

ILLINOIS POLLUTION CONTROL BOARD
August 4, 1988

IN THE MATTER OF:)
)
PROPOSED AMENDMENT TO)
35 Ill. ADM. CODE 212.209,) R86-41
VILLAGE OF WINNETKA)
GENERATING STATION)

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

This matter is before the Board on a petition for site specific relief filed by the Village of Winnetka on September 12, 1986. Winnetka asks that the interim site specific particulate emission limitation for its generating station be made permanent. The site specific rule, found at 35 Ill. Adm. Code 212.209, allows the Winnetka plant to emit up to 0.25 pounds of particulates per million British thermal units (lbs/MBtu). The general limitation is 0.1 lbs/MBtu, set forth at 35 Ill. Adm. Code 212.204.

The first hearing in this matter was held on December 9, 1987 at Winnetka Village Hall. On February 2, 1988, a second hearing was held in Chicago. On March 10, 1988 the Department of Energy and Natural Resources (DENR) filed a negative declaration stating its determination that the preparation of a formal economic impact study is not necessary in this proceeding. The negative declaration was based on DENR's finding that the record contains sufficient information for the Board to make a reasoned determination. Thus, DENR found that the cost of making a formal study is economically unreasonable in relation to the value of the study to the Board. On April 18, 1988 the Board received notification that the Economic and Technical Advisory Committee (ETAC) concurred in DENR's negative declaration.

Background

The Village of Winnetka owns and operates its own generating plant, which provides power for Winnetka's 12,500 residents as well as commercial customers. The plant is located on the lake shore, where Tower Road meets Lake Michigan. To the north and south of the plant are a public beach and residences. The power plant, which began operations in 1900, shares its site with Winnetka's water plant.

The plant generates electricity by the use of steam-driven and diesel generators. The steam is supplied by a series of coal-fired boilers. The boilers then exhaust through a common stack. There are currently five boilers in place, numbered 4, 5,

6, 7, and 8. The generating capacity of the plant is as follows:

STEAM GENERATING CAPACITY

BOILER	YEAR INSTALLED	FUEL	STEAM RATE (lbs. per hour)	CONTROLS
4	1958	gas/oil	110,000	none
5	1938	coal	40,000	none
6	1938	coal	40,000	none
7	1948	coal	69,000	none
8	1964	gas/coal	125,000	multiclone

OTHER GENERATING CAPACITY

Diesel 1	1978	diesel	2400 Kw	none
Diesel 2	1978	diesel	2400 Kw	none

(Transcript of February 2, 1988 (Tr. II) at 95; Ex. 11.) Boiler 8 is the plant's main boiler. Boiler 4 and the two diesels are also presently used. Boilers 5, 6, and 7 do not currently have operating permits from the Illinois Environmental Protection Agency (Agency). (Transcript of December 9, 1988 (Tr. I) at 269.)

Until 1971 there was no connection between the Winnetka electric system and the Commonwealth Edison system. There are now three interconnects between the two systems, with a capacity of 30 megawatts (MW). In the early 1970s Winnetka departed from earlier practice and bought most of its power from Commonwealth Edison. The electric plant generated only peak load power. In the early 1980s Commonwealth Edison's rate structure changed, and fuel costs made it economically desirable for Winnetka to again generate as much of its own power as possible. Winnetka currently generates a majority of its power, but some purchases are made from Commonwealth Edison almost daily. (Tr. II at 132-33.)

In 1982 the Agency issued a permit to Winnetka which allowed the generating station to emit particulates up to 0.25 lbs/MBtu. At that time the Board was considering a general regulation limiting particulate emission from sources in the Chicago major metropolitan area to 0.1 lbs/MBtu. Winnetka participated in this general rulemaking in an attempt to establish a site specific limitation. In its final Opinion and Order, the Board declined to grant such site specific relief as

inappropriate in a general rulemaking. However, the Board did enact 35 Ill. Adm. Code 212.209, which established an exemption for Winnetka until January 1, 1989 or until final decision of a site specific rulemaking, provided Winnetka filed a petition for site specific relief within 60 days of the effective date of the general regulation. Particulate Emission Limitations, Rule 203(g)(1) and 202(b) of Chapter 2, 70 PCB 409, 425-26 (R82-1(A), July 2, 1986). The general regulation became effective on July 18, 1986, and the instant petition was filed on September 12, 1986.

As previously noted, Winnetka asks that the Board make permanent the interim regulation which allows Winnetka's plant to emit particulates up to 0.25 lbs/MBtu, instead of complying with the general limitation of 0.1 lbs/MBtu. Winnetka contends that its plant is unique in Illinois by virtue of its age, location, and small size. Winnetka further argues that it has amply demonstrated that its continued particulate emission of up to 0.25 lbs/MBtu will have no significant impact on local or regional ambient air quality, and that the air in Winnetka is consistently monitored as among the cleanest in the state. The Village does not contend that it is technically infeasible to bring the electric plant into compliance with the general rule, but submits that such controls are economically unreasonable. Both the Agency and John Leslie, a resident of Winnetka who participated through counsel in this proceeding, oppose Winnetka's request.

Environmental Impact

Winnetka argues that continued particulate emissions from its electric plant at the 0.25 lbs/MBtu level will not threaten the ambient air quality standards. In support of this position, Winnetka presented testimony from two witnesses who testified to the results of a particulate fallout study and a dispersion modeling study. This testimony engendered much cross questioning and rebuttal.

Winnetka first presented testimony from Dr. Jon Swanson, who designed and performed a community ambient air study for the Village. The study was designed to characterize the particulate fallout in Winnetka, with special attention paid to the power plant vicinity. Particulate matter was allowed to naturally accumulate on eight horizontal plates and in jars. These deposits were then compared microscopically with standard samples of emissions from the electric plant. Dr. Swanson concluded that "the impact of the plant is absolutely negligible and barely observable under the microscope." (Tr. I, p. 62.) He stated that only two percent or less of the total material collected could be attributed to emissions from the Winnetka power plant. (Tr. I p. 66; see also Ex. 3.) On cross-questioning, Dr. Swanson stated that the design of the study, including the selection of

sites, did not take into account the unique meteorology (such as lake shore fumigation) of the site, and that the study was qualitative rather than quantitative. (Tr. I, pp. 74-75, 89-90.) Dr. Swanson also testified that the study basically looked for large particles. (Tr. I, p. 75.)

The Agency presented testimony from Dr. Daniel D'Auben, manager of the Agency's Air Quality Unit. Mr. D'Auben testified that he found the Swanson study to be flawed because it measured only large particles. He concluded that the collection efficiency of the deposition plates would be less than five percent for the small particle sizes emitted by the electric plant. Mr. D'Auben noted that Winnetka uses a multiclone on Boiler 8, and that a multiclone collects only the relatively larger particles. Thus, Mr. D'Auben stated that the Swanson study would not show much impact for the Winnetka power plant because the study did not collect the particle sizes emitted by the plant. (Tr. II, pp. 25-26, 31.)

The bulk of Winnetka's testimony on environmental impact was presented by Mr. John Bradley of Murray and Trettel, Inc. Murray and Trettel conducted a dispersion modeling study, and a three volume report of that study was submitted into the record as Exhibits 7, 8, and 14. The study used USEPA's Industrial Source Complex, Short Term (ISCST) atmospheric dispersion model and appropriate modeling parameters and meteorological data to study estimate ground-level air concentrations of total suspended particulates (TSP) and the fraction of particles ten micrometers or less in diameter (PM-10) emitted from the Winnetka plant. (A description of the methodology of the study is contained in Exhibit 7 and at Tr. I, pp. 106-130.) The Murray and Trettel study concludes that Winnetka's electric plant, with "a modeled annual impact of 0.6 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$] TSP and 24-hour impact of 8.1 [$\mu\text{g}/\text{m}^3$] TSP will neither cause nor contribute to violations of the National Ambient Air Quality Standards [NAAQS] for TSP -- or PM-10 while emitting total suspended particulates at 0.25 lb/MBtu." (Tr. II pp. 129-130.)

Many of the details of the modeling done by Murray and Trettel were questioned by Dr. Walter A. Lyons, who was retained by John Leslie. Dr. Lyons was unavailable for either of the two hearings, and so a deposition was taken of his comments. Because his statements were not subject to cross-questioning, they were accepted by the Board as Public Comment #1. Dr. Lyons particularly criticized Murray & Trettel's use of the ISCST model. Dr. Lyons stated that the lakeside location of this Winnetka plant necessitates the use of a model which will account for the phenomena of fumigation and plume trapping. Dr. Lyons opined that there are advanced models which should have been used in this situation rather than the ISCST model. Based upon his review of the Murray and Trettel study and his experience with atmospheric effects on emissions and specifically the Lake

Michigan shore environment, Dr. Lyons concluded that: (1) meteorological conditions may well result in occasions where elevated regional background particulate concentrations, combined with emissions from Winnetka's electric plant, could exceed ambient air quality standards; and (2) such combined effect is most likely to occur with winds from the southeast, and thus Murray & Trettel's modeling will not reflect such an occurrence because the receptor was located southwest of the plant instead of northwest. (P.C. #1.)

Mr. Bradley later responded to Dr. Lyons' criticisms in Public Comment #2. The Agency, through Mr. D'Auben, testified that it found that the Murray and Trettel study is adequately conservative so as to show that emissions at 0.25 lbs/MBtu do not cause a violation of the NAAQS for TSP or PM-10. (Tr. II, p. 24; P.C. #3.) Dr. Lyons replied to Mr. Bradley's statements in Public Comment #5.

Control Alternatives

In 1985 Winnetka contracted with HDR Techserve, Inc. to prepare a report on particulate control equipment retrofitted to existing Boilers 7 and 8. (It was necessary to look at the cost of adding control equipment to Boiler 7, which does not now have a permit, because Winnetka has repeatedly stated its intention to use Boiler 7 in the future to handle peak loads.) That report has been submitted into the record of this proceeding as Appendix F to Exhibit 15. The HDR report identified seven control alternatives: mechanical collector, wet scrubber, electrostatic precipitator (ESP), fabric filter, electrostatically assisted fabric filter, flue gas recirculation, and slip stream fabric filter. The mechanical collector and electrostatically assisted fabric filter options were eliminated from further evaluation because neither has been demonstrated to achieve compliance with the particulate limitations. Likewise, the wet scrubber option was not considered further because of extensive space requirements and other disadvantages. (Ex. 15, App. F, pp. 3-1 -- 3-9.)

The HDR report thus evaluated the costs and economics of five alternatives. Each alternative was analyzed in terms of construction costs, operating and maintenance (O&M) costs, debt service, fuel savings, electric generating savings, and total annual cost. The report gives the following figures to retrofit Boilers 7 and 8 (1984 dollars):

Electrostatic precipitator

Total capital	\$2,999,000
Annual O&M	64,100
Annual fuel savings	(157,000)
Annual electric savings	(20,000)

Annual debt service	456,800
Total annual cost	\$ 343,900

Fabric filter (pulse jet)

Total capital	\$2,362,000
Annual O&M	107,000
Annual fuel savings	(157,000)
Annual electric savings	(20,000)
Annual debt service	354,800
Total annual cost	\$ 284,800

Fabric filter (reverse gas)

Total capital	\$3,825,000
Annual O&M	80,900
Annual fuel savings	(157,000)
Annual electric savings	(20,000)
Annual debt service	582,700
Total annual cost	\$ 486,500

Flue gas recirculation

Total capital	\$ 531,000
Annual O&M	(28,800)
Annual fuel savings	(157,000)
Annual electric savings	(20,000)
Annual debt service	77,500
Total annual cost	(\$ 128,300)

Slip stream fabric filter

Total capital	\$1,111,000
Annual O&M	46,400
Annual fuel savings	(157,000)
Annual electric savings	(20,000)
Annual debt service	164,500
Total annual cost	\$ 33,900

(Ex. 15, App. F, Table 4-5.) There are several space constraints associated with the installation of these options. Boiler 6 would have to be removed to permit the installation of slip stream fabric filters on either Boiler 7 or Boiler 8. Both Boilers 5 and 6 would have to be removed for installation of an ESP or either of the full flow fabric filter alternatives. Flue gas recirculation equipment could be installed without removing either Boiler 5 or Boiler 6. (Ex. 15, App. F, p. 4-10.) The \$157,000 annual fuel savings is the difference between generating electricity by operation on coal by using Boiler 7, as compared to Winnetka's previous electric generation by operation on a combination of coal, oil, and natural gas. (Ex. 15, App. F, p. 4-1.) (Fuel consumption rates were based on plant operating data

for 1983.) The estimated electric savings of \$20,000 for each alternative is the differential between the cost of purchased power minus the cost of generating the same amount of power with Boiler 7 operating on coal. (Ex. 15, App. F, p. 4-6.)

The report states that although a flue gas recirculation system is the least costly alternative, this system may not provide compliance with the 0.1 lb/MBtu standard during fluctuating load conditions. Of the other alternatives, the HDR report concludes that installation of slip stream fabric filters on Boilers 7 and 8 is the most economical method of providing compliance with the 0.1 lb/MBtu emission standard. That option is estimated to have an annual cost of \$33,900.* The report further states that installation of a full fabric filter system would provide for the highest overall particulate collection efficiency, highest small particle collection efficiency, a "clean stack" (less than 10% opacity) and the widest range in fuel selection. The pulse jet fabric filter has a lower capital cost than the reverse gas filter, due mostly to reduced building modification costs. (Ex. 15, App. F, pp. 4-10 -- 4-12.)

If its request for a site specific rule is denied, Winnetka apparently plans to add fabric filter control equipment to Boilers 7 and 8. Winnetka states that this equipment would cost between \$2.7 million and \$4.4 million, with annual operating costs between \$26,000 and \$32,000. Winnetka further notes that installation of fabric filter equipment would require use of the space now occupied by Boilers 5 and 6. (Tr. II, p. 106.) At hearing Mr. Bryan McInturff, Director of Winnetka's Water and Electric Department, testified that the differences between the costs of coal, oil, and gas are currently not as great as they were in 1985, when the HDR report was done. He stated that in 1985 it cost 3 1/2 cents worth of coal to produce one kilowatt hour of electricity, 5 1/2 cents of oil, and 7 cents of natural gas. Currently, Winnetka's costs are approximately 3.3 cents for coal, 4.2 cents for oil and less than 4.4 cents for natural gas. Mr. McInturff thus testified that with these costs there is not as much value in fuel substitution as was estimated in the HDR study. (Tr. II, pp. 132-33.)

Technical Feasibility

Winnetka has repeatedly stated that it does not claim that compliance with the general rule is not technically feasible. (Petition p. 8; Tr. I p. 187.) In fact, the HDR study found at least four alternatives that would provide compliance with the

*Winnetka submitted a January 21, 1988 letter from HDR which estimates that current costs would be 15% above the values given in its 1985 report. (Ex. 15, App. I.)

general 0.1 lbs/MBtu standard: electrostatic precipitator, pulse jet fabric filter, reverse gas fabric filter, and slip stream fabric filter. (Ex. 15, App. F, pp. 4-10 -- 4-12.) Therefore, technical feasibility is not at issue in this proceeding.

Economic Impact

Because Winnetka does not dispute that it is technically feasible to meet the 0.1 lbs/MBtu general standard, the heart of this case is the economic reasonableness of controlling the particulate emissions from Winnetka's electric plant so as to meet that general standard. Winnetka argues that the cost of installing controls is "enormous", and that the slight decrease in particulate emissions which could be obtained by such installation does not justify the cost. (Petition, p. 10; Public Comment (P.C.) #2, pp. 9-10.) Thus, Winnetka maintains that compliance with the 0.1 lbs/MBtu general standard is not economically reasonable for it.

Winnetka's electric utility is a profitable operation, with a net income of \$1,287,059 for fiscal year 1987. (Ex. 16, 1987 report, p. 9.) Every year for at least the past ten years the electric utility has transferred funds to the Village's general fund as a payment in lieu of taxes. That amount has ranged from \$75,000 in 1978 to \$350,000 in 1977. In fiscal year 1987 the electric utility paid \$300,000 into the general fund, and the 1988 payment is estimated to be \$350,000. (Ex. 16, 1987 report, p. 7; Ex. 17.) As Winnetka's 1987 financial report states, "[t]he annual transfers from the utilities to the General Fund, as a payment in lieu of taxes, results in a reduction of the Village property tax levy and is, [sic] therefore, of benefit to all Village residents." (Ex. 16, 1987 report, p. 7.) Mr. McInturff explained that the theory behind this payment in lieu of taxes is that if a private utility served Winnetka, its property would be taxable. Since the Village owns the utility, such tax revenue is foregone. Thus, the payment by the electric utility is meant to make up some of that lost revenue. (Tr. II, p. 127.) The electric utility does not make such a payment to any other taxing body. (Tr. II, pp. 127, 131.) There is currently a "reserve" of \$3.9 million in retained earnings in the electric utility's operating fund. (Tr. I, p. 27.)

As previously noted, Winnetka submits that the cost of adding control equipment to Boilers 7 and 8 to comply with the general rule would be between \$2.7 to \$4.4 million, with additional annual operating costs between \$26,000 and \$32,000 per year. (P.C. #2, p. 9.) The economic impact study (EcIS) performed in the general rulemaking (R82-1(A)) concluded in 1983 that the cost for such controls would be \$2,324,000, plus annual operating costs of \$153,500, for an annualized cost of \$432,400. (The Economic Impact of Proposed Regulation R82-1 (June 1983), Table IV-2.) At hearing, the Agency asked why, with

a \$3.9 million reserve in the electric fund which earns \$250,000 to \$280,000 in interest per year, Winnetka cannot pay \$432,400 in annualized costs to comply with the general rule. Mr. McInturff testified that the reserve fund is used for operating reserve, to replace or repair equipment in an emergency, and for site improvements. A portion of the reserve fund is to be used to put pollution control equipment on Boiler 7, if the instant petition is granted. (Tr. I, pp. 217-219.) Mr. McInturff stated that the reserve fund is earmarked for upcoming uses and "is not available for funding the difference in cost of buying more power from Edison or for meeting an unnecessarily stringent .1 rule." (Tr. II, p. 109.)

At both hearings there was discussion of the electric rates charged by Winnetka compared to rates charged by Commonwealth Edison, which serves the area surrounding Winnetka. Comparison was done with residential rates for single family detached homes. Current rates are as follows:

	<u>Summer</u>	<u>Winter</u>
Winnetka	\$0.1004/kwh	\$0.0810/kwh
Commonwealth Edison	\$0.14165/kwh	\$0.07633/kwh (first 400 kwh)
		\$0.04786 (all kwh over 400)

(Ex. 15, App. J; Tr. II, p. 99.) Commonwealth Edison also charges an \$11.24 monthly customer charge for meter reading, billing, and accounting. Winnetka does not have such a charge, nor does it charge a fuel adjustment. Additionally, Winnetka does not charge a municipal utility tax. Most towns in the area tax utilities at a rate of about 5%. (Ex. 15, App. K; Tr. I, p. 257; Tr. II, p. 99.) Assuming level usage of 750 kwh per month over a year, the typical Winnetka resident will pay only 88.3% of the amount paid by a Commonwealth Edison customer. (Ex. 15, App. K.)

Winnetka contends that installation of fabric filters on Boiler 7 and 8 is not economically reasonable because installation of these filters would require the removal of Boilers 5 and 6. Winnetka maintains that it cannot afford such a loss of capacity. Winnetka anticipates a continued increase in the demand for electricity in the Village. The capacity of the electric plant, with use of Boilers 4 and 8 and the two diesel engines (as the plant now operates), is 25.3 MW. In 1983, the instantaneous peak was 21.7 MW. During the summers of 1986 and 1987, that peak rose to 25.3 MW, the maximum output of the plant. Mr. McInturff testified that as good utility operating practice, a 15% margin of reserve is to be maintained above the highest

system peak. This requires a current capacity of 29.1 MW at the Winnetka plant. The capacity of the plant with Boiler 7 permitted is 30.3 MW, 1.2 MW above the desirable level of 29.1 MW. Mr. McInturff stated that if recent growth is a clue to the future, Winnetka may outgrow that 1.2 MW cushion by 1989. He testified that Boilers 5 and 6 are required for long-term reserve, to maintain a match of boiler capacity to turbine capacity at 32.9 MW, and to allow a few more years before additional capacity may be required. Boilers 5 and 6 would be expected to be used only in system emergencies, perhaps one or two days a year. (Tr. I, pp. 188-89; P.C. #2, p. 8.)

Because of its need for the capacity furnished by Boilers 5 and 6, Winnetka contends that removal of these boilers would necessitate an immediate search for additional capacity. Mr. McInturff stated that replacement of Boilers 5 and 6 with an equivalent type of generation would cost \$1.2 to \$1.6 million per megawatt, or \$3.1 to \$4.2 million total, in addition to the cost of particulate control equipment. This would result in a total cost of \$5.9 million for control equipment and lost capacity. (Tr. I, p. 189.) Mr. McInturff also testified that there appears to be no room at the existing plant site for additional capacity, and that therefore it may not be possible to install equipment at any practicable price. (Tr. I, p. 190.)

Winnetka further argues that the removal of Boilers 5 and 6 would adversely affect its dealings with Commonwealth Edison. As previously noted, Winnetka currently purchases some electricity from Commonwealth Edison almost daily. These purchases are done on an economy transaction basis. An economy transaction is one where Winnetka buys power for less than it could generate that power. For example, if Winnetka can generate power for four cents per kilowatt hour and Commonwealth Edison can generate power for two cents per kilowatt hour, the two parties may agree to split the difference. Winnetka will buy power from Commonwealth Edison for three cents per kilowatt hour, so that Winnetka saves a penny and Commonwealth Edison makes a penny. (Tr. I pp. 202-203.) Economy transactions are the cheapest type of purchase, with the exception of maintenance transactions, which are scheduled in advance for maintenance purposes. However, Commonwealth Edison will only allow economy transactions to be made if the buyer (Winnetka) has the ability to generate all of its power needs. (Tr. II pp. 101-102, 154-155.) If Winnetka bought some power beyond its capacity, transactions would be done on a partial requirements basis. A partial requirements customer is required to pay a demand charge in addition to the cost of the power itself. The current demand charge is \$1.05 per kilowatt per week. (Tr. I pp. 206-207.) Thus, Winnetka argues that it must retain all available generating capacity in order to purchase power on an economy transaction basis. Mr. McInturff did state that Commonwealth Edison might allow Winnetka to make economy purchases at some

times (i.e. off-peak, when Winnetka can generate its needs), and not at other times. (Tr. II p. 155.)

In response to a hearing officer order, Winnetka addressed the issue of projected electric rates if power must be purchased, fully or partially, from another utility. The Village first stated that if it purchased all of its power needs from Commonwealth Edison, it (Winnetka) would have to agree not to produce any power on its own. (Tr. II pp. 100, 146-47.) This would result in a large cost difference. In 1987 the Winnetka generating plant provided power to the Village at a cost of \$2,778,103, or 3.5 cents per kilowatt hour. Commonwealth Edison charges about 5 cents per kilowatt hour when it sells power on a total requirements basis. Under such a total requirements contract, Winnetka would have paid \$4,246,182 for power in 1987. (Tr. II p. 100; Ex. 15, App. B, C and D.) Winnetka further stated that it presently has no guarantee that Commonwealth Edison will sell power on demand. Because Winnetka has the same climatic conditions as Commonwealth Edison's service area, Winnetka submits that the times it needs to purchase power are the same times that Commonwealth Edison is least likely to have excess power available for purchase. Thus, Winnetka asserts that partial requirements purchases are not a realistic option. (Tr. II, p. 101.) Mr. McInturff testified that in order to offset the cost of a total requirements contract, Winnetka would have to set approximately the same rate as Commonwealth Edison plus five percent in lieu of a utilities tax. He stated that at the least, this would provide comparable service to Village residents at substantially greater cost. Mr. McInturff further opined that such a change might lead to decreased service because Commonwealth Edison has historically had more and longer power outages than Winnetka. (Tr. II pp. 102-103.)

In response to Winnetka's claims of economic unreasonableness, John Leslie presented testimony from Dr. Gary Skoog, who has a Ph.D. in economics from the University of Minnesota. Inter alia, Dr. Skoog examined how Winnetka could finance the cost of control equipment so as to continue to provide power at a reasonable cost. Dr. Skoog's testimony was based upon the annual cost of a pulse jet fabric filter for Boilers 7 and 8 as estimated in the HDR report. In 1985 that annual cost was \$284,800. Dr. Skoog allowed for a 15 percent price increase, resulting in a 1988 annual cost of approximately \$327,500. Dr. Skoog testified to four broad strategies for financing the fabric filter equipment: (1) raising electric rates so that Winnetka residents pay rates comparable to those paid by their neighbors; (2) imposing a five percent utility tax, as neighboring communities do; (3) modestly raising its property tax rate; or (4) a combination of the above options.

Dr. Skoog first testified that financing the entire \$327,500 annual cost through increased property tax rates shows that

compliance with the general standard is economically reasonable. (Tr. II pp. 161-163.) He provided the following list of 1986 property tax rates for Winnetka and surrounding communities:

Wilmette #37	\$ 9.436
Wilmette #39	9.757
Glencoe #35	9.933
Winnetka #36	10.227
Glencoe #36	10.300
Wilmette #38	10.392
Kenilworth #38	10.787
Winnetka #38	10.800
Winnetka Park (Kenilworth)	11.092
Evanston	12.030
Highland Park	13.67
Lake Bluff	13.81
Lake Forest	15.94

(Tr. II p. 161; Ex. 29.) (The number following a community's name is a school district.) Dr. Skoog concluded that if the entire annual cost of the fabric filters was financed through property taxation, those currently paying \$10.227 in Winnetka #36 would pay \$10.989, and those in Winnetka #38 now paying \$10.800 would pay \$11.605. Dr. Skoog stated that these increased tax rates would clearly keep Winnetka within the mid-range of its neighbors and impose no undue burdens on its residents. (Tr. II pp. 162-163.) Dr. Skoog admitted that if, as Mr. McInturff had testified, the fuel cost savings of \$157,000 and the electricity cost savings of \$20,000 estimated by HDR in 1985 had disappeared, the annual cost of the equipment would be closer to \$461,000. However, Dr. Skoog testified that such a figure would bring property taxes up into the \$11 range, which would hardly change Winnetka's rank and still leaves four neighboring communities with higher tax rates. (Tr. II pp. 169-175.)

Dr. Skoog next stated that raising the price of electricity to the rates charged by Commonwealth Edison would add \$688,966 to the electricity fund in the short run and \$399,807 in the long run. Dr. Skoog pointed out that both of these figures are greater than his assumed annual cost of \$327,500. Therefore, Dr. Skoog concluded that electric rates could be raised by a lesser amount, keeping Winnetka's rates below those charged by Commonwealth Edison, while still financing the fabric filter equipment. (Tr. II p. 163; Ex. 23, App. A.) If a five percent utility tax was adopted by Winnetka, Dr. Skoog stated that \$262,777 of additional revenue would be generated in the short run, with \$173,583 per year added in the long run. Thus, Dr. Skoog testified that a sizable fraction of the financing could be done merely by adopting the same five percent utility tax commonly used in the area. (Tr. II p. 164; Ex. 23, App. A.) Dr. Skoog further pointed out that although he found the pulse jet

fabric filter alternative to be "economically feasible", other alternatives recommended by HDR, such as slip stream fabric filters, would cost less than the pulse jet alternative while providing compliance with the general 0.1 lbs/MBtu limitation. (Tr. II p. 162.)

Dr. Skoog also examined the likely effect on electric rates and/or property tax rates in Winnetka if the Village could no longer operate some or all of its boilers. He calculated that if all electricity were bought from Commonwealth Edison on an exclusive contracts basis and distributed at present Winnetka rates, a shortfall of \$1,468,079 would occur. (Ex. 23, App. B,C.) Dr. Skoog stated that this shortfall could be financed by increasing property tax rates in Winnetka #36 to \$13,643 and rates in Winnetka #38 to \$14,407. These rates would still be lower than the tax rate in Lake Forest. However, Dr. Skoog testified that this alternative would be strongly inferior to installing pulse jet fabric filter equipment, as discussed above. In sum, Dr. Skoog concluded that the installation of pulse jet fabric filter equipment "is easily affordable, whether financed by a modest property tax increase, a modest utility tax, a modest rate increase or some combination of the three." (Tr. II p. 166.)

The Agency believes that Winnetka's petition for site specific limitation is not economically justifiable. (P.C. #3, p. 3.) The Agency points out that customers of Winnetka's electric utility pay significantly less than their neighbors who buy power from Commonwealth Edison: about 85 to 87 percent as much, since Winnetka does not charge a utility tax. The Agency also states that Winnetka's electric utility is very profitable and pays quite a bit of money to the Village, which produces a tax savings. The Agency points out that in fiscal year 1987 the utility paid \$300,000 to the Village in lieu of taxes and carried about \$3.9 million in a "reserve fund". The Agency argues that these monies could be best put to use to comply with generally applicable pollution control requirements, instead of providing savings to Winnetka property owners. Thus, the Agency contends that with the utility's profit and retained savings, Winnetka can reasonably afford to comply with the 0.1 lb/MBtu limitation. (P.C. #3, pp. 4-5; Tr. I pp. 217, 220-221.)

Conclusions

After a thorough review of the record in this case, the Board does not believe that it is economically unreasonable for Winnetka to comply with the general 0.1 lbs/MBtu particulate emission limitation. This decision is based upon a number of factors.

First, the Board notes that it is uncontroverted that customers of Winnetka's electric utility pay only about 88% of

what neighboring Commonwealth Edison customers pay for electricity. Rates are lower for Winnetka customers, who also do not pay a monthly service charge or a fuel adjustment. Additionally, Winnetka customers are not subject to a utility tax, as are the residents of the surrounding communities. Throughout the course of this proceeding Winnetka has repeatedly emphasized that it wishes to keep its charges below those of Commonwealth Edison, and argues that the Board should not cause Winnetka's customers to pay more for power just because Commonwealth Edison's rates are higher. (P.C. #4, p. 7.) The Board agrees with this claim as far as it goes. However, on this record the Board cannot excuse compliance with the general limitations on the grounds of economic unreasonableness when utility customers in the area around Winnetka pay more to obtain power from a company which does comply with the general standard.

Furthermore, the payments made by the utility to the Village in lieu of taxes (\$300,000 in fiscal year 1987) help reduce the property taxes paid by residents of Winnetka. As Winnetka's annual financial report for fiscal 1987 points out, these "transfers from the utilities to the General Fund, as a payment in lieu of taxes, result in a reduction of the Village property tax levy and [are], therefore, of benefit to all Village residents." (Ex. 16, 1987 report, p. 7.) The electric utility's transfer is expected to increase in fiscal year 1988, perhaps further reducing property taxes. The Board recognizes that this transfer, or payment in lieu of taxes, is intended to compensate the Village for taxes lost because the site of the electric utility is owned by the Village and not by a private party which would be assessed property taxes. As the Agency pointed out, a private utility at that site would pay about \$350,000 in taxes. However, only about \$125,000 of that amount would go to the Village, with the rest being distributed to other taxing bodies such as the park and school districts. (Tr. I, p. 129.) Thus, Winnetka receives a double benefit: the Village receives the advantages of operating its own utility while at the same time receiving a payment into its general fund higher than would be paid by a private company. Presumably, this reduces property taxes more than if a private company operated the electric utility.

Dr. Skoog testified that the installation of a pulse jet fabric filter is indeed affordable for Winnetka. He concluded that this equipment could be completely financed by: (1) raising electric rates but still keeping Winnetka's rates below those charged by Commonwealth Edison; (2) raising property taxes, which would still be in the mid-range of the rates in surrounding communities or (3) a combination of these, perhaps in conjunction with the imposition of a utility tax. (Tr. II pp. 161-166.) Dr. Skoog's analysis did not address the fact that the electric utility is a profitable entity which has a \$3.9 million operating fund which earns between \$250,000 and \$230,000 in interest per

year. The Board believes that, at the least, some combination of these options could be used to finance particulate control equipment without burdening Winnetka residents. Again, the Board must point out that it does not believe that Winnetka residents should pay increased taxes or electric rates simply because taxes and rates in surrounding communities are higher. However, the Board cannot find that the cost of particulate control equipment is economically unreasonable where the utility has a \$3.9 million operating fund which earns \$250,000 to \$280,000 per year, customers of the utility pay lower taxes and lower electric rates than their neighbors, and the costs of control equipment could be financed through taxes, rates, or a combination of these and still not exceed the costs being paid in surrounding communities.

The Board further notes that the \$2.7 to \$4.4 million figure asserted by Winnetka is evidently derived from the 1983 EcIS in the general rulemaking (R82-1(A)). Winnetka does not explain why it apparently does not accept the figures contained in the 1985 HDR report done specifically for Winnetka. (Ex. 15, App. F.) That study concluded that there are four alternative control options which could be installed with annualized costs of less than \$500,000 per year. (Ex. 15, App. F, pp. 4-10 -- 4-12.)

The Board is also not convinced by Winnetka's claim that compliance is economically unreasonable because the installation of fabric filters would require the removal of Boilers 5 and 6, thus reducing the plant's capacity and affecting Winnetka's relationship with Commonwealth Edison. Winnetka has never explained why it would not choose to install a slip stream fabric filter instead of pulse jet fabric filter. According to the HDR report, a slip stream fabric filter will provide compliance with the 0.1 lbs/MBtu standard at a significantly lower cost than the pulse jet fabric filter. The HDR study estimated capital costs of \$1,111,000 and a total annual cost of \$33,900 for the slip stream filter, as opposed to capital cost of \$2,362,000 and a total annual cost of \$284,800 for the pulse jet filter. (Ex. 15, App. F, Table 4-5.) Even allowing for an estimated 15 percent cost increase, the cost differential between the two options remains the same. Perhaps more importantly, installation of a slip stream fabric filter would require the removal of only Boiler 6. Mr. McInturff testified that it may be possible for Winnetka to make economy purchases at some times (i.e. when Winnetka can generate its needs) and partial requirements transactions at other times. (Tr. II p. 155.) It might be cheaper to pay a demand charge for the capacity furnished by Boiler 6 than to equip it with pollution control equipment, which would be necessary if Boiler 6 is to be permitted in the future. (The Board notes that Mr. McInturff has repeatedly stated that the capacity of Boilers 5 and 6 will be needed for only a handful of days at some time in the future. (Tr. I pp. 188-189, 225.)) The Board does not mean to choose the control equipment installed by Winnetka. The point is that Winnetka has

not shown that compliance with the general standard is economically unreasonable.

In its closing comments Winnetka argues that its request for a site specific rule should be granted based simply upon the "environmental acceptability" of the proposal. Winnetka contends that the record clearly shows that there is no environmental benefit to be gained by denying it a permanent 0.25 lbs/MBtu rule, and that the Board should, as a matter of law, grant a site specific rule which will cause no significant environmental harm. (P.C. #2, p. 5.) Winnetka asserts that to do otherwise would be contrary to the manifest weight of the evidence and to Section 27 of the Environmental Protection Act (Act), which allows the Board to adopt different regulatory provisions "as required by circumstances for different contaminant sources and different geographical areas." (Ill. Rev. Stat. 1987, ch. 111^{1/2}, par. 1027.) In essence, Winnetka maintains that the cost of adding particulate control equipment is economically unreasonable because its emissions do not violate the ambient air quality standards for particulates. The Board disagrees with these arguments.

Section 8 of the Act states in part:

It is the purpose of this Title to restore maintain, and enhance the purity of the air of this State in order to protect health, welfare, property, and the quality of life and to assure that no air contaminants are discharged into the atmosphere without being given the degree of treatment of control necessary to prevent pollution.

(Ill. Rev. Stat. 1987, ch. 111^{1/2}, par. 1008.) Section 10 of the Act provides:

The Board pursuant to procedures prescribed in Title VII of this Act, may adopt regulations to promote the purposes of this Title. Without limiting the generality of this authority, such regulations may among other things prescribe:

- a) Ambient air quality standards specifying the maximum permissible short-term and long-term concentrations of various contaminants in the atmosphere.
- b) Emission standards specifying the maximum amounts of concentrations of various

contaminants that may be discharged into the atmosphere.

* * * *

(Ill. Rev. Stat. 1987, ch. 111¹/₂, par. 1010.)

Thus, it is obvious that the promulgation of emission limitations and air quality standards are two distinct methods by which the Board may act to "restore, maintain, and enhance the purity of the air" in Illinois. Both emission limitations and air quality standards represent benchmarks which must be reached in pursuing the goals of the Act. Compliance with one benchmark does not negate the necessity for compliance with the other; both have individual worth in achieving and maintaining a high quality environment. As David Currie, the first Chairman of the Board, wrote when the Board adopted water quality standards and effluent limitations for mercury:

[I]t would be folly to set effluent standards at such a level as to permit existing pollution sources in every case to degrade the water to the level set by the standard. To do so would transform standards designed to protect the environment into licenses to degrade. It would ignore the fact that a water quality standard prescribes not the ideal condition of the environment, but an outer limit of dirtiness that should be avoided if it reasonably can be. It would commit us to the philosophy of allowing the environment to be as dirty as we can bear it, when our correct philosophy should be to make the environment as clean as we reasonably can. Finally, to allocate to existing users the entire water-diluting capacity of the environment would leave no room for new industry, encourage inefficient practices, and either discriminate against new entrants or require a re-examination and tightening of effluent limit whenever a new facility was contemplated.

Mercury Standards, 1 PCB 411, 414 (R70-5, March 31, 1971.) The Board believes that Professor Currie's discussion applies with equal force to air quality standards and emissions limitations, and to this proceeding.

The Board recently denied a petition by Schrock/A Division of White Industries for site specific relief from the 0.1 lbs/MBtu rule. In that case, Schrock argued that it was not economically reasonable for it to comply with the general rule at

a cost of \$80,000 because its emissions do not cause a violation of the ambient air quality standards for particulates. The Board agreed that Schrock's emissions apparently do not threaten the status of the surrounding area as an "attainment area", but refused to grant Schrock's request for site specific relief. The Board stated:

"If the Board granted relief to Schrock in this instance, it would be establishing a precedent which could undermine the whole regulatory process. The implication would be that any source which would incur added expense, if forced to comply with the emission limits of a rule, would be entitled to relief merely upon the showing that its noncompliance would not cause a violation of an air quality standard. The result of such a policy would be a series of exemptions resulting in the increased degradation of air quality, since under this interpretation emission limitations would be viable only in instances where a source failed to show that an exemption would not lead to violation of air quality standards. Such a holding would clearly contravene the intent of the Act."

(Proposed Site Specific Particulate Limitations for Schrock's Sawdust Fired Boilers in Arthur, Illinois, R87-12, February 25, 1988, slip op. at 7.)

Winnetka attempts to distinguish the instant proceeding from the Schrock proceeding by arguing, inter alia, that: (1) the 0.1 lb/MBtu rule already applied to Schrock; (2) Schrock never objected to or participated in the general rulemaking; (3) Schrock sought relief from the general rule only after its contractor's control equipment failed to provide compliance; and (4) Schrock's costs to comply with the general rule were only \$80,000 as opposed to Winnetka's estimated costs of between \$2.7 and \$4.4 million plus increased operating costs. (P.C. #4, pp. 7-8.) The Board does not agree that the two proceedings are distinguishable on the grounds that Schrock never objected to the general rule to which it was subject. Under Section 27 of the Act, the Board is to consider the "technical feasibility and economic reasonableness" of a particular regulation. Whether a petitioner previously objected to a regulation, whether that petitioner was subject to that general standard, and what was the impetus for a rulemaking petition are simply not issues in any rulemaking. Likewise, the Board is not convinced by Winnetka's bare comparison of compliance costs. The question of economic reasonableness does not revolve around a mere look at what compliance with a given rule will cost. Instead, economic reasonableness must be determined by considering all the

circumstances of the proceeding together. To hold otherwise would result in a situation where any compliance cost over a certain amount, be it \$5000 or \$5 million, would almost automatically be found economically unreasonable. Thus, the Board believes that its decision in Schrock is applicable to the instant proceeding.

Additionally, the Board must again point out that Winnetka has failed to explain why it continues to quote a compliance cost of \$2.7 to \$4.4 million in capital costs plus increased operating costs. The HDR study concluded that there are four alternatives which would provide compliance at annualized costs of between \$33,900 and \$486,500. Winnetka has not provided annualized costs for its figures, making comparisons impossible.

For all of the above reasons, the Board finds that it was both technically feasible and economically reasonable for Winnetka to comply with the general 0.1 lbs/MBtu particulate emission limitation set forth in 35 Ill. Adm. Code 212.204. Therefore, Winnetka's petition to make permanent its interim site specific regulation is denied.

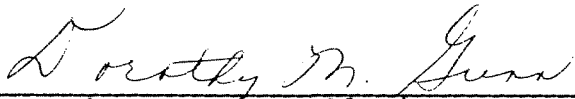
ORDER

The petition for site specific rulemaking filed by the Village of Winnetka on September 12, 1986 is hereby denied.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1987, 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.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 4th day of August, 1988, by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board