BEFORE THE POLLUTION CONTROL BOARD

OF THE STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY, Complainant,	)	
v.	)	NO. PCB 70-9
CITY OF SPRINGFIELD, Respondent.	)	

BRIEF OF THE CITY OF SPRINGFIELD

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I

INTRODUCTION

Many of the statements in the introductory part of the Agency's brief are correct, but sufficient inaccuracies and misstatements of fact are present to require correction. There is no Springfield City Water, Light and Power Company. The City of Springfield, Illinois, owns and operates an electric power generating plant and a water purification plant on the shores of Lake Springfield southeast of the city. Construction of this plant started in 1935 in an area which was completely rural in char-

acter.

The question of whether the plant operates at a profit will be discussed in a subsequent portion of this brief.

While the description of the physical equipment of Lakeside Plant I is substantially correct, Lakeside II has four boilers, four generators, and four stacks. (T-25) In addition there is a new 300 foot stack with an electrostatic precipitator which will replace the four stacks of Lakeside II. (T-35) The statement that there are no air pollution devices on the four stacks of Lakeside I is not correct. When the boilers of stacks 1 through 4 of Lakeside I were installed, mechanical dust collectors which remove some of the particulate matter were also installed. (T-512)

The conversion of Lakeside I to an oil burning operation is far from being a tenuous proposition. The necessary engineering work was assigned to the engineering firm of Burns and McDonnell in March 1970; and the city established a target date of June 1, 1971, to have boiler number 4 of Lakeside I converted to oil (T-63-65) and to replace boilers 1, 2 and 3 with package type oil fired boilers. (T-66-67) A target date of June, 1972, was established for completion of this installation.

This plan has now been revised to include the conversion of boilers 2, 3 and 4 to oil firing, and the retirement of boiler #1. Contracts have been let for furnishing and installing all necessary equipment for this conversion, and the longest completion date of any of these contracts is 80

days from the contract date of March 9, 1971. Therefore, this conversion should be completed by May 28, 1971.

Although the description of the connection of boilers 5, 6,7 and 8 with stacks 5, 6, 7 and 8 of Lakeside Plant II is correct, the statement in footnote 2 at the bottom of page 2 that steam from one boiler can be diverted to other generators is incorrect. Boilers 7 and 8 have no connection with 1 through 6, and boiler 7 has no connection with boiler 8. (T-31-35) The city is proceeding at a rapid pace with the conversion of boilers 1 through 4 of Lakeside I, and contracts for this work have been entered into with equipment suppliers since the date of the hearing. There was substantial testimony produced to show the many efforts being made by the city to convert plant I to an oil-fired operation.

The Agency's effort to summarize the case by quoting the city's answers to interrogatories 2, 4 and 11, and apparently attempting to infer that the city was doing nothing to alleviate air pollution misses the mark widely, and in fact is not even on the target. The city's answer to interrogatory 4 was not correctly quoted by the Agency. The city's answer to this interrogatory referred to Exhibit 1 attached to the answers, which gave complete data on stack tests made on the Dallman plant. While no stack tests were made on either Lakeside plant, there was no reason for doing so until the work of installing further dust collecting equipment had been completed.

The Agency's summary of the pleadings is substantially correct. The Agency's assertion, however, in its final paragraph on page 4 of its brief as to lack of defense by the city is ridiculous to the extreme and is nothing more than a woeful attempt to shore up a case completely devoid of merit. The evidence produced by the city as well as the evidence brought out by the Agency fully illustrates and demonstrates a massive effort on the part of the city, undertaken long before the law under which it is being prosecuted was enacted, at an expense of millions of dollars, to clean up its stack discharges so as to be a good neighbor to those persons who were attracted to living near the city's power plant long after the location of the plant had been established and the facilities constructed. Mr. Porter, general superintendent for the city's electrical system testified that in 1965 the city began the design criteria on the Dallman plant and was very cognizant of air pollution in this regard. (T-380-381) Other professional engineers of high qualification and heavy experience testified to the work which had been under way since 1966, a large part of which has been performed. (Karl Wolfs, T-517-521)

The big point which the Agency misses or chooses to ignore is that an electric plant of the magnitude the city operates is not just a simple child's Erector set, on which parts can be changed instantaneously at the whim and fancy of the person playing with it. To make the substantial changes required on the city's electric plant to make a meaningful

air pollution control effort, months of engineering design work are needed, and many more months of time are required to have the designed equipment fabricated by manufacturers, installed, tested, and made operable.

II

THE CITY'S AIR POLLUTION PROGRAM

The City of Springfield through its electrical system superintendent, William Porter, became concerned with the subject of air pollution as early as 1963. (T-379) In 1965 when the city began the design criteria on the Dallman plant it was very cognizant of what it was going to do with reference to air pollution. (T-379-380) Provision was made for installation of a mechanical dust collector for the Dallman Plant even prior to the time the State of Illinois had established dust loading specifications. This dust collector has been highly efficient in removing particulate emissions, and its performance has surpassed specifications for particulate removal established by rule of the Pollution Control Board (T-396)

Space also was provided in the Dallman Plant design to install an electrostatic precipitator which will be installed by 1972. (T-382) The design criteria for the Dallman Plant was developed by the city's consulting engineers, Burns and McDonnell Engineering Company, of Kansas City, Missouri. (T-383) The engineers' initial report to the city, dated July, 1967, made recommendations for the city's air contaminant emission

reduction program, which the city immediately proceeded to implement and follow. Report No. 2 of the engineers dated July, 1968, (Agency Exhibit 5) made additional recommendations in order to bring the city's plant into compliance with later air pollution regulations established by the State.

It should be noted that the program originally submitted to and approved by the Air Pollution Control Board would have cost the city $1,100,000.00 (Agency Exhibit 4 and 5).

Since this first submission, the city has upgraded its program substantially and the final costs will be approximately $3,223,949. Included in this amount is $480,000 for the new 300 foot Lakeside stack, $265,000 for the Lakeside precipitator, $205,000 on the breeching and electrical work for the Lakeside precipitator, $265,100 for the Dallman 1 precipitator, $179,700 for the Dallman 2 precipitator, approximately $270,000 for Plant 1 conversion, approximately $120,000 for engineering and $1,439,149 for the gas turbine at Reynolds substation. The city will also have to spend substantial amounts of money each year maintaining and operating this equipment. The fuel costs alone will increase from 35¢ per million BTU to 80¢ per million BTU with the conversion to oil. This is the city the Agency accuses of having spent hardly any money in the areas of pollution control.

In 1967 after the State of Illinois had established dust loading levels and passed rules requiring programs to be developed, the city submitted a letter of intent to comply with such rules. In July, 1968, after receiving its engineer's report, the city submitted its program to the Technical

Secretary of the Air Pollution Control Board, and received approval of such program. (T-383-384) (EPA Exhibit 9) In fact considerable correspondence and exchange of technical information passed between the city and state during the years 1967-1968, as shown by various exhibits introduced by the Agency. (Agency Exhibits 3 to 16) These exhibits fully illustrate the efforts and difficulties of the city to install an air pollution control system.

After receiving notice of approval from the State of Illinois of the city's pollution control program, periodic reports were submitted to the office of the Technical Secretary of the Air Pollution control Board. (T-387) Unfortunately, however, the city was unable to meet the time limits which it specified in its program, but this failure was not due to any fault upon the part of the city. Equipment suppliers failed to meet delivery dates for various reasons. Necessary structural modifications on the Lakeside Power Plant building to accommodate the needed equipment proved to be far more difficult than originally contemplated. (T-389) The office of the Technical Secretary of the Air Pollution Control Board was kept fully advised by the city of difficulties being encountered and of steps being taken to remedy these difficulties and establish and conform to specified time completion schedules. At no time did any representative of the State of Illinois indicate disapproval of the city's program or the explanations and steps being taken by the city. (T-394) Up until the

time that the complaint in this proceeding was filed the city had never received any notice or information from the state indicating disapproval or withdrawal of the approval granted of its air pollution control program. (T-395)

III

REPLY TO THE AGENCY'S ALLEGATIONS

In its effort to convict the city in this proceeding of some violation, the Agency has concentrated the bulk of its fire on allegations of violation of Ringelmann regulations and particulate regulations. All of the proof on these allegations which the Agency produced, concerned observations made of the stacks of the Lakeside Plant, and calculations of emission rates from the Lakeside Plant.

The violations charged against the city specify infractions of the Rules and Regulations Governing the Control of Air Pollution. These rules and regulations were promulgated in accordance with the Illinois Air Pollution Control Act as amended, and apparently are conceded by the Agency to have been in full force and effect during the various times involved in this proceeding.

The rules are divided into two main categories. Chapter II provides rules for controlling existing pollution, while Chapter III provides rules for control of emissions from new equipment. Inasmuch as new equipment is defined as being that equipment on which the design was less than 50%

completed on April 15, 1967, or which is altered or modified such that the amount of air contaminant emissions is increased 15% or more, it is obvious that all of the equipment in the Lakeside Plants I and II must be considered as existing equipment since it was all installed prior to 1967 and has not been altered or modified to increase air contaminant emissions.

The Agency's Exhibit 10 which was admitted in evidence consisting of a letter dated November 18, 1968 from the technical secretary of the Air Pollution Control Board to the city consisted of notification that the city's air contaminant emission reduction program was approved by the Illinois Air Pollution Control Board at its meeting held on November 7, 1968. Mr. William Porter, superintendent of the city's electric system, testified that no subsequent notice was ever received by the city from the Air Pollution Control Board indicating withdrawal of such approval. (T-395) Significantly no attempt was made by the Agency in this proceeding to introduce any proof showing withdrawal of approval of the city's pollution control program.

Section 2-2.41 of the rules provides in part: "When an emission reduction program has been approved, the person receiving the approval shall not be in violation of this section provided that the approved program is being implemented." There was ample evidence from the testimony of the city's witnesses, William Porter, (T-387-397), Calvin Long, Resident Engineer (T-557-567) and A. F. Hartung, (T-719-721)

that the city was moving along as expeditiously as possible with implementation of its program. It is obvious that the word "section" in the foregoing quotation refers to Section 2 of Chapter II of the Rules, which takes in subparagraphs 2-2.1 through 2-2.54 only. Thus the Ringlemann and particulate regulations which the city is charged with violating do not apply to the Lakeside Plants I and II.

Section IV of the Agency's brief charges the city with causing air pollution through the discharge of sulfur dioxide, hereafter referred to as SO_2, and particulate matter. We have disposed of the charges of violation of particulate regulations and will now take up the matter of SO_2.

The primary reason why the Agency's charges of air pollution through SO_2 discharge should be ignored is because the Pollution Control Board to this date has not established any regulations or standards as to what constitutes an excessive or allowable amount of SO_2 discharge. In this respect the rules are completely silent as compared to regulations concerning particulate emissions.

Next, it is provided in Section 1 of Chapter III that new equipment capable of becoming a source of air pollution shall be provided with the maximum control capability which is technically practicable and economically reasonable. If this is to be the policy on new equipment, then certainly nothing more could be expected from existing equipment.

Other than the testimony of one agency employee who professed to have some knowledge of SO_2 removal equipment, which knowledge was demonstrated to be of dubious quality, the agency completely failed in its effort to establish a violation in respect to excessive SO_2 emissions. The overwhelming weight of the evidence from the experts in the field, consisting of professional engineers and manufacturers' sales engineers, establish that there as yet is no technically practicable and commercially feasible method of reducing SO_2 emissions in electric power plant operations such as those conducted by the City of Springfield.

Mr. A. F. Hartung, senior partner and vice-president of Burns and McDonnell Engineering Company, one of the oldest and most respected professional engineering companies in the world, testified that SO_2 removal processes are still in the experimental stage, performance is uncertain, and the cost estimates for installing such equipment at the Springfield plant range in excess of several million dollars. (T-724-728)

Glen Andresen, sales engineer for Babcox and Wilcox, a leading supplier of steam generating equipment to the utility industry, operating on a world-wide basis, and doing about a billion dollars in annual business, testified to efforts being made by his company in SO_2 removal processes. He testified that his company has no units which they could sell to the City of Springfield now which they would guarantee to remove SO_2 from stack emissions. (T-497) Robert Ahlgren, an electrical engineer

in charge of all of the Central Illinois Light Company electric utility plants testified that his company was doing some research on the problem of SO_2 removal and found that most of the things available right now are not practicable. (T-710)

Mr. William E. Barkovitz, a graduate mechanical engineer and registered professional engineer, employed by American Standard, Inc., a two billion dollar corporation, listed on the New York Stock Exchange, with plants all over the world, testified that his company is working on a new concept at the present time in SO_2 removal and is installing a pilot plant. His company does not have any equipment available to sell or install at present for a utility company to control SO_2 emissions. He knows of other systems which have been installed at various utility plants, all of which have experienced considerable problems. (T-686-697)

William Dean, an electrical engineer with Tennessee Valley Authority for 30 years and Chief of the Power Research Staff, and who was employed as head of the section of Interconnection and Coordination by the Federal Power Commission, (T-311) after leaving T. V. A., testified at length to the work he had done in research on air pollution from electrical utilities, and on control of SO_2. (T-318-320) He testified that it is not yet possible to buy an SO_2 collection unit for power plant purposes. (T-320) By this he meant a fully developed process which the manufacturer will guarantee to perform. (T-340)

The Agency has relied on the testimony of one of its employees, Otto Klein, to establish amounts of SO_2 emitted into the atmosphere, all of which it contends showers down upon the persons residing nearby. Mr. Klein, whose qualifications to make such calculations appears to be that of an industrial engineer, who apparently has spent most of his working career as an employee of various state agencies, is probably not quite as knowledgeable in this field as he professes to be. Mr. Klein has assumed that the entire sulfur content of the coal consumed in the combustion process is emitted into the atmosphere.

A far more knowledgeable individual than Mr. Klein on this subject, was Loren Newton, a mechanical engineer by training, a registered professional engineer by experience, and a member of the Burns and McDonnell Engineering Company, with a number of years experience in the field, testified clearly on how to calculate sulfur dioxide emissions. (T-678-679) The big point which Mr. Newton made was that not all of the sulfur in the coal is emitted into the atmosphere as a result of the combustion process. Part of the sulfur would remain attached to the fly ash which would be removed by the fly ash collection equipment, some of the sulfur would go with the ash into the ash pit, and the rest of the sulfur would go up the chimney in various sulfur compounds.

Surprisingly enough although Mr. Krachik, an Agency witness testified that there happened to be about 80 homes in the subdivision

which he developed near the power plant, (T-214) and which incidentally was developed long after the power plant was built, only a few persons came in to complain of the emissions from the city's stacks, despite the fact that the Agency published a large advertisement in the local newspaper for some three weeks prior to the hearing, in which it solicited witnesses to come and testify on behalf of the Agency. Despite this effort on behalf of the Agency to build up its case, only some six or eight witnesses showed up to complain. Most significantly, however, one of the witnesses, Chauncey Maher, a Springfield physician, testified that neither he nor any members of his family during the seven years they lived at their home, had any respiratory diseases that he could ascribe to the smoke from the city's stacks. (T-609)

The city does not deny the water pollution charge. The defective section of the dike has been temporarily repaired with a clay plug. The Burns and McDonnell engineering firm has been engaged to prepare plans and specifications for permanent repair of the 700 feet of dike, and that firm's report and recommendations have been delivered to the Agency for it's approval. Upon receiving the Agency's approval the city will proceed immediately to construct a permanent dike in accordance with the engineer's plans and specifications.

IV

CITY'S NEED FOR MAXIMUM GENERATING CAPABILITY

Although the city has entered into contracts for the purpose of converting the present coal-fired boilers of Lakeside Plant I to oil-fired boilers, and this work is scheduled to be completed by June 1, 1971, there is no way of foreseeing whether the contractor will be delayed in completing the work for reasons beyond his control.

Lakeside Plant I has not been operated during recent months, and if no emergency arises as a result of the failure of other generating equipment, it is possible that there would be no need to operate Lakeside I until the new oil-fired boilers were in operating condition. If such an emergency did arise, however, it would be necessary either to operate plant I or attempt to purchase emergency power. Emergency power, if available, is power purchased from one of the other utility companies with which the Springfield system is interconnected. The City is not interconnected for the sole purpose of generating and selling power to other companies. The interconnection agreements which the city has are for the primary purpose of providing reliable service. (Wm. Porter, T-398-399) If the Springfield plant was not interconnected with other utility plants it would be required to build more generating capacity with the additional cost and air pollution features we are now trying to avoid.

In the event of an equipment failure at the Springfield plant, there is no guarantee that emergency power would be available from some other utility plant. Emergency power cannot be contracted for in advance. (T-401) At the present time the Lakeside Plant I provides the emergency reserve which the city would be forced to call upon in the event of excessive load demand or equipment failure. If the city could not operate Plant I in an emergency, and if it was possible to purchase contract power, the cost involved to the city would be approximately $900,000.00 per year, and it must be purchased on an annual basis. (T-403) If the Lakeside Plant was shut down and no contract power and no emergency power was available for purchase during peak periods, brown-outs or black-outs would occur. (T-404)

In the event of an emergency the decision to use Lakeside Plant I would have to be made quickly. The plant cannot be started up on thirty minutes notice and then turned off again on thirty minutes notice. (T-333) In the event of an emergency there would not be time to first seek approval from the Board or Agency.

V

CITY REQUESTS VARIANCE

The City of Springfield has requested a variance from the provisions of the law, rules and regulations pertaining to emissions of particulate matter and gases from its power plant boilers. This variance

was requested--not for the purpose of permitting the city to avoid or delay purchasing equipment necessary to comply with air pollution laws and regulations--but to allow the city time to get the equipment which it has on order, installed and operating.

The city's petition for variance set forth the steps which the city has taken thus far to attempt to abate air pollution from particulate matter by installation of an electrostatic precipitator to control smoke emissions from boilers 5, 6, 7 and 8 of the Lakeside II plant. Boiler No. 1 at the Dallman plant is presently connected to a mechanical dust collector controlling emission of particulate matter within allowable dust loading limits. Boiler No. 2 at the Dallman plant when installed, will be connected to an electrostatic precipitator. A precipitator will also be installed on boiler No. 1. Boilers 2, 3 and 4 at Lakeside Plant I are scheduled for conversion to oil firing, and this work is presently scheduled for completion by July, 1971.

It would only be repetitious to again detail the evidence produced by the city in support of this variance petition, inasmuch as we have previously dwelt at some length on the testimony in connection with the city's defense to the charges. To summarize, however, we have shown by the testimony and exhibits that the city had a pollution control program which had been approved by the Air Pollution Control Board, predecessor to the present regulatory body. The city had implemented this program by

entering into contracts for purchase and installation of pollution control equipment. The installation of this equipment was not delayed by any dilatory tactics upon the part of the city, but instead was caused by equipment suppliers' failure to meet delivery schedules, engineering complications, and similar factors. Manufacturers are swamped by orders for pollution control equipment at the present time, and this requires longer time for delivery. (T-351)

The present state of the art so far as smoke cleaning equipment for control of SO_2 emissions is concerned, does not make it technically feasible or practicable at this time to obtain such equipment for an electrical power generating plant. At the present time such equipment is being installed on an experimental basis, and the operating results have not yet been ascertained. There is no need for the city to duplicate research going on elsewhere. Expenditure of funds for any equipment for this purpose at the present time would be foolhardy, since it would be quite possible to literally spend millions of dollars for the purchase of equipment which would fail to achieve any meaningful reduction in SO_2 emissions, and might very well fail to meet performance standards still to be established by the Pollution Control Board.

The city is taking all steps possible to cooperate in maintaining clean air by operating its Lakeside Plant I as little as possible, and in fact, has been purchasing power at considerable expense in order to avoid

the necessity for using the Lakeside Plant I facilities. While it is recognized that every person has the constitutional right to unpolluted air, the Board should take into consideration the fact that the city's utility plant was established at its present location in 1935 in a rural area where no persons were living nearby. All of the persons who testified concerning fly ash deposits on their property moved into the area at a recent date. These few persons represent an almost infinitesimal percentage of the residents of the city being served with electric utility service. Requiring the city to purchase power, if available, during peak load conditions, would only shift the burden of pollution on to residents in some other area.

As pointed out elsewhere in the brief there is no way to ascertain and guarantee availability of emergency power for purchase in the event that the city's peak load should exceed its generating capacity during the coming peak load this summer if Lakeside Plant I was held out of operation. If such a situation arises this definitely would cause brown-outs or black-outs. The decision to use Lakeside Plant I would have to be made within minutes as the emergency situation developed, and there simply would not be time to obtain prior approval from the Agency in the event of such an emergency.

VI

CONCLUSION

The City of Springfield realizes that air pollution control is of prime concern to every citizen. We have attempted to show from the witnesses called in this proceeding that the city has devoted a large amount of effort and expense to abating air pollution at its utility plant. We have attempted to summarize the evidence as fairly as possible, without becoming emotional, or dealing in silly non sequitors, such as the Agency displays in its brief in commenting upon the city's electrical plant being profitable because the city of Jacksonville has an unpaid utility bill. This, of course, amounts to nothing more than saying that Charley's business must be profitable because Jack owes him money. The city's financial report (Agency Exhibit 66) shows that the electrical department pays no dividends. Any surplus funds accumulated over operating expenses and payments on bonded indebtedness are used to pay for equipment for plant expansion.

The evidence shows that the city has done everything within reason which it is possible to do to abate air pollution. The plant has been at its present location since 1935, serving its 90,000 citizens. A relative handful of people deliberately moved into living quarters to leeward of the prevailing winds passing over the plant. Most, if not all, of these persons have been living in that area for something less then 10 years.

While they may be subject to some inconvenience from occasional blowing of fly ash onto their property, apparently no one's health has been affected. These people are willing to pay relatively high prices for homes in that particular area, and apparently none of these persons are suffering such hardship as to induce them to move from the area.

Upon the completion of the work which the city presently has under way and under contract for conversion of three of the coal-fired boilers of Plant I to oil, and installation of the precipitators at the Dallman plant, the fly ash problem will be reduced to a minimum, and to less than the allowable emissions permitted by Board rules.

The city has demonstrated its willingness and capacity to clean up the fly ash emissions from its plant prior to the time that state laws and rules required it to do so. The city will make an equally determined effort to cope with the SO_2 problem as soon as technology provides a feasible and practical method for doing so.

Therefore, the City requests the Pollution Control Board:

1. To deny the Agency's request for an order closing Lakeside Plant No. I, and to deny the Agency's request to enjoin the re-opening of Lakeside Plant I without the Agency's prior approval based on a showing of emergency, to serve only Springfield and the immediate vicinity. The city is putting forth all possible effort to be in compliance by July 1, 1971, with rules and regulations of the Pollution Control Board, but it should

not have its plant encumbered if an emergency should arise before the work can be completed.

2. That the Board grant the request of the Agency for an order directing conversion of Lakeside Plant No. I to an oil burning operation by not later than December 31, 1971.

3. That the Board deny the Agency's request for an order requiring the city to submit to the Agency within 90 days a detailed plan containing evidence of financial commitments to show that the city is proceeding with a program to achieve sulfur dioxide reduction. The city is keeping fully abreast and informed of the state of the art in sulfur dioxide reduction processes. It is completely unreasonable to require the city to have such equipment installed by July 1, 1972 before any regulations or standards have been adopted by the Board. Proven sulfur dioxide removal equipment is not presently available for purchase for power plant central station operation. When such equipment is available and standards are set, Springfield will take immediate steps necessary to bring its plant into compliance as soon as possible.

4. That the Board grant the Agency's request for order concerning evaluation and shoring up the fly-ash pit; an engineering evaluation has already been made and program for permanent repair submitted to the Agency for approval. The city will proceed to repair

the damaged fly-ash pit immediately upon receiving approval of its program from the Agency.

Respectfully submitted,

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