

ILLINOIS POLLUTION CONTROL BOARD
March 24, 1988

IN THE MATTER OF:)
)
SITE-SPECIFIC RULE CHANGE AT)
35 ILL. ADM. CODE PART 304,) R87-22
SUBPART B (CIPS NEWTON STATION))
)

PROPOSED RULE. FIRST NOTICE.

PROPOSED OPINION AND ORDER OF THE BOARD (by J. Marlin):

This matter comes before the Board on a petition for site-specific relief filed by Central Illinois Public Service Company (CIPS) on July 17, 1987. Specifically, CIPS is seeking relief from the requirement of Section 304.124(a) as it pertains to effluent limits for total suspended solids (TSS). The relief would apply to the discharge from CIPS' ash pond system at its Newton generating station (Newton). Instead of the 15 milligrams per liter (mg/l) standard imposed in Section 304.124(a), CIPS wishes to be subject to the following effluent limits: 30 mg/l as a 30-day average and 100 mg/l as a daily maximum.

A hearing was held in this matter on November 4, 1987 in Newton. On January 27, 1988, the Department of Energy and Natural Resources (DENR) filed its determination that an economic impact study was not necessary in this matter. The Board was informed of the Economic and Technical Advisory Committee's concurrence with this determination on January 29, 1988.

At Newton, CIPS generates electricity through the production of steam in boilers fueled by coal. Bottom ash from the boilers at Newton is sluiced out of the plant and is processed by an ash pond system. Water taken from Newton Lake is used for this purpose. The sluiced ash is first discharged to the primary settling pond. This primary settling pond has a surface area of 401 acres. Currently, this pond is operated at a depth of 7 feet. The maximum design depth is 23 feet. Originally, the pond system was intended to process both fly ash and bottom ash. However, only bottom ash is processed in the ash pond system; since 1979, the fly ash has been utilized to stabilize scrubber by-products before landfilling. This change resulted in an 85 percent reduction in solids entering the pond with the result that, the primary settling pond now has an estimated life of 277 years. (R. 13). The ponds have a 106 day retention time (R. 44).

The primary settling pond discharges to a 9.3 acre secondary settling pond. This pond is operated at a depth of 12 feet, although it has a maximum design depth of 26 feet. (Exh. #1, p. 4).

The secondary settling pond discharges to Newton Lake. The amount discharged is estimated to be between 7.78 and 8.98 million gallons per day. (Exh. #1, p. 3). It is this discharge that is the subject of CIPS' request.

Aside from two isolated instances, CIPS first consistently failed to achieve the 15 mg/l standard in January, 1986. These problems persisted until September, 1986. In that month, CIPS experienced its first and only violation of the daily maximum standard, which is 30 mg/l as figured pursuant to Section 304.104. At the time of the hearing, CIPS' discharge had been in compliance since September, 1986. (Exh. #1, p. 5-6; R. 47).

After analyzing its discharge, CIPS has considered that algal blooms are a major contributing factor to CIPS' past exceedances of the total suspended solids standard. (R. 45). The green algae, found in CIPS' discharge, would constitute part of the volatile suspended solids fraction of the TSS discharge. The ash, for which the ponds are designed to remove, would be included in the fixed solids fraction of the TSS discharge. Between February 1986 and October 1986, the total volatile suspended solids (TVSS) fraction ranged from 17.7 to 68.2 percent of the TSS recorded. (Exh. #1, p. 7; R. 15). In 1987, the percent of TVSS in the TSS was as high as 80 percent. (R. 73).

It is CIPS' position that the ash ponds are doing their job. That is, the ash is settling out in the ponds. CIPS does not believe that the ponds are "short-circuiting" (R. 44). CIPS comes to this conclusion by comparing the concentration of ash in the pond water with the concentration of ash in the discharge. (R. 26). Also, CIPS asserts that the water discharged to Newton Lake has less total fixed solids than the water CIPS takes from the lake to use in its sluicing operation. Data from April 1, 1987 are the only exception, according to CIPS. (R. 61).

For the period of time during which CIPS had compliance problems, February 1986 through October 1986, the fixed solids portion of the TSS would have only exceeded the 15 mg/l standard twice. The TVSS fraction, when figured alone, would never have exceeded the standard.¹ (Exh. #1, Attachment B). It is clear then that the exceedances are usually a result of the combination of the TVSS with the fixed solids. The largest exceedance by CIPS for TSS was recorded in September, 1986 which yielded a 25 mg/l average. As previously stated, the highest daily value, 39 mg/l, was also recorded in that month. (Id.).

- CIPS evidently did not analyze fixed solids separately from TVSS for every month during that time period.

CIPS claims that treatment alternatives to the ash pond system are cost prohibitive. According to CIPS, construction of a wastewater treatment plant would cost between 9 and 17 million dollars, depending on the design selected. Also, CIPS claims that the cost of a recirculation system, which would require the landfilling of the ash, is estimated at \$17 million. (Exh. 1, Att. F & G, R. 20-22).

Both the primary and secondary ponds have a large population of bullheads. According to CIPS, the bullheads could contribute to the fixed solids portion of the TSS. Bullheads, as bottom feeders, churn up sediment thereby adding to the TSS. (Exh. #1, p. 9). CIPS is uncertain as to the degree that the bullheads contribute to the fixed solids count. The only way to determine this level of contribution would be to kill all the fish in the ponds, by the use of toxicants, and examine if, or how, the fixed solids level improves. However, CIPS believes that this option would be difficult and would pose substantial risks for the fish population in Newton Lake. (Exh. #1, p. 15). Also, CIPS states that the Illinois Department of Conservation (IDOC), which manages Newton Lake's fishery, is against the use of toxicants in the ash ponds. (Id. at 17).

Similarly, the green algae can be eliminated through the use of algicides. As with the killing of fish, such a control would have to be used repeatedly. CIPS states that the algicides would also pose a great environmental risk to the biota of Newton Lake. IDOC does not favor this method either. (Exh. #1, p. 20-21; R. 74).

CIPS has taken steps to reduce TSS by managing pond levels. Shoreline erosion due to wave action has been decreased by operating the primary pond at a depth of 7 feet rather than 23 feet. This has encouraged the growth of macrophytes (rooted plants) which calm the water and help settle solids. The macrophytes compete with algae for sunlight and nutrients. (R. 54-57).

Environmental Impact

CIPS asserts that its TSS discharge to Newton Lake has no detrimental impact upon Newton Lake. In fact, CIPS claims that the green algae may have a beneficial impact upon the Lake since algae is food for fish. According to CIPS, there is a favorable mix of algal species in the effluent. Blue-green algae, a potentially harmful type, are not present (Exh. #1, p. 22-23; R. 68-69). CIPS cites an IDOC study for the proposition that the discharge has no negative impact on the lake's fishery. Evidently, more fish are caught per unit of effort in the cove where CIPS discharges as compared to a cove across the lake (Exh. #1, p. 24). The reasons why fish apparently congregate near the discharge are not certain (R. 108).

CIPS claims that a standard of 30/100 would not have a negative impact on the environment since that is the standard which was promulgated (and codified at 40 CFR 423) by the U.S. Environmental Protection Agency (USEPA) for the discharge of ash pond systems. (Exh. #1, p. 13; R. 103).

The Illinois Environmental Protection Agency (Agency) recommends that CIPS be granted relief only to the extent of a 25 mg/l limit for the 30-day average and 40 mg/l limit for the daily maximum. The Agency asserts that the past performance levels of CIPS justifies only this level of relief. (Agency Brief, p. 10).

Anti-Backsliding Provision

Both CIPS and the Agency were requested to address, in their briefs, how the requested relief related to Section 402(o) of the Clean Water Act, as amended by Pub. L. No. 100-4. This Section is entitled "Anti-Backsliding." In general, the Section prohibits the renewal of a permit if the effluent limits contained in that renewed permit are less stringent than the original permit.

CIPS initially claims that the anti-backsliding provision is inapplicable to the situation at hand. CIPS asserts that the provision only applies to effluent standards based on "best professional judgment" and water quality based limitations. According to CIPS, the Section does not preclude backsliding for technology-based limits which is the issue in this proceeding. In addition, it is CIPS' position that the anti-backsliding amendment only applies to water quality standards or schedule of compliance.

Finally, CIPS states that even if the anti-backsliding provision is applicable, CIPS' ash pond system falls under two expressed exceptions to the provision. One exception allows less stringent limitations if such limitations are necessary due to circumstances beyond the permittees control and for when there is no reasonably available remedy. The other exception encompasses the situation where a permittee has installed and properly operated treatment facilities required to meet the original permit's limits and yet the permittee is unable to deliver compliance. CIPS concludes that its situation fits both these exceptions. (CIPS' Brief, p. 3-7).

The Agency states that the latter exception, discussed above, would likely apply. This exception also provides that a new permit contain limits which reflect the level of pollutant control "actually achieved." (Agency Brief, p. 9).

In its Reply Brief, CIPS takes the position that the Board should not concern itself with the anti-backsliding issue.

IEPA as the permitting authority and USEPA under its enforcement authority of the NPDES [National Pollutant Discharge Elimination System] program, not the Board, are the proper authorities for determining if a revised permit can be issued.

* * *

[T]he question of whether the anti-backsliding provision is applicable should be resolved as a permitting, not a rulemaking, function.

(CIPS Reply, p. 11).

The Board will not adopt rules which it believes are contrary to Federal law or regulations that the State administers. In this matter, the Board agrees with the participants that granting relief will not constitute backsliding.

Findings

The Board notes that considerable time was spent at hearing trying to clearly define the location or configuration of various structures and items under discussion. The exhibits such as Exhibit #1, Attachment A which showed the entire lake and plant area, would have been much more useful if items such as the ponds, intakes, and discharge points had been indicated.

Although there are technically feasible methods for compliance by utilizing treatment alternatives other than the ash pond system, such treatment appears to be economically unreasonable in light of the nature and impact of the discharge. It also appears that no modification of the current ash pond system would significantly reduce the fixed solids portion of CIPS' TSS discharge. Given the current levels of TSS in CIPS' discharge, the use of toxicants to kill fish or algicides to kill algae in the ponds would pose environmental risks to Newton Lake which are greater than any negative impact associated with CIPS' current TSS discharge.

At hearing, the attending Board Member asked whether CIPS would be amenable to regulating the fixed solids portion of the TSS apart from the TVSS portion. In its brief, CIPS states that "application of the current Board limits, 15 mg/l and 30 mg/l, just to the fixed portion of the TSS in the effluent also has support in the record and certainly is an acceptable alternative to CIPS." (CIPS Brief, p. 12).

In response, the Agency states:

The suggested bifurcation of TSS into volatile and fixed portions is unprecedented in the Board's regulations. There is no compelling reason in the present case to do so even though the volatile portion is known to be primarily algal and does not appear to have an adverse impact upon Newton Lake. Further, because still higher levels of algae could prove detrimental to the lake, the volatile portion of TSS would still need to be regulated in some fashion. The record in this matter is not sufficient to address this issue.

(Agency Brief, p. 5)

The Board is reluctant to grant TSS levels of 25/40 as suggested by the Agency. This could lead to a situation where fixed solids exceed 15 mg/l. Presently, CIPS' discharge of fixed solids generally meets the current limit of 15 mg/l. Relief which ignores the composition of the TSS discharge could allow CIPS to produce an effluent which has greater ash content when compared to its present discharge. The ash pond system is designed to remove ash; the record does not support amending regulations in any way which would accept decreased efficiency of ash removal. There has already been a major change in the ash loading to the ponds. It is impossible to predict the nature of future discharges. The CIPS witness did, however, state that if relief is granted, CIPS would continue to manage the ponds to minimize TSS. (R. 29).

It is evident in the record that the type and amount of algae presently discharged by CIPS has no apparent deleterious effect on Newton Lake. Also, the Board notes that the ash pond--Newton Lake system is essentially a closed loop. The lake discharges only intermittently to Weather Creek. (R. 110). Although the algal discharge is not presently harmful due to its type and quantity, the Board agrees with the Agency that the algal portion should not go unregulated. The Board believes that the record supports granting some relief from TSS caused by algae. A level of 30/50 is supported by the data in the record as consistent with current performance of the ponds with a reasonable amount of leeway given the unpredictable nature of algal blooms.

Given the unique circumstances of this situation, the Board will propose relief such that CIP's TSS discharge shall not exceed 30 mg/l monthly average or 50 mg/l daily composite. The definitions of Section 304.104(b) shall apply to these limits. Also, the Board will impose the requirement that the non-volatile portion of the TSS not exceed 15 mg/l monthly average and 30 mg/l daily composite. In granting this relief, the Board notes that the volatile fraction of TSS in many discharges can be

environmentally harmful. The 30/50 TSS levels specified in this rule are intended to include both the fixed and volatile fractions.

The Board granted Illinois Power Company's Wood River Station TSS limits of 30/50 in 1985. In the Matter of: Proposal of the Illinois Power Company for a Site-Specific Effluent Rule Change (Proposed Amendment to Ill. Adm. Code, Title 35, Part 304, Subpart B), R. 83-11, 63 PCB 118, (February 20, 1985). That matter involved a relatively new ash pond with a retention time of 67 days.

The Board denied TSS relief to the Central Illinois Light Company's (CILCO) E.D. Edward's Station South of Peoria in 1986. In the Matter of: Site Specific Rulemaking for Central Illinois Light Company, R85-7, 72 PCB 369 (September 11, 1986), aff'd Central Illinois Light Company v. Ill. Pollution Control Board, Ill. App. 3d. _____, _____ N.E.2d _____ (3rd Dist. 1987) [citation will be supplied later].

In that proceeding, an older pond with a retention time of 90 hours exceeded the TSS standard. The Board denied the petition for a number of reasons including failure to demonstrate that the excess TSS were not environmentally harmful. CILCO also failed to adequately address why the pond had previously met the standard, to support its contention that influent solids were a major contribution to the violation, to refute the Agency's contention that the pond had filled with sediment to the point that it did not provide the necessary settling opportunity, and to demonstrate that compliance was technically infeasible or economically unreasonable.

The Board believes its decision today is in concert with prior decisions in this area. CIPS has a relatively new pond with a more than adequate retention time. Based on experience, CIPS manages the pond to minimize algae and inorganic particles. The Company had adequately characterized the influent and effluent water and determined where the problems exist. The Board is convinced that given the current situations, it is technically feasible but economically unreasonable to implement further capital-intensive controls. The proposed rule will not allow an increase in fixed TSS, but will give CIPS reasonable relief from its algae problem.

ORDER

The Board hereby proposes for First Notice the following amendment to be published in the Illinois Register.

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE C: WATER POLLUTION
 CHAPTER I: POLLUTION CONTROL BOARD

PART 304
 EFFLUENT STANDARDS
 SUBPART B: SITE SPECIFIC RULES
 AND EXCEPTIONS NOT OF GENERAL APPLICABILITY

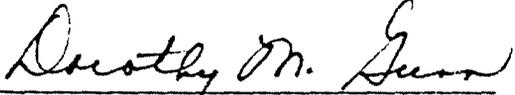
Section 304.216 Newton Station Suspended Solids Discharges

The limitation on the discharge of total suspended solids (TSS) contained in Section 304.124(a) does not apply to the discharge from the ash pond system of Central Illinois Public Service Company's Newton Station (CIPS), located in Jasper County. Instead, CIPS' ash pond system discharge shall not exceed 30 mg/l monthly average and 50 mg/l daily composite for TSS, and 15 mg/l monthly average and 30 mg/l daily composite for non-volatile TSS. The definitions of Section 304.104(b) apply to these effluent limits.

(Source: 12 Ill. Reg. , effective)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Proposed Opinion and Order was adopted on the 24th day of March, 1988, by a vote of 6-6.


 Dorothy M. Gunn, Clerk
 Illinois Pollution Control Board