

ILLINOIS POLLUTION CONTROL BOARD
December 21, 1971

CENTRAL ILLINOIS PUBLIC)
SERVICE COMPANY) PCB 71-261
) PCB 71-262
 v.) PCB 71-263
) PCB 71-264
ENVIRONMENTAL PROTECTION AGENCY)

THOMAS L. COCHRAN, ATTORNEY FOR THE CENTRAL ILLINOIS PUBLIC SERVICE
COMPANY

DELBERT D. HASCHMEYER, ATTORNEY FOR THE ENVIRONMENTAL PROTECTION
AGENCY

OPINION OF THE BOARD (by Mr. Kissel):

On September 3, 1971, the Central Illinois Public Service Company (CIPCo) filed a petition for variance with the Board for four of its generating stations - Coffeen (PCB 71-261), Hutsonville (PCB 71-262), Meredosia (PCB 71-263), and Grand Tower (PCB 71-264) - from the applicable particulate regulations. Each generating station was under a program to install emission control equipment as detailed later in this opinion. CIPCo had been granted an ACERP by our predecessor Board, the Air Pollution Control Board, but sought this variance because of our previous decision in the Commonwealth Edison case which held that ACERPs were indeed variances and could only be granted for a period of one year. See Commonwealth Edison Company v. EPA, PCB 70-4, February 17, 1971. The Environmental Protection Agency filed separate recommendations for each of the stations generally advising that the variances should be granted with exceptions noted later in this opinion. Hearings were held in October and November of 1971 before Arthur Rosenblum, Hearing Officer.

Case 71-261 involves the CIPCo Coffeen Power station which is located three miles south of the city of Coffeen, Illinois in Montgomery County. It is surrounded mostly by farm lands. Presently, the Coffeen station has one coal fired unit in operation (Coffeen Unit #1) which has an operating capacity of 365 MWE. This Unit #1 presently emits its off gases through a 350-foot chimney, and is presently equipped with a mechanical dust collector with an efficiency of 34.5%.

The key unit in CIPCo's future plans is one presently under construction at the Coffeen station - Coffeen Unit #2. The scheduled completion date for this unit is March of 1972. It will have an operating capacity of 600 MWE, and will be equipped with an electrostatic precipitator with a collection efficiency of 99%. A new 500-foot stack is being built at the Coffeen station and the off gases of both units will be emitted through the new, larger stack. The 350-foot Unit #1 stack, now being used, will, then, be dismantled.

Coffeen Unit #2 will from the inception of its operation comply with the existing regulations concerning particulate emissions, according to CIPCo, and therefore no variance is being sought for the operation of that unit. Because of its size, however, bringing it in line in March of 1972 will have an effect on the other "dirtier" CIPCo units, as will be discussed later in this opinion. CIPCo does say, however, that Coffeen Unit #2 will need about six months time of operation before the other units in the line can be taken off.

Coffeen Unit #1, on the other hand, is presently violating the particulate regulations. The present stack emission of Coffeen Unit #1, calculated by CIPCo is 4.0 pounds per hour per million BTU, and the applicable regulations only permit 0.8 pounds an hour per million BTU. The Agency calculated Coffeen Unit #1 emits 12,000 tons of particulates per year into the atmosphere. In addition, the emissions from the Coffeen Unit #1 are causing a problem with the local residents. Several of Coffeen's neighbors testified at the hearing and described the dust from the unit which affects their lives. To the neighbors, the particulate emissions represented an almost unbearable source of dust so that windows in homes can't be kept open, air conditioners had to be bought, yards could not be used for barbecuing, furniture gets dirtier faster and the paint on cars comes off. An Agency witness who did some ambient air sampling testified to being near the plant and feeling the dust get in his eyes. There is no question, from the uncontradicted evidence in the record, that the particulate emissions are interfering with the life and property of the people near the plant. CIPCo did present a program for controlling the particulate emissions from Coffeen Unit #1 - the installation of an electrostatic precipitator with a collection efficiency of 99%. When installed, the precipitator will bring Coffeen Unit #1 into compliance with the existing particulate emission regulations. The Agency did not disagree with this, but the Agency did suggest that the time schedule for installation of the precipitator could be accelerated. CIPCo's schedule on Unit #1 calls for receipt of the precipitator in July of 1972, but not actually installing it until 1973. (The actual date on which Coffeen Unit #1 will have the precipitator installed and operating is June 9, 1973, and the unit will be shut down on March 4,

1973, to begin the tie-in of the precipitator to Unit #1. Unit #1 will not be operated between March 4 and June 9, 1973. See CIPCo's petition for variance, paragraph 5). In the hearing the Agency suggested that Unit #1 be shut down some time in the fall of 1972 (after Coffeen Unit #2 is reliably operational) and complete the installation before the time suggested by CIPCo. CIPCo's witnesses agreed that from a technical standpoint the Agency's suggestion on timing of installation could be done, but CIPCo argues that from a system reliability standpoint Coffeen Unit #1 cannot be shut down until 1973. CIPCo argues that it has a scheduled planned maintenance program which requires Coffeen Unit #1 to be in operation until March 1973 so that certain other units in their system can operate efficiently and give reliable electric service to the CIPCo customers when Coffeen Unit #1 is taken down for installation of the precipitator. In addition, CIPCo is a member of the Illinois-Missouri Power Pool, which also includes Illinois Power Company and Union Electric Company (Missouri). The members of this Pool have scheduled staggered shutdowns of major turbine generators of the respective companies so that several large units are not out of service for planned maintenance at any one time. CIPCo says that if the shutdown of Coffeen Unit #1 were required before March of 1973, this "would probably postpone the maintenance plans for other units thus affecting each of the three companies" and "would place all three companies in the vulnerable position of not having performed planned maintenance as scheduled resulting in decreased reliability". According to CIPCo, a hardship to CIPCo's customers could result. While we feel that control equipment should be put on as early as possible, we agree with CIPCo's position in this case. The need for reliable electric power is an important consideration and outweighs the few months (five at most) during which Coffeen Unit #1 would not emit excessive amounts of particulate matter. Five months is a short time, particularly because they are late fall and winter months when the neighbors would be less likely to use the out-of-doors which has been taken from them by CIPCo in the past. CIPCo, then, will be granted a variance to operate Coffeen Unit #1 for one year in violation of the applicable particulate standards with the understanding that its program is to shut down Coffeen Unit #1 on March 9, 1973, for the installation of an electrostatic precipitator and connection of the new 500-foot stack.

In its recommendation filed in this case, the Agency recommended granting of the variance, but only on the condition that within ten months from the granting of the order of the Board, CIPCo develop a sulfur dioxide (SO₂) emission program for Coffeen Units #1 and #2, which will "significantly reduce the sulfur dioxide emissions on or before June 1, 1974". See paragraph 10(b) of the

Agency recommendation. To substantiate the need for SO₂ reduction, the Agency introduced testimony of many neighbors who identified a sulfur odor in the area, which, the Agency said, was indicative of an SO₂ problem. In addition, the Agency also mathematically calculated the ground level concentrations of SO₂ and found that if the mixing height of the stack was 5000 feet, the ground level concentration of SO₂ between 5.8 miles and 6.8 miles from the stack would be approximately 641 mg/m³ (about .25 ppm). If the mixing height were 1000 feet, rather than 5000 feet, the concentration of SO₂ would vary between 400-3861 mmg/n³ (.17 ppm to 1.5 ppm) in an area between 2.3 and 50 miles from the plant. If the model were to be believed, concentrations near 1.5 ppm could pose a serious health problem, but as pointed out by a CIPCo witness, one of the assumptions made by the Agency in its calculations was wrong, namely, the Agency assumed that the 350-foot stack would still be used for the emission of off gases from Coffeen Unit #1. In fact, CIPCo plans to discontinue use of that stack and emit the off gases from both Coffeen Units #1 and #2 through a new 500-foot stack. CIPCo's witness testified that this would make effective stack height greater, first, because the stack height itself will be higher and, second, because the greater heat flow through the one stack (rather than two stacks) would cause the emissions to go higher in the air. The Agency calculations also assumed (when the high SO₂ concentrations occurred) that the emissions from the Coffeen Units would not break an emission layer at 1000 feet. According to CIPCo, if both units are vented through the one 500-foot stack, any inversion at 1000 feet will be broken by the stack of off gas. CIPCo calculated that the ground concentrations on a one-hour basis would be .17 ppm SO₂ which calculation is a factor of ten less than the Agency calculation.

The Board is faced with deciding between two mathematical calculations, which differ by a factor of ten. The Agency calculations were not based on the proper assumptions, and, therefore, if we were to accept one set of calculations or the other, we would accept that of CIPCo. However, we do not feel that it is appropriate for the Board to consider the question of SO₂ reduction in this case for basically two reasons. First, the Board is presently considering the adoption of statewide regulations on SO₂ reduction, and second, the Agency only presented half a case here. As to the second point, we have previously held that where an SO₂ problem was identified and control equipment was generally shown to be available and adaptable, we would order a boiler operator to install such equipment. See EPA v. City of Springfield, PCB 70-9, May 12, 197. However, that case was different from this case because that case was an enforcement case brought by the Agency to get SO₂ control equipment installed and because in that case the Agency demonstrated

at least on a prima facie basis that control equipment could be installed. The Agency here has demonstrated a possible problem, but has not demonstrated even on a prima facie basis that control equipment can be installed. In this case we feel, therefore, that CIPCo need not submit a plan for controlling SO₂ emissions. It may be, however, that in other cases where a variance is shown, that we will require the emitter or discharger to come forward with plans to control the source of pollution, even where the Agency has offered us proof that such equipment is available. Therefore, we will not require that CIPCo study the ways of reducing SO₂ emissions from its Coffeen plant at this time. This does not preclude, however, the Agency's bringing an enforcement case against CIPCo and proving at that time that control equipment is available and that the SO₂ problem is a real one. Nor does our decision prevent the Board from adopting regulations in the near future which would require CIPCo to install SO₂ control equipment on the Coffeen units.

Case #71-262 involves the Hutsonville Power station, which is located along the Wabash River in Crawford County, Illinois, two miles north of the City of Hutsonville. Hutsonville has four turbine generating units served by six coal-fired boilers (Boilers 1-4 serve Units #1 and #2, Boiler 5 serves Unit #3, and Boiler #6 serves Unit #4). CIPCo's petition for variance on the Hutsonville Power station only involves Units #1 and #2. Unit #3 already has an electrostatic precipitator installed with a tested efficiency of 99% (CIPCo has not yet operated this unit on other than a test basis). Unit #4 was scheduled to be shut down on October 3, 1971 to have an electrostatic precipitator installed, and the unit was to be placed back in service on November 20, 1971.

CIPCo does not intend to install any control equipment on Units #1 and #3. What CIPCo requests is that a variance from the particulate regulations be granted to CIPCo for Units #1 and #2, so that those units will be allowed to operate on a "hot standby" basis until September 30, 1972, and then operate on "cold standby" until January 1, 1980. "Hot standby" means the boilers are maintained near normal operating pressure and can be fired up to be able to produce steam in a minimal time. Generally, the furnace is fired 15-30 minutes every 4 to 6 hours to keep the pressure up. "Cold standby" means that no pressure is maintained in the boiler and to operate it a fire would have to be placed in the boiler. However, in order to assure that the unit can be operable, a fire must be placed in the boiler about every three months for a 4-6 hour period.

The reasons given by CIPCo for needing Units #1 and #2 on a hot standby basis is to allow for time for testing the new Coffeen Unit #2, which is scheduled to go on line in March, 1972. CIPCo says that until there is an adequate shakedown of Coffeen Unit #2 (about six months), it will not be a reliable enough unit and

therefore the Hutsonville Units #1 and #2 will provide the backup. While the Agency recommended that Hutsonville Units #1 and #2 be placed on "cold standby" when Coffeen Unit #2 comes on line, we feel that CIPCo's position has merit. The need for reliable electrical service during the summer demands of 1972 are important and there was no testimony that the present operation of Hutsonville Units #1 and #2 (presently on "hot standby") is causing any problem with the neighbors. In fact, the emissions should be much lessened from the whole plant because the two larger units at Hutsonville now are supposed to have operating electrostatic precipitators to reduce the off gas emissions. We will, therefore, allow the Hutsonville Units #1 and #2 to operate on a "hot standby" basis until September 30, 1972.

The second part of the petition for variance regarding the Hutsonville units is a more difficult question. CIPCo asks that Hutsonville Units #1 and #2 be allowed to operate on "cold standby" until January 1, 1980. During this time, (from September 30, 1970 to January 1, 1980) it may very well be that Units #1 and #2 will never be operated except at the three-month intervals, but the likelihood is that the units will be operated at some time. In either case, however, this Board has not favored programs which stretch far into the future and which do not contain pollution control programs. See Mt. Carmel Public Utility v. EPA, PCB 71-15, PCB 71-15R, decided April 14, 1971 and November 11, 1971. If Units #1 and #2 are valuable to CIPCo and if they are to be operated at any time during the next eight years, it is worth the price now to install the necessary control equipment. We can understand that CIPCo needs the units on "cold standby" for a short time, until January 1, 1974, but after that, if CIPCo wants to use the units, it can only do so if it complies with the Act and the applicable regulations. We will, therefore, approve the use of Units #1 and #2 on a "cold Standby" basis after September 30, 1972, as long as it is on a long term program to use those units after January 1, 1974 only if their emissions comply with the Act and the applicable regulations.

Case 71-263 involves the Meredosia Power Generating Station which is located along the Illinois River about one mile south of Meredosia, Illinois in Morgan County. Meredosia plant has three turbine power generating units served by five boilers (Boiler 1-4 serve Units #1 and #2 and are connected in such a way so as to permit any boiler to supply steam to either of the two units, and Boiler 5 serves Unit #3). CIPCo's petition for variance regarding the Meredosia Station only involves Boilers #3 and 4 which serve Units #1 and #2. An electrostatic precipitator has already been installed on Unit #3 and by now already is operating. Boilers #3

and #4 are presently having an electrostatic precipitator installed beginning on October 24, 1971, and completion of the precipitator was scheduled for November 20, 1971.

Boilers #1 and #2 are the subject of the variance petition here. CIPCo's plan calls for shutting down the boilers beginning on March 26, 1972, with the boilers scheduled to have construction of the precipitators completed on April 22, 1972. Presently Boilers #1 and #2 each vent through a separate stack and emit approximately 6.66 pounds per million BTU, which is in excess of the present state standard of 0.8 pounds per million BTU. The Agency recommended granting of the variance for the time specified by CIPCo. We agree. There is no evidence that CIPCo can shut down Boilers #1 and #2 now to complete the installation sooner. While the Agency did receive some complaints about the emissions, no one appeared to testify that the schedule on Boilers #1 and #2 should be moved up. We think that the schedule for completion of installation is a reasonable one, and hereby grant the variance as requested by CIPCo for the Meredosia Power Station.

Case 71-264 involves the Grand Tower Power Station which is located on the Mississippi River approximately three miles north of the City of Grand Tower in Jackson County, Illinois. The Grand Tower Station has four turbine generator units which are served by nine coal-fired boilers (Boilers 1-6 provide steam for Units #1 and #2, and each boiler can produce steam for either unit, Boilers 7 and 8 provide steam for Unit #3, and Boiler #9 provides steam for Unit #4). Units #3 and #4 are presently operating with installed electrostatic precipitators with collection efficiencies in the range of 95.6% to 98.7%. Only Units #1 and #2, each with a generating capacity of 25 MWE, are the subject of the petition for variance. The Units #1 and #2 are presently on "cold standby" and CIPCo's request for variance asks that we allow these units to remain on cold standby until September 1972, when Coffeen Unit #2 will be able to provide reliable electric service. After that date CIPCo intends to retire the units. The Agency recommends granting of the variance, but suggests that the Board require the units to be physically dismantled at that time.

While we agree with the Agency that the variance should be granted, we do not agree that we should require as a condition of the variance that the units be physically dismantled. Without a variance, CIPCo cannot operate the units on any basis, "cold standby" or otherwise, without control equipment. Since these units would be the only "non-controlled" emission sources on the site, it would be relatively easy to know if and when the units

are operated. We think that CIPCo has demonstrated a need for the "standby" of these units until September 30, 1972. The "standby" status will allow CIPCo some flexibility if Coffeen #2 doesn't operate to specifications and, therefore, will allow CIPCo to provide reliable electric service to its customers. Here, as in two of the three other cases, no one testified as to any effect of the particulate emissions; rather the people interviewed by the Agency had no objection to the granting of the variance.

We will, however, require that CIPCo report to the Board and the Agency within ten days after any operation of the two units. This includes the testing of the units as well. If the units are fired other than for testing, CIPCo will have to state in the written report to the Board and Agency the reasons for the use of the units.

As a general condition to the granting of the variances, the Board will require that CIPCo post a bond to insure performance of the acts detailed in the granted program. The Agency recommended that a bond be required, and we believe that under the Act a bond is mandatory because the hardship complained of consists "solely of the need for a reasonable delay in which to correct a violation of the Act or of the Board regulations". Section 36(a) of the Act.

In addition to the bond, the Board will also require, as it has in other cases of this type, quarterly reports from CIPCo which must detail how CIPCo is progressing on each of the control facilities. See Illinois Power v. EPA, PCB 71-193, and PCB 71-195-8, decided September 30, 1971.

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

O R D E R

Upon examination of the record, CIPCo is hereby granted a variance for a period of one year from this date to emit particulate matter in excess of regulation limits as follows and so long as the program outlined below is complied with:

1. (PCB 71-261) From Unit #1 at the Coffeen Station until March 9, 1973.

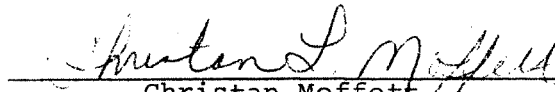
2. (PCB 71-262) From Units #1 and #2, at the Hutsonville Station, until January 1, 1974, provided that:
 - a. Units #1 and #2 shall be on "hot standby" as defined in the Board's opinion only until September 30, 1972; and
 - b. After September 30, 1972, Units #1 and #2 shall be placed on "cold standby" as defined in the opinion, only until January 1, 1974.
3. (PCB 71-263) From Boilers #1 and #2, at the Meredosia Station, until March 26, 1972.
4. (PCB 71-264) From Units #1 and #2, at the Grand Tower Station, until September 30, 1972, provided that during this period the Units shall only be operated on a "cold standby" basis as defined.

All on condition that the following are met:

5. All existing emission control equipment shall be maintained and fully utilized.
6. CIPCo shall within thirty-five (35) days after receipt of this order post with the Agency a bond or other security in the amount of \$500,000 in a form satisfactory to the Agency, which sum shall be forfeited to the State of Illinois in the event that conditions of this order are not complied with or the facilities in question are operated after expiration of these variances in violation of regulation limits.
7. CIPCo shall file quarterly written reports, commencing on March 31, 1972, with the Agency and with the Board, detailing its progress toward completion of the program.
8. CIPCo shall, within ten (10) days after use, file a written report with the Board and with the Agency, detailing when, for how long, and why any units or boilers on a "cold standby" basis were used.

9. Failure to adhere to the programs as presented or to the conditions of this order shall be grounds for revocation of these variances.
10. CIPCo shall apply for any desired extensions of any of these variances to complete the programs approved today not later than ninety (90) days before expiration of that particular variance.

I, Christan Moffett, Acting Clerk of the Pollution Control Board, certify that the Board adopted the above Opinion and Order this 21st day of December, 1971 by a vote of 4-0.


Christan Moffett
Acting Clerk