

ILLINOIS POLLUTION CONTROL BOARD

March 26, 1975

CITY OF FAIRFIELD, )  
Petitioner, )  
 )  
v. ) PCB 74-383  
 )  
ENVIRONMENTAL PROTECTION AGENCY, )  
Respondent. )

Mr. Richard C. Cochran, attorney for Petitioner.  
Mr. Michael Ginsberg, attorney for Respondent.

OPINION AND ORDER OF THE BOARD (by Dr. Odell)

On October 25, 1974, the City of Fairfield filed its Petition for Variance with the Illinois Pollution Control Board (Board). On October 31, the Board passed an Interim Order requesting information on the environmental impact of the particulate emissions on the community. Petitioner was given 45 days to submit this information with the 90-day requirement for final Board action under Section 38 of the Illinois Environmental Protection Act (Act) to run from the filing of the required additional information. On November 1, 1974, the Illinois Environmental Protection Agency (Agency) objected to the grant of a variance and filed a Motion for Hearing. Fairfield sought a time extension from the October 31 Interim Order date on December 12, 1974. The Board granted a 15-day extension on December 19. Fairfield's Amended Petition was received by the Board on January 2, 1975. The Agency filed its Recommendation of denial on February 4, 1974, ten days before the hearing took place.

In City of Fairfield v. Environmental Protection Agency PCB 73-355; 10 PCB 53 (November 8, 1973) the Board granted the Petitioner a one year variance to operate its coal-fired boilers #1, #2, and #3 in excess of the allowable particulate emission rates under the Air Pollution Regulations (Chapter Two). The Order provided that:

- "1. The subject boilers shall be operated only in unusual, emergency situations wherein the primary generating machines and the interconnection tie line are incapable of producing the power demanded;
- "2. Petitioner shall file quarterly reports with the Agency. Said reports shall indicate all operations of boilers #1 and/or #2 and/or #3, the date of said operation, kilowatts generated by each generator on each day of operation, generators forces out of service on each day of operation of boilers #1 and/or #2 and/or #3 and the reason for

the forced outage and the power demand to supply customers on each day of operation of boilers #1 and/or #2 and/or #3."

The rationale for not ordering compliance was that the boilers were only operated in emergencies and that compliance would cost \$300,000 to \$450,000.

Fairfield presently owns and operates the Fairfield Municipal Electric Power Plant which supplies the electrical needs of the companies and 6,000 residents within a two-mile radius of the City. Fairfield has four coal-fired boilers which drive four steam turbines. The City also has two diesel generators. An interconnection tie-line with Southern Illinois Power Cooperative (SIPCO) is an additional source of electrical power. Petitioner sought a one-year variance from Section 9(a) of the Act, Rule 103(b) of Chapter Two which requires an operating permit, Rule 104 of Chapter Two which requires a compliance plan, and Rule 203(g)(1)(B) of Chapter Two which limits particulate emissions to 0.20 pound per million BTU input per hour. Petitioner also sought a one-year variance from Rule 2-2.53 of the Rules and Regulations Governing the Control of Air Pollution. This Rule limits emissions to 0.8 pound of particulates per million BTU input per hour. The variance was requested to permit the intermittent operation of its four coal-fired boilers during periods of emergency or when its two diesel generators and the SIPCO tie-line could not supply the needs of consumers. The tie-line can normally provide 10,000 KW although Fairfield is only guaranteed 6,825 KW. The diesel generators have a combined electrical capacity of 4,000 KW. The four coal-fired boilers have a capacity of approximately 12,500 KW.

The Petition for Variance included various tables showing the kinds of fuels and the hours of production of the electrical sources utilized by Fairfield over the last five years to supply its consumers. The tables indicate a shift towards less use of the coal-fired boilers. The quantities and percent of energy provided by each fuel for the past five (5) years and five (5) months are as follows:

Fiscal Year Ending April 30th	Coal Pounds	Fuel Oil Gallons	Gas MCF	Percent of Total Energy Provided by Each Fuel		
				Coal	Fuel Oil	Gas
1970	71,214,100	53,323	38,624.0	94.5	0.9	4.6
1971	74,118,480	118,276	59,580.0	91.4	1.9	6.7
1972	74,155,000	171,012	63,733.7	90.3	2.6	7.1
1973	53,982,600	202,038	25,964.0	95.5	0.3	4.2
1974	31,315,000	99,012	18,841.2	91.3	3.7	5.0
1st 5 Mo. of 1975	2,316,100	1,969	500.3	97.0	1.1	1.9

The hours of operation for each of the boilers at the Plant over the past five (5) years and five (5) months are as follows:

Fiscal Year Ending April 30th	Hours Operated - Boiler No.				Total
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
1970	1,700	1,777	3,424	5,340	12,241
1971	4,565	977	4,493	4,074	14,109
1972	5,730	1,644	5,976	2,604	15,954
1973	3,408	1,920	2,196	4,224	11,748
1974	3,528	5,798	0	192	9,518
1st 5 Mo. of 1975	0	0	1,908	0	1,908

The breakdown of the electrical production comparing the steam plant, engine plant and interconnection for the past five (5) years and five (5) months is as follows:

Fiscal Year Ending April 30th	Source of Power (KW-HR)				Percent of Total		
	Steam	Engine	Tie-Line	Total	Steam	Engine	Tie-Line
1970	39,129,250	4,575,000	-	43,704,250	89.5	10.5	-
1971	39,135,750	7,661,550	-	46,797,300	83.6	16.4	-
1972	38,307,750	8,588,750	-	46,896,500	81.7	18.3	-
1973	24,112,750	5,159,850	19,896,351	49,168,951	49.0	10.5	40.5
1974	12,782,100	3,096,250	34,210,188	50,088,538	25.5	6.2	68.3
1st 5 Mo. of 1975	3,860,450	1,572,750	17,555,726	22,988,926	16.8	6.8	76.4

On February 4, 1975, the Agency recommended that the variance be denied. The Agency included in its Recommendation the following table which details the calculated emissions of particulates and SO<sub>2</sub> from the four coal-fired boilers:

Boiler No.	Allowable Partic- ulates Rule 2-2.53	Allowable Partic- ulates Rule 203(g)	Allowable SO <sub>2</sub>	Calculated Partic- ulates	Calculated SO <sub>2</sub>
	lb/10 <sup>6</sup> BTU	lb/10 <sup>6</sup> BTU	lbs/10 <sup>6</sup> BTU	lbs/10 <sup>6</sup> BTU	lbs/10 <sup>6</sup> BTU
1	0.8	0.27	6.0	2.0	3.69
2	0.8	0.27	6.0	2.0	3.69
3	0.8	0.20	6.0	1.5	3.69
4	0.8	0.20	6.0	0.78	3.69

The Agency recommended that the Board deny the variance for several reasons. First, violations have existed since 1970. Second, the Petitioner has violated the Board Order in PCB 73-355 by failing to submit quarterly reports to the Agency. Third, Petitioner during the period of the variance in PCB 73-355 operated its boilers while the diesel generators were not utilized, in violation of condition two of the Board Order. Fourth, in contrast to Fairfield's claims in Ex. C of its Petition for Variance, no pollution control devices exist on boilers 1, 2, and 3. The cyclone on boiler 4 was estimated by the Agency to have an efficiency of 85%; not 95% as claimed by the City. Fifth, the Petitioner failed to substantiate its claim that it would take \$400,000 to \$600,000 to bring the four boilers into compliance with Rule 203 of Chapter Two.

The Agency was of the opinion that none of the four boilers will be able to meet the May 30, 1975, Rule 203 particulate standard. All four boilers, assuming similiar coal analysis, will be in compliance with the May 30, 1975, SO<sub>2</sub> standards. Boiler No. 4, based on calculations, is in compliance with existing Rule 2-2.53 of the Rules and Regulations governing the Control of Air Pollution. The Agency received no complaints from citizens concerning the grant of a variance.

The hearing was held on February 14, 1975, at the Fairfield Council Chambers, City Hall, Fairfield, Illinois. The coal-fired boilers have been idle since September 1974 (R. 14) and probably will not be needed this winter. A table on page 6 of the Petition for Variance indicated the hours of operation during recent periods for the four coal-fired boilers:

	Hours of Operation			
	<u>Boiler #1</u>	<u>Boiler #2</u>	<u>Boiler #3</u>	<u>Boiler #4</u>
December, 1973	228	516	0	0
January, 1974	0	744	0	0
February, 1974	0	672	0	0
March, 1974	0	122	0	0
April, 1974	0	0	0	0
May, 1974	0	0	0	0
June, 1974	0	0	0	0
July, 1974	0	0	564	0
August, 1974	0	0	744	0
September, 1974	0	0	600	0

The Petitioner did not refute the Agency's claim that the coal-fired boilers were operated during periods when the diesel generators were available. Petitioner pointed out that it takes from eight hours to three days to successfully start up the boilers and turbines (R.26). The steam plant was operated at base load generation levels (thirty to forty percent of full rate) to enable it to supply estimated consumer needs (R.44). This problem has now been solved. Petitioner completed installation of a 125 HP diesel engine in October 1974 to provide sufficient low pressure steam to maintain boiler heat (R.23). This engine cost \$20,000 to \$30,000 (R.24).

The City signed an agreement with SIPCO in June 1974 (Pet. Ex. 2) giving the City 6,825 KW of firm purchase power. The agreement allows Fairfield to contract with other electric supplies to obtain additional power over its tie-line with SIPCO (R. 19, 20). However, the SIPCO tie-line has a carrying capacity of only 10,000 KW (R. 76, 77). It is doubtful that this line will have additional capacity before 1980 (R. 78).

Although the City has approximately 14,000 KW available without using its coal-fired boilers, it appears unlikely that Petitioner will be able to avoid their use for several years to come. First, energy demands in the area are increasing; projected estimates for peak loads during summer 1975 are 17,000 to 18,000 KW (R. 69). During the summer of 1975, Petitioner estimated that it will operate its boilers 300 hours (R. 90, 91). Second, under the June 1974 agreement with SIPCO, the City must provide electricity to SIPCO if any SIPCO consumers suffer any discontinuity of electrical service (R. 83, 94). Petitioner lacks funds to bring its facilities into compliance with Chapter Two. Additional bonds to finance improvements to the City's facilities cannot be floated before 1976 (R. 107). Fairfield is making every effort to get all its electrical energy from SIPCO, not only to comply with the Act and regulations, but also because it is cheaper to buy the power than to have its own coal-fired boilers supply it (R. 149).

Petitioner introduced calculations to show the effect of its emissions on air quality at ground levels (R. 125, 128). The validity of the calculations is doubtful because of the assumptions underlying the calculations as brought out on cross-examination (R. 133-189). Petitioner stated that if a variance were granted, it will attempt to satisfy all Agency conditions suggested in its February 4, 1975, Recommendation. The City also agreed to undertake a study to determine the accuracy of the estimated cost figure of \$400,000 to \$600,000 to achieve compliance (R. 52, 150).

We grant the variance for one year as requested by the Petitioner, but subject to the terms recommended by the Agency. Although a specific compliance plan does not exist, recent good faith efforts plus the complexity of the problem convince us that a variance is warranted. Studies will be immediately undertaken to determine the feasibility of compliance. We believe it would impose an unreasonable hardship on the City to require it to curtail essential services to local citizenry when the impact of the additional emissions does not appear substantial. While previous City administrations have failed to live up to their responsibilities under the Act, the interest of local citizens prompts us to give the Petitioner one final opportunity to make good faith efforts to control its air pollution problem.

#### ORDER

Petitioner, City of Fairfield, is granted a Variance from Section 9(a) of the Act, Rules 103, 104, and 203(g)(1)(B) of Chapter Two, and Rule 2-2.53 of the Rules and Regulations Governing the Control of Air Pollution from November 8, 1974, until November 7, 1975, subject to the following conditions:

(a) Petitioner shall submit a detailed cost analysis of a control strategy to bring the four boilers into compliance with Rule 203 of Chapter Two. The study shall include at a minimum:

1. Cost of controls;
2. Cost, availability, and feasibility of alternate sources of power;
3. A timetable for bringing the boilers into compliance;
4. A retirement program for boilers 1-4, if necessary.

This report shall be submitted to the Agency within 120 days of the adoption of this Order. This report shall be mailed to: Environmental Protection Agency, Control Program Coordinator, Division of Air Pollution Control, 2200 Churchill Road, Springfield, Illinois 62706.

(b) Petitioner shall operate its coal-fired boilers only when the following conditions exist:

1. Petitioner's estimated peak for the day exceeds 10,825 KW; or
2. Petitioner has obtained all available power from other systems through the tie-line with Southern Illinois Power Cooperative; or
3. Petitioner is utilizing the tie-line at 6,825 KW and its diesel generators at 4,000 KW.

(c) Beginning May 1, 1975, Petitioner shall submit monthly reports to the Agency at the address in condition (a) above. The reports shall detail:

1. The date of operation of each coal-fired boiler;
2. Kilowatts generated by each boiler on each day of operation;
3. The peak demand on each day of operation of the coal-fired boilers;
4. The amount of power provided by the tie-line on each day of operation of the coal-fired boilers;
5. The amount of power provided by the diesel units on each day of operation of the four coal-fired boilers.

(d) Petitioner shall submit a report detailing the City's projected growth between 1976 and 1985 for electricity demand and detailing a program to supply the electrical needs of the City during that period. This report shall be submitted to the Agency within 120 days of the adoption of this Order. This report shall be mailed to the address indicated in condition (a) above.

(e) Petitioner shall carry out tests to determine the environmental impact of particulates from the use of the coal-fired boilers during the summer months of 1975. All tests shall be completed by September 1, 1975, and submitted to the Agency at the address indicated in condition (a) above by October 1, 1975.

IT IS SO ORDERED.

Mr. Henss dissents.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 26<sup>th</sup> day of March, 1975, by a vote of 3 to 1.

  
Christan L. Moffett