

ILLINOIS POLLUTION CONTROL BOARD
March 19, 1987

NORTH SUBURBAN PUBLIC)	
UTILITY COMPANY,)	
)	
Petitioner,)	
)	
v.)	PCB 86-199
)	
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

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

This matter comes before the Board on the petition for variance filed on November 12, 1986, as amended December 1, 1986, by North Suburban Public Utility Company ("Company"). The Company seeks a five year 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 the exceedence by the Company's public water supply of the 5 pCi/l combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a). On January 6, 1987, the Illinois Environmental Protection Agency ("Agency") filed a Recommendation in support of grant of variance subject to conditions. Hearing was waived and none was held.

The Company provides potable water supply and distribution for a population of 10,000 residential and 1,000 industrial and commercial utility customers representing some 42,000 residents of unincorporated portions of Maine Township, Cook County, Illinois. Petitioner acquired the subject water system from the Domestic Utilities Service Company ("DUSCO") of Glenview, Illinois, on September 25, 1986.

The Company currently draws water from three deep wells, as follows:

<u>Well No.</u>	<u>Depths</u>	<u>Place in Operation</u>	<u>Gallons Per Minute</u>	<u>Location</u>
1	1415 feet	1957	950	Central & Milwaukee
2	1402 feet	1961	1250	Lot 315 Harrison
3	1423 feet	1975	1075	Lot 126 Victor

DUSCO had been first advised of the high radium content in its water supply by letter from the Agency dated November 16, 1984, and been first notified of placement on restricted status by letter from the Agency dated February 18, 1985. The Agency based its determination on analyses showing a radium-226 content of 4.9 pCi/l and a radium-228 content of 4.5 pCi/l, for a combined content of 9.4 pCi/l. Subsequent analyses by the Agency, reported in August 1986, showed that radium-226 was 5.1 pCi/l and radium-228 was 2.7 pCi/l, for a combined total of 7.8 pCi/l. Independent distribution system samples collected on August 30, 1986, and provided by Petitioner show the following results:

<u>Location</u>	<u>226</u>	<u>228</u>	<u>Combined</u>
Well 1	4.1	4.2	8.3
Well 2	5.3	5.2	10.5
Well 3	5.9	4.1	10.0

The Company currently holds a Lake Michigan water allocation in the amount of 2.5 MGD effective in accounting year 1981 and escalating to 4.0 MGD effective in accounting year 2020. However, it does not currently have means of transmitting the water from the lake to its service area.

The Northwest Water Commission ("Commission") has recently completed a transmission line that brings Lake Michigan Water through the Company's service area. The Company asserts that the Director of the Commission has indicated that excess water appears to be available from this main and that the Commission would be willing to consider accepting Petitioner as a customer by October, 1987. At the present time, it is the Company's intention to negotiate a water purchase agreement with the Commission. Connection to the system is projected by late 1989. Upon connection, it is Petitioner's immediate intent to use approximately 1 MGD of Lake Michigan water blended with well water supplies.

The Company also intends to phase out use of the well supplies as the Lake Michigan water becomes available. It further intends, consistent with Illinois Department of Transportation requirements, to completely convert from deep wells to Lake Michigan water within five years of initially using the Lake Michigan water. If connection to the Commission system proceeds according to schedule in 1989, the complete change over to Lake Michigan water would thus occur by 1994.

Petitioner contends that blending of its well water with Lake Michigan water will allow it to come into compliance with the combined radium standard. Similarly, complete conversion to use of Lake Michigan water will eliminate the radium problem.

The Company believes that it has no reasonable alternative methods of compliance other than connection to Lake Michigan water. The two principal methods of treatment involve lime-soda softening and ion exchange. Both methods concentrate radium in the sludge, causing waste disposal and handling difficulties and expenses; the ion exchange method also concentrates sodium in the finished water, which can pose health risks to persons with hypertension or heart problems. Moreover, both methods require combining all raw water supply at one location for treatment, and the Company's existing water supply system has no central treatment plant. The Company contends that, because its three wells are located in high density residential and commercial areas, construction of a treatment plant would be expensive and that it would be difficult to obtain proper zoning for a treatment plant.

As regards ion exchange, the Agency also notes that "some 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 exchange material may be a problem" (Agency Recommendation, p. 6). For this reason the Agency "actively discourages the use of the ion exchange process for radionuclide removal, unless that is the best treatment method available for a particular supply" (Id.).

Given its commitment to obtaining Lake Michigan water and the difficulties associated with instituting and employing a treatment technology, the Company believes that a requirement to come into immediate compliance would impose an arbitrary or unreasonable hardship. It also notes that by virtue of its inability to receive permits for water main extensions, needed expansion of the water system to serve the domestic and fire protection requirements of the local population are forestalled, and that prospective home purchasers and business developers have been hurt. As a specific example, Petitioner currently foresees the need to extend water mains to serve the following user:

Williamsburg Apartments located at the intersection of Dearlove and Central Avenues, Glenview, consisting of 92 single family residences with an expected population of 300 persons. Each building of six units will have one hookup to the proposed water main. These facilities are currently under construction.

Finally, as to the environmental and health effects of its request, the Company asserts that it believes that grant of variance will impose no significant health risk to persons who will receive water from the new service connections during the term of this variance before replacement of the well water by Lake Michigan water. In support of this belief, the Company has referred to the Board to the testimony and exhibits presented by Richard E. Toohey, Ph.D. and James Stebbings, 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.

In its Recommendation, the Agency does not dispute the City's various assertions. The Agency believes that while radiation at any level creates some risk, the risk associated with the 7.9 pCi/l level in petitioner's water is low. The Agency further 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 likelihood of compliance with the [combined radium] standard due to receiving Lake Michigan water within three to four years, 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. Grant of variance may also, in the interim, lessen exposure for that portion of the population which will be consuming more effectively blended water. In so saying, the Agency emphasizes that it continues to place a high priority on compliance with the radium standards."

For these reasons, the Agency recommends grant of a variance, subject to conditions. The Board notes that the Agency, while it otherwise appears to concur with all matters requested by Petitioner, cites in its recommended order that the period of variance be four years rather than the five years requested by Petitioner. Given that the projected date of delivery of Lake Michigan water is late 1989, and that blending thereafter should bring Petitioner into compliance, the Board also believes that the full five-year term is unnecessary.

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. The Board agrees with the Agency that no significant health risk will be incurred by the persons who are served by any new water main extensions during

the limited time before the deep well water is replaced by Lake Michigan water. The Board will accordingly grant a four year variance, subject to conditions similar to those outlined by the Agency.

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

ORDER

1. North Suburban Public Utility Company is hereby granted a 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 March 19, 1991, or when compliance is achieved, whichever is sooner;
 - (B) Petitioner shall continue efforts to obtain Lake Michigan water through the Northwest Water Commission,
 - (C) Petitioner shall report to the Agency one year prior to the expiration of this variance as to the status of obtaining Lake Michigan water before this variance expires. If it reasonably appears that Petitioner will not obtain Lake Michigan water prior to said expiration, Petitioner shall apply to IEPA for all necessary permits for the construction of treatment facilities at least six months prior to said expiration and install said facilities and have them operational prior to said expiration;
 - (D) 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 expires, Petitioner shall collect quarterly samples of its water from its distribution system, shall composite and shall analyze them 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. The results of the analyses shall be reported to the Water Quality Unit, Division of Public Water Supplies, 2200 Churchill Road, IEPA, Springfield, Illinois 62706, within 30 days of receipt of each analysis. At the option of Petitioner, the quarterly samples may be analyzed when collected. The running average of the most recent four quarterly sample results shall be reported to the above address within 30 days of receipt of the most recent quarterly sample;

- (E) Compliance with the maximum allowable concentration of combined radium-226 and radium-228 shall be achieved no later than five years from grant of this variance;
 - (F) Pursuant to 35 Ill. Adm. Code 606.201, in its first set of water bills or within three months after the date of this Variance Order, whichever occurs first, and every three months thereafter, Petitioner will send to each user of its public water supply a written notice to the effect that Petitioner has been granted by the Pollution Control Board a variance from 35 Ill. Adm. Code 602.105(a) Standards of Issuance and 35 Ill. Adm. Code 602.106(b) Restricted Status, as it relates to the combined radium standard;
 - (G) 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 will 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, radium-228 standard. The notice shall state the average combined radium in samples taken since the last notice period during which samples were taken;
 - (H) Petitioner shall take all reasonable measures with its existing equipment to minimize the level of radium in its finished water;
 - (I) Petitioner shall provide written progress reports to IEPA, DPWS, FOS every six months concerning steps taken to comply with paragraphs B and H. Progress reports shall quote each of the above paragraphs and immediately below each paragraph shall state what steps have been taken to comply with each paragraph.
2. Within forty-five days of the date of this Order, Petitioner shall execute and forward to Wayne L. Wiemerslage, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62706, a Certificate of Acceptance and Agreement to be bound to all terms and conditions of this variance. This forty-five day period shall be held in abeyance for any period this matter is being appealed. The form of said Certification shall be as follows:

CERTIFICATION

I, (We), _____, having read the Order of the Illinois Pollution Control Board, in PCB 86-199, dated March 19, 1987, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

By: Authorized Agent

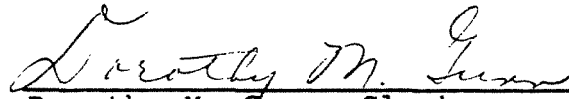
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Date

IT IS SO ORDERED.

Jacob D. Dumelle and B. 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 19th day of March, 1987, by a vote of 4-2.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board