12 requirements in the 1991 order. The amount spent on compliance efforts is paltry and there is no evidence that DeKalb sought alternative funding sources. (Tr. at 139-149.)

2. Dorianne Burg reported DeKalb County statistics which reported 9 bone cancers in females ages 5-14 from 1987 to 1991. Ms. Burg stated that 5.0 pCi/L was the combined radium standard and it has never changed, and noted that that Illinois has a 1.0 pCi/L radium standard for wildlife, and requested that the standard for children be set at the same level.³ Ms. Burg warned that DeKalb is in jeopardy of being sued for violating the standard. Ms. Burg stated that the notice date and comment period were not sufficient in this case. (Tr. at 150-161, 319-322.)

3. Jessica Brown urged the Board "to keep the water good". (Tr. at 189.)

4. Linda Lahey stated that on the back of its water bills, DeKalb acknowledges that ingesting 5.0 pCi/L may result in bone cancer in a small portion of the population. Ms. Lahey explained how radium is processed in the human body. Ms. Lahey compared the federal standards of radium levels with the levels found in DeKalb's water and concluded that DeKalb's water supply is unsafe because its radium levels exceed the standard. Ms. Lahey contended that granting an extension of variance would increase the health risks to DeKalb citizens. (Tr. at 191-199.)

³ Illinois only regulates radium in drinking water supplies, that is, water treated for human consumption. Neither the Act nor Board regulations provide a radium standard for other state waters.

5. Dr. Terry D. Sandman, practicing board-certified radiologist, presented evidence showing the difference in health risks associated with low level exposure versus high level exposure to radium. Dr. Sandman discussed the different kinds of cancer that may occur at different levels of exposure to radium, and the types of factors, such as age, that are considered. Dr. Sandman maintained that acceptable exposure levels of radium are based on speculation as to the “does-response” curve in the low-dose region; therefore there is too much potential for error in determining the dose risk in drinking water studies. (Tr. at 205-246.)

6. Mike Brown stated that DeKalb and the Agency seem to support each other’s case. Mr. Brown pointed to the Argonne study which revealed that of three family members who ingested radium water as a medical treatment, the youngest developed bone cancer, to conclude that children are more sensitive to radium. Mr. Brown estimated that many in DeKalb drink bottled water. (Tr. at 150-152.)

7. Militsa Samardzija stated that data can be manipulated to suit anyone’ agenda, and that the hearing was more about power and money [than DeKalb’s water supply] because it is an election year. Ms. Samardzija stated that DeKalb’s citizens do not want DeKalb to pass the blame to USEPA, or seek another variance, and asks why the city’s manager has bottled water in his office. (Tr. at 253-256.)

8. Diana Strauss stated that not everyone in DeKalb is at equal risk, that children are at greater risk because of long-term exposure and because radium acts like calcium and settles in the bone. Ms. Strauss states that housing developers should be patient. Ms. Strauss expressed dissatisfaction with the mentality that radium standards are too stringent and will eventually be relaxed, as a rational to act as if they are already relaxed. (Tr. at 257-260.)

9. Shawn Brown questioned the conclusion that a standard of 40 pCi/L for combined radium is acceptable when there are no conclusive studies of the effects of radium on children or elderly. Mr. Brown was discouraged that the hearing excluded citizens from asking questions to promote understanding of government motivations in this proceeding. Mr. Brown stated that, by speaking, he put himself at risk of being discredited by attorneys without being able to ask pertinent questions of panelists in agreement with each other. Mr. Brown stated that this lack of opportunity to ask questions fuels his suspicions. (Tr. at 262-265.)

10. Julie Dubicz stated that she is a new resident to DeKalb with three young children, and does not allow them to drink DeKalb water. Ms. Dubicz reported that her family used two to three gallons of bottled water a day which, at \$3 per gallon, represents a drain on the family pocketbook. Ms. Dubicz also expressed disappointment that DeKalb citizens are being ignored.

11. Jeff Houghtby questioned how, given this country’s unsurpassed wealth, technology, and ability to communicate instantly, the level of a known carcinogen could be increased. Mr. Houghtby stated that eroding standards is a disservice, and if both sides have conflicting studies, one should err on the side of caution. Mr. Houghtby, as a member of CAN, learned that the city of DeKalb offers economic development grants to Fortune 500 companies: for

example, Wal-Mart was given \$500,000 to move across the street from its original location, and \$2.4 million was given to a car dealership to relocate to the city of DeKalb. Mr. Houghtby also reported that DeKalb has a high bond rate, and stated that if DeKalb is not financially strapped, it can fix its water problem instead of passing the issue onto USEPA. (Tr. at 268-272.)

12. John Hepperly stated that he is opposed to the grant of a variance extension. (Tr. at 273.)

13. James Lahey read letters from Dr. Goldman and Gretchen Duguay, outlined below. (Tr. at 275-276.)

14. Marilyn Burrile stated that she is opposed to the grant of a variance extension because DeKalb failed to file its reports to the Agency, and doubts that DeKalb will take seriously the conditions of a new variance. In addition, Ms. Burrile stated that DeKalb failed to educate its customers because the notice on the its water bills are ripped in half at payment time, so the notice is incomplete after payment. Also, the water bills are not sent to students. Ms. Burrile stated that if findings are inconclusive, there should be no radium in the water supply. Ms. Burrile stated that city officials are supposed to do what the public wants. (Tr. at 278-280.)

15. Miguel Checa stated that he has been a DeKalb resident since 1993, and is a co-founder of CAN. Mr. Checa reported that there are avoidable risk factors and unavoidable risk factors; since radium is an avoidable risk factor, DeKalb should avoid it. Mr. Checa summarized the statement he submitted (See P.C.#12 below), and gave suggestions for the city to achieve compliance. Mr. Checa believes the beneficiaries of the variance are the developers not DeKalb residents, and that the money residents spend on bottled water is a hidden tax. Mr. Checa stated that city hall provides no feedback and urges the Board to assist city hall in moving in the right direction. Mr. Checa asked whether the Board conducts scientific peer review, and if so, to submit those studies for review. (Tr. at 281-295, 318.)

16. Jacque Suding reported that the lowest intake of radium observed in the Argonne studies was 9 microcuries. Ms. Suding stated that this variance will affect all users of DeKalb's water supply. Ms. Suding stated that DeKalb must meet the federal standard and should be given six months to comply. Ms. Suding stated that DeKalb can set its own standard that is equal to or stricter than the federal standard. (Tr. at 296-302, 313.)

17. Ellen Partridge, Partridge & Niro, stated that she represented certain residents in their motion to intervene, and expressed dismay that the Agency didn't enforce the prior variance and that DeKalb did not comply with the Board's previous order. Ms. Partridge asked the basis for the Agency's contention that only new users are affected by the variance request, when the Agency plans to enforce the standard and how the Board chooses which models and whether or not there is a threshold. Ms. Partridge asked whether the Board has ever denied a variance. Ms. Partridge listed a number of remedies DeKalb citizens would like implemented. (Tr. at 303-308.)

18. Steve Kapitan stated that if 20.0 pCi/L is the true standard then it would be a waste of taxpayer money to spend money on remediation. If the standard should be 5.0 pCi/L, then it would be irresponsible not to address the problem. Mr. Kapitan stated that there is a deficiency in the structure of this hearing. Mr. Kapitan encouraged citizens to lobby the federal government if they believe the 5.0 pCi/L standard should remain in effect. Mr. Kapitan questioned the Agency's stance on variances only affecting new users, stating that this leads to suspicion that a variance grant is an economic decision, not a health decision. (Tr. at 310-312, 326-327.)

19. Symone Roscelli asked if there is documentation that the federal government considered a change in the radium standard over the past 20 years. (Tr. at 315.)

Public Comment Exhibits Entered at Hearing

P.C. #1 "Chernobyl Study Suggests Fetal Risk for Low Radiation Exposure", The Chicago Tribune, July 25, 1996. This article states that the Chernobyl study suggests a possible link between everyday exposure to low levels of radiation to cancer.

P.C.#2 Illinois Department of Public Health, County Cancer Incidence Report. This report describes the cancer incidents by county in Illinois from 1987 through 1991.

P.C.#3 1978 IEQ Advisory Report on Radium in Drinking Water. This report explains how radium levels effect the bone, including causing bone cancer. It also explains the latency period for cancer.

P.C.#4 Well D Data. This report lists the radiological data for Well D of DeKalb's water supply prior to and including September 1974 deposits.

P.C.#5 Sam Goldman letter dated June 17, 1991. Dr. Goldman is concerned about proposals to relax radium standards for DeKalb's drinking water because of the avidity of radium for bone, especially in children.

P.C.#6 Documents from Linda Lahey, including reports on county cancer incidents in Illinois, study by Dr. Seth Tuler, Dr. Bertel and Dr. Gofman.

P.C.#7 Dr. Sandman's written comment.

P.C.#8 Illinois Department of Public Health, County Cancer Incidence Report. This two-page excerpt lists the types of cancer and notes that DeKalb has a high rate of prostate cancer in males.

P.C.#9 Letter and attachments from Dr. Perry. Dr. Perry states that young children are at higher risk of developing cancer and should be protected. Dr. Perry gave suggestions on ways to reduce radium levels in water, pointing to the water softening system employed in Elgin, Illinois.

P.C.#10 Letter from Danica and Tim Lovings. The Lovings are strongly opposed to a grant of an extension of variance.

P.C.#11 Letters of Dr. Goldman and Gretchen Duguay, read by James Lahey. Dr. Goldman is concerned the avidity of radium for bone, especially in children. Ms. Duguay, Chairman of Environmental Concerns, Illinois Parents and Teachers Association, states that the PTA opposes any variance allowing more radium in water.

P.C.#12 Documents presented by Miguel Checa. Mr. Checa explained how cancer can be caused by two types of agents: initiators and promoters. Initiators, such as x-rays, smoking and certain chemicals, start the damage to a cell that can lead to cancer. Promoters usually do not cause cancer by themselves; rather, they change cells already damaged by an initiator. For example, the combination of alcohol and tobacco can promote the development of cancers in the mouth and throat. Mr. Checa opposed the variance due to the increased risk of developing cancer through exposure to radium.

In addition, Mr. Checa states that while renting a house in DeKalb, he received no notice of the radium levels in his drinking water, or the health risks associated with radium in drinking water. Mr. Checa urges the Board to order DeKalb to develop a notification method that would include renters, whose numbers are quite high due to the student population.

P.C.#13 Video tape of DeKalb city council May 28, 1996 and July 8, 1996 meetings submitted by Mr. Checa.

P.C.#14 Written statement from Jacque Darcy Suding. Ms. Suding noted that paragraph 35 of the Agency's Recommendation stated that granting of the extension variance would affect only those users who consume water from any newly extended water lines. Ms. Suding contends that a variance extension would affect all users of DeKalb's water supply because DeKalb's system is interconnected. Ms. Suding claims it is impossible to separate current users from potential users of new water lines.

Ms. Suding also included letter from Jacob Dumelle, former Board Member, who is concerned by the findings of Dr. Murray M. Finkelstein as published in the Canadian Medical Association Journal, September 1994. Mr. Dumelle states that Dr. Finkelstein found an association between bone cancer and radium exposure as low as 0.19 pCi/L. Since DeKalb's radium levels are as high as 13.7 pCi/L, Mr. Dumelle urges DeKalb to quickly reduce the radium levels in its drinking water.

Finally, Ms. Suding included copies of Mr. Dumelle's dissents in In the Matter of Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code 602.105 and 602.106 (August 15, 1985) §85-14, and City of DeKalb v. IEPA (June 20, 1991) PCB 91-34.

Post-Hearing Public Comments

P.C.#15 Letter dated August 5, 1996 from Ines De Romana. Ms. De Romana objects, on behalf of her children, to grant of a variance extension because water is a nutrient, and in consuming radium, her family's health would be impacted by the variance. Ms. De Romana is concerned that political and economic interests would outweigh the health of DeKalb's residents in the Board's determination.

P.C.#16 Letter dated August 5, 1996 from Marilyn Barrile. Ms. Barrile objects to a grant of variance extension because of radium exposure through drinking, swimming, showering, cooking and washing dishes. She is also concerned about the long-term health of her children, and contends that it is not known how much radium actually causes health problems. Ms. Barrile urges the Board to consider all the facts.

P.C.#17 Declaration of Marvin Resnikoff, Ph.D. dated August 9, 1996. Dr. Resnikoff objects the variance extension because an increase in the radium level, as proposed by the USEPA, increases cancer risks which is unacceptable.

P.C.#18 Letter dated August 13, 1996 from Dorianne Burg. Ms. Burg spoke at hearing, and sent this letter of clarification to submit her objection to the grant of DeKalb's request for variance extension. Ms. Burg states that USEPA set a radium standard of 5.0 pCi/L in 1976 because of the harmful health effects of radium. She also contends that cities like DeKalb have been given estimates of under \$50,000 to achieve compliance, and urges DeKalb to investigate opportunities to clean sediment from city wells and install concrete plugs and casings as ways to achieve compliance. Finally, Ms. Burg states that granting the variance would violate federal law because the city is out of compliance with federal standards.

P.C.#19 Letter dated August 14, 1996 from Mark and Susan Hauser. Mr. & Ms. Hauser request that the variance extension be denied because DeKalb's radium levels exceed the standard and a granting of the variance extension may not be legally enforceable.

P.C.#20 Letter dated August 14, 1996 and video tape of the August 5, 1996 PCB 96-246 hearing from Miguel Checa. Mr. Checa requests that the variance extension be denied based upon the risk of cancer due to high levels of radium.

P.C.#21. Letter dated August 14, 1996 from Dorianne Burg. Ms. Burg believes the radium standard should remain at 5.0 pCi/L and requests that the variance extension be denied because of the risks of cancer.

P.C.#22 Letter dated August 14, 1996 from Linda Lahey. Ms. Lahey submitted the Ad Hoc Water Quality Advisory Committee's 1992 report which lists alternatives for supplying water with less radium content to DeKalb residents, and points out that most committee members do not feel that a threat to their water supply exists. In addition, Ms. Lahey submitted DeKalb County cancer incidence reports and the separate predictions of Dr. John Gofman and Dr. Meyer for the incidence rate of bone cancer in DeKalb. Ms. Lahey asserts that the proposed 20.0 pCi/L is too high and increases the risk of cancer.

P.C.#23 Letter dated August 14, 1996 from Jacque Darcy Suding. Ms. Suding submitted two reports titled, Health Benefit - Cost Analysis for Activities Involving Ionizing Radiation Exposure and Alternatives and Determination of Radium Removal Efficiencies in Illinois Water Supply Treatment Processes. Ms. Suding questions whether DeKalb is properly testing its water sources, because the first report contends that most methods of detecting radium levels are flawed. Ms. Suding states that the danger of radium is downplayed because of the lack of accurate data concerning exposure to radium over time. The second report describes ion exchange and lime softening methods for treating radium. Ms. Suding states that the treatments do not cost \$6 to \$13 million as DeKalb claims and wonders how the city derived its estimate.

P.C.#24 Affidavit of Dr. Seth Tuler filed August 14, 1996. Dr. Tuler's affidavit is identical to the one attached to Ms. Lahey's testimony at hearing.

P.C.#25 Reports read by Linda Lahey at hearing, filed August 14, 1996. These reports are copies of figures presented at hearing. Ms. Lahey contends that the bad faith exhibited by DeKalb in not achieving compliance during the term of its prior variance makes a mockery of the Board's 1991 order. Ms. Lahey states that it is within the Board's realm to order compliance with the federal standard for radium on behalf of the children of DeKalb.

ANALYSIS

At the outset, the Board notes its appreciation of the depth of concerns expressed by DeKalb citizens as evidenced by the numerous public comments received both at hearing and at its office. However, the issue we are statutorily allowed and required to decide in a petition for variance is: whether petitioner would incur an arbitrary or unreasonable hardship which outweighs the environmental and health impact if its request for variance is denied. In addition, in petitions for extension of variance, the Board must decide whether petitioner has demonstrated satisfactory progress toward achieving compliance. As the Board has previously stated, a variance proceeding is not a proper forum to challenge local economic development and financing decisions. (County of Lake, Vernon Hills Water System v. IEPA and Tina Santopalo, Lake County Defenders, Village of Vernon Hills, North Suburban Group of Great Lakes Chapter of Sierra Club, Mark D. Booras and F.T. Mike Graham (May 5, 1988) PCB 87-198, 89 PCB 69. *See also*, (Metro Utility Company v. IEPA (April 26, 1990) PCB 89-210, 110 PCB 378.) Additionally, as we also stated in a regulatory order entered today, any debate before the Board of the merits of existing or future MCL for radium is fruitless, as the General Assembly has taken this matter out of the hands of the Board. (See In the Matter of: Amendments to 35 Ill. Adm. Code Subtitle F, (September 19, 1996) R96-18.) Section 17.6 of the Act directs that the Illinois radionuclides (including radium-226 and radium-228) MCL "shall be the [USEPA] enforceable" MCL. (415 ILCS 5/17.6) Therefore, the Board will restrict its responses to those public comments which are germane to the issues described above.

Since this matter involves a petition for extension of a prior variance, the Board will first consider whether the conditions which existed to justify the first variance still exist to

justify an extension. Specifically, the Board will review the alleged hardship justifying delayed compliance with the standards, and whether the stated hardship continues to outweigh any environmental impact of the requested variance. The Board will then discuss whether DeKalb has demonstrated satisfactory progress toward achieving compliance by reviewing its compliance efforts and the reasonableness of its future compliance plan.

Alleged Hardship

The Board finds that the circumstances which prevented DeKalb's compliance with the radium standard continues to exist. The same federal regulatory uncertainty which existed in 1991 continues to exist today: continued pendency of USEPA action to promulgate new standards for radionuclides in drinking water. USEPA's 1991 proposal of separate 20.0 pCi/L standards for radium-226 and radium-228, if adopted, could significantly alter or eliminate DeKalb's need for variance from the Board's rules, or its need for alternatives to achieving compliance with the underlying radium limitations.

While it is undisputed that a speculative change in law is not grounds for establishing arbitrary or unreasonable hardship, the Board believes that in some circumstances a prospective change in law may be appropriately reflected in the conditions upon which a variance is granted. (City of Genoa v. IEPA (December 20, 1990) PCB 90-166, 117 PCB 135.) In the instant case, since USEPA is expected to announce a decision as to radium standards in October 1996, the Board finds it appropriate to condition the grant of variance to ensure that DeKalb will achieve compliance with whatever standard is ultimately applicable while ensuring that DeKalb will not need to prematurely return to this Board to request another variance extension. As the Illinois legislature has decided to link state standard changes with federal standard changes, the Board believes it is consistent with legislative intent to allow delay in compliance until the regulatory scheme stabilizes at the federal level. As a result, the Board is disinclined to require a municipality to conform, and in the process spend millions of dollars, to a standard that is being federally reviewed.

DeKalb presented considerable evidence of the economic and fiscal hardship it would suffer should its request for variance extension be denied. Specifically, DeKalb states that numerous residential and commercial developments would be halted if the variance request is denied, resulting in loss of tax income for the city and loss of job opportunities for DeKalb residents. (Tr. at 90-97.) Normally, consequences of variance denial such as the loss of job opportunities, city income and taxes, and the loss of sales and enhanced property taxes, are considered merely the expected consequences of restricted status, and do not, by themselves, constitute arbitrary or unreasonable hardship. (Willowbrook Motel v. Pollution Control Board (July 14, 1983) PCB 1-149, 53 PCB 007; *affirmed in* Willowbrook Motel v. Pollution Control Board, 135 Ill.App.3d 343, 481 N.E.2d 1032 (1st Dist. 1977) (emphasis added.) However, DeKalb must demonstrate that the claimed hardship outweighs any injury to the public or the environment in order for the Board to find that an arbitrary or unreasonable hardship would result. (Marathon Oil Company v. IEPA and IPCB, 610 N.E.2d 789 (5th Dist. 1993).)

Environmental Impact

The current combined radium standard is 5.0 pCi/L. The finished water delivered by DeKalb to its users contains a daily weighted average of 7.3 pCi/L, as the waters from the high radium deep wells combine with waters from the low radium shallow wells prior to distribution. In reducing the daily weighted average of radium to 7.3 pCi/L during the term of its variance, DeKalb has decreased any adverse environmental impact of its drinking water. The Board finds that DeKalb's divergence from the radium standard is not great, and that the proposed variance would cause no significant health risk for the population served by water main extensions for the time period of the recommended variance. The Board agrees with the parties that a granting of the requested variance extension would not result in a significant injury to the public or to the environment for the limited time period requested.

In summary, the Board finds that DeKalb's alleged hardship, due to the ongoing scrutiny of the federal radium standard, and due to the loss of economic and fiscal income should a variance be denied, continues to outweigh the nominal environmental impact of the requested variance. Therefore, we continue to find the hardship to be an arbitrary or unreasonable one. We next consider whether DeKalb achieved satisfactory progress toward compliance during the term of its prior variance.

Compliance Efforts

The Board finds that DeKalb substantially complied with its 1991 order: DeKalb notified its customers of its noncompliance, subsequent variance and current radium levels; hired consultants to research compliance alternatives; chose two feasible compliance alternatives; reduced the amount of water extracted from the two wells containing the highest amount of radium which reduced DeKalb's daily weighted average to 7.3 pCi/L; and sent the Agency progress reports during the term of its variance. It is clear that DeKalb failed to submit to the Agency three of six progress reports required by the Board's June 20, 1991 order. However, upon discovering its failure to submit the requested reports, DeKalb immediately prepared a summary progress report and instituted a checks and balances system to ensure future timely submission of these reports. Therefore, the Board declines to deny DeKalb's request for variance extension based upon this infraction alone. As stated in prior Board orders, failure to comply with conditions of a past variance may be evidence of bad faith; however, denial of variance for this reason may constitute an action not commensurate with the transgression. (County of Lake, Vernon Hills Water System v. IEPA and Tina Santopalo, Lake County Defenders, Village of Vernon Hills, North Suburban Group of Great Lakes Chapter of Sierra Club, Mark D. Booras and F.T. Mike Graham (May 5, 1988) PCB 87-198, 89 PCB 69.) We find no indication of bad faith in this case, however, due to the immediate and thorough nature of the corrective action taken by DeKalb.

Future Compliance Plans

DeKalb states that, during the term of the extended variance, it will continue to monitor its radium levels, and report its findings to the Agency. DeKalb also will continue to send monthly notices to its users of the water supply's noncompliance, the grant of the variance,

and of the most current radium levels. Finally, DeKalb states its willingness to continue investigations into shallow well development in the Troy Bedrock Valley located west of the city. If that option proves infeasible, DeKalb asserts that it will develop an ion-exchange softening system to remove radium in its deep wells. The Board finds these future compliance efforts to be reasonable.

The Board is concerned, however, with the type of notification sent to DeKalb water customers. At hearing, several members of the public mentioned that thousands of water users in the city of DeKalb, including many University of Northern Illinois students, are renters. (Tr. at 270, 323.) As renters, these people were not sent monthly water bills and therefore were unaware of the notice appearing on the bills regarding DeKalb's radium levels and variance. In addition, the notification appearing on DeKalb's water bills would be halved at payment time, denying users the ability to retain a full copy of the notice. (Tr. at 278.) The Board will address these concerns in this order by requiring DeKalb to secure means to notify renters within its water distribution area, and to provide the Agency with of its notification measures. DeKalb also will be required to relocate the notice on its water bills to allow users to retain a full copy of the notice after payment. Although the Board recognizes the added expense that DeKalb will incur by this order, the Board believes the importance of notifying all users within its service area outweighs the additional cost.

Having found that DeKalb has substantially complied with the Board's previous order, and that DeKalb's future compliance plans are reasonable, the Board also finds that DeKalb has made satisfactory progress toward achieving compliance during its prior variance. DeKalb has accomplished all compliance efforts short of final design and construction; to require more while the radium standard is in flux would be unreasonable.

CONCLUSION

Based upon the record, the Board finds that to require immediate compliance with the "Standards for Issuance" and "Restricted Status" regulations would continue to impose an arbitrary or unreasonable hardship upon DeKalb. The hardship of requiring DeKalb to spend millions of dollars in taxpayer money to achieve compliance with a standard currently under federal scrutiny outweighs any nominal environmental and health risks associated with exposure to the 7.3 pCi/L of radium currently found in DeKalb's finished drinking water supply. In addition, the Board finds that DeKalb has made satisfactory progress toward achieving compliance during the term of its prior variance. Accordingly, the Board hereby grants DeKalb a variance subject to the conditions stated below.

Today's action is solely a grant of variance from standards of issuance and restricted status. Again, the effect of this variance is to allow DeKalb to extend water service to new customers. DeKalb is not granted variance from compliance with the combined radium standard, nor does today's action insulate DeKalb in any manner from enforcement for violation of that standard.

We note, in closing, that it has been the Board's experience that a variance grant may hasten ultimate compliance. One of the effects of granting a variance is the placement of binding compliance conditions. Had variance been denied, compliance conditions would apply only to the extent that they are otherwise contained in state regulations.

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

ORDER

The City of DeKalb (DeKalb) is hereby granted an extension of variance from 35 Ill. Adm. Code 602.105(a), "Standards of Issuance" and 602.106(b), Restricted Status, only as they relate to the standards for combined radium-226 and radium-228 in drinking water as set forth in 35 Ill. Adm. Code 611.220(a), subject to the following conditions:

- (A) For purposes of this order, the date of United States Environmental Protection Agency (USEPA) action shall consist of the earlier date of the:
 - (1) Date the regulation is promulgation by the USEPA which amends the maximum contaminant level (MCL) for combined radium, either of the isotopes of radium, or the method by which compliance with a radium MCL is demonstrated; or
 - (2) Date of publication of notice by USEPA that no amendments to the 5 pCi/L combined radium standard or the method for demonstrating compliance with the 5 pCi/L will be promulgated.
- (B) The variance shall terminate on the earliest of the following dates:
 - (1) Five years from the date of this order; or
 - (2) Two years following the date of USEPA action.
- (C) In consultation with the Illinois Environmental Protection Agency (Agency), DeKalb shall continue a sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Until this variance terminates, DeKalb shall collect quarterly water samples from its distribution system at locations approved by the Agency. DeKalb shall composite quarterly samples from each location separately and shall have them analyzed annually by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of radium-226 and radium-228. At its own option, DeKalb may have the quarterly samples analyzed when collected. The results of the analyses shall be sent to:

Illinois Environmental Protection Agency

Compliance Assurance Section
Drinking Water Quality Unit, Bureau of Water
P.O. Box 19276
Springfield, Illinois 62794-9276

- (D) Within 30 days of receiving the most recent quarterly sample, DeKalb shall also send to the address in paragraph (C) the running average results of the most recent four quarterly samples.
- (E) Within three months of USEPA action, DeKalb shall apply to the Agency at the address below for all permits necessary for construction, installation, changes, or additions to its 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 Program
Permit Section
2200 Churchill Road
Springfield, Illinois 62794-9276
- (F) Within three months of the issuance of each construction permit by the Agency, petitioner shall advertise for bids, to be submitted with 60 days, from contractors to do the necessary work described in the construction permit. DeKalb shall accept appropriate bids within a reasonable time. DeKalb shall notify the Agency, Division of Public Water Supplies (DPWS), within 30 days, of each of the following actions: 1) advertisements for bids; 2) names of successful bidders; and 3) whether DeKalb 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 MCL in question, shall be completed no later than two years following USEPA action. One year will be necessary to prove compliance.
- (H) 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 ever three months thereafter, DeKalb will send to each user of its public water supply a written notice to the effect that DeKalb is not in compliance with the standard in question. The notice shall state the average content of the contaminants in samples taken since the last notice period during which samples were taken.
- (I) 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, DeKalb will send to each user of its public water supply a written notice to the effect that DeKalb has been granted by the Illinois Pollution Control Board a variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and 601.106(b), Restricted Status, as it relates to the MCL standard in question.

- (J) To achieve the objectives set forth in paragraphs (H) and (I) above, DeKalb shall develop and incorporate means by which all users within its service area, including residential and student renters, receive the above-described written notice. In addition, DeKalb shall take measures to ensure that a full copy of the notice can be retained by its users after payment of their water bills.
- (K) Until full compliance is achieved, DeKalb shall take all reasonable measures with its existing equipment to minimize the level of contaminants in its finished drinking water.
- (L) DeKalb shall provide written progress reports to the Agency at the address below, every six months concerning steps taken to comply with paragraphs C, D, E, F, G, H, I and J. 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 sent to:

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

IT IS SO ORDERED.

Board Member R.C. Flemal abstained.

If DeKalb chooses to accept this variance subject to the above order, within forty-five days of the grant of the variance, DeKalb must execute and forward the attached certificate of acceptance and agreement to:

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

Once executed and received, that certificate of acceptance and agreement shall bind DeKalb 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. The form of the certificate is as follows:

CERTIFICATION

I (We), _____, hereby accept and agree to be bound by all the terms of the Order of the Pollution Control Board in PCB 96-246, September 19, 1996.

Petitioner

Authorized Agent

Title

Date

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1994)) provides for the appeal of final Board orders within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246 "Motions for Reconsideration.")

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the ____ day of _____, 1996, by a vote of _____.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board