

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	
TRIENNIAL REVIEW OF WATER QUALITY)	R11-18
STANDARDS FOR BORON, FLUORIDE AND)	(Rulemaking – Water)
MANGANESE: AMENDMENTS TO 35 ILL.)	
ADM. CODE 302.SUBPARTS B, C, E, F, AND)	
303.312.)	

NOTICE OF FILING

To:

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

Persons included on the
ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that we have today filed with the Office of the Clerk of the Pollution Control Board the **TESTIMONY OF LEONARD HOPKINS** on behalf of Southern Illinois Power Cooperative, a copy of which is herewith served upon you.



Kathleen C. Bassi

Dated: July 5, 2011

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
TRIENNIAL REVIEW OF WATER)
QUALITY STANDARDS FOR BORON,) **R11-18**
FLUORIDE AND MANGANESE:) **(Rulemaking – Water)**
AMENDMENTS TO 35 ILL. ADM. CODE)
302.SUBPARTS B, C, E, F, AND 303.312.)

Testimony of Leonard Hopkins on Behalf of SIPC

My name is Leonard Hopkins. I am the Environmental & Fuel Manager at Southern Illinois Power Cooperative (“SIPC”) located in south of Marion, Illinois, in Williamson County. I am responsible for environmental compliance and fuel procurement at the Marion Station. I have worked at SIPC for 18 years, with the last four years in my current position. This pre-filed testimony is presented on behalf of SIPC.

The Marion Generating Station is an electric generating station owned and operated by SIPC. The Marion Station has four generating units. Units 123 and 4 are fired by bituminous coal and coal slurry, while Units 5 and 6 are gas-fired combustion turbines. SIPC’s discharges from Outfalls 002 and 005 contain boron. Outfall 002 discharges from a settling pond that also includes process wastewater, boiler evaporation and blowdown, and other sources of wastewater. Outfall 005 also discharges from a settling pond, but discharges from Outfall 005 are intermittent. Both Outfalls 002 and 005 discharge into the South Fork of the Little Saline Creek. The south Fork of the Little Saline Creek would not be a continuously flowing stream without daily flow from the Marion Generating Station.

On July 1, 1993, the Board granted SIPC an adjusted standard in docket AS 92-10 from the general use water quality standards for boron codified at Section 302.208 of the Board’s

water quality standards. The Board's final opinion and order in docket AS 92-10 is attached for the Board's convenience. The Board granted SIPC an adjusted water quality standard for boron of 9 mg/L. The boron standard that was the subject of SIPC's adjusted standard is the water quality standard that the Illinois Environmental Protection Agency has proposed to amend in this proceeding.

Generally speaking, if a general use water quality standard for boron is necessary at all, SIPC agrees with the Agency that an acute standard of 40 mg/L is more appropriate than the 1 mg/L that currently exists. However, SIPC does not believe it can comply continuously with the proposed chronic standard of 7.6 mg/L.

Essentially, the boron water quality standard is the effluent standard for boron at the Marion Generating Station because the great majority of flow in the receiving stream is due to SIPC's discharge. This was in large part a basis for the Board's determination in docket AS 92-10. Pursuant to the NPDES permit for SIPC's discharges, SIPC is required to take an 8-hour composite sample of boron within its effluent at least once per month.

SIPC understands that the chronic standard is determined from the average of at least four samples taken during some time period. At first reading of the proposal, we thought this meant that we could average four months' worth of samples to equal the four days. SIPC believes it could comply with the proposed chronic standard with this interpretation of the averaging period. However, in a conversation with a representative of the Illinois Environmental Protection Agency ("Agency"), I learned that the Agency interpreted its proposal to mean that four samples must be taken within a single month and averaged to determine monthly compliance with the chronic standard. This interpretation presents several problems for SIPC.

SIPC understands there are advantages to averaging multiple samples taken over several days, because such sampling theoretically tends to capture variations in ambient conditions. Unfortunately, those variations in ambient conditions do not tend to be sufficiently extreme in SIPC's circumstance to provide the benefits normally resulting from multiple sampling. SIPC's higher boron levels seem to occur during the "shoulder" months of spring and fall when demand for power diminishes and discharge flow is reduced. Multiple samples taken under the same weather and ambient conditions will not likely improve SIPC's chances of complying with the 7.6 mg/L chronic standard. Though exceedances of the proposed 7.6 mg/L chronic standard are very infrequent, no more than two or three per year, SIPC requires the relief provided by the adjusted standard to remain in compliance.

Moreover, the effluent samples that SIPC takes are sent to an external lab for analysis. There is typically a two-week turn-around on results. These lab results are reported monthly, typically during the first two weeks of the following month. This compresses the time for ambient conditions to offer the advantages of averaging and certainly allows no margin for SIPC to somehow alter its operations to ensure compliance, though we do not know what adjustments to operations that we could possibly make in any event. Boron concentration numbers within our NPDES settling pond system will change very little over a three or four week period, so averaging over such a short timeframe will not yield significant differences.

SIPC prefers to retain the effectiveness of the adjusted standard that the Board granted in AS 92-10. The Agency recognizes SIPC's preference. In response to the Board's pre-filed question # 6, the Agency produced a list of the sources whose site-specific relief would either become moot on its face or should no longer be necessary based on the Agency's initial analysis of information. *See Exhibit 5.* SIPC is not included on this list. In response to a question by

counsel at the June 21st hearing in this matter, the Agency responded that SIPC was not included because we had contacted the Agency and expressed concern regarding our ability to comply with the proposed standard. Tr. p. 67 (June 21, 2011). We have had several conversations with the Agency regarding the boron standard both before and since the June 21st hearing and have concluded that retaining the effectiveness of our adjusted standard is the best solution for SIPC.

For these reasons, SIPC requests that the Board not change the status of the adjusted standard granted in AS 92-10. I am happy to answer any questions.

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 5th day of July, 2011, I have served electronically the attached **WAIVER OF SERVICE IN HARD COPY** upon the following persons:

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

and electronically (except for Andrew B. Armstrong and the Illinois Department of Natural Resources) and by first class mail, postage affixed upon persons included on the **ATTACHED SERVICE LIST**.



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SERVICE LIST
(R11-18)

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ILLINOIS POLLUTION CONTROL BOARD
July 1, 1993

IN THE MATTER OF:)
)
PETITION OF SOUTHERN ILLINOIS) AS 92-10
POWER COOPERATIVE (MARION POWER)) (Adjusted Standard)
FOR ADJUSTED STANDARDS FROM 35)
ILL. ADM. CODE 302.208(e))

OPINION AND ORDER OF THE BOARD (by B. Forcade):

On September 21, 1992, Southern Illinois Power Cooperative (SIPC) filed a petition for an adjusted standard for its Marion Power Station from the general use water quality standards for boron in 35 Ill. Adm. Code 302.208(e). Based on additional information supplied by the Agency, SIPC filed an amended petition on December 11, 1992. The Agency filed its recommendation on March 17, 1993. The Agency recommends granting the adjusted standard as requested in the amended petition. SIPC requested a waiver of the hearing and no hearing was held in this matter. On June 16, 1993, SIPC filed a Motion For Entry of a Final Order.

In its amended petition, SIPC requests that the following standard for boron be applied to the Marion Power Station:

From Southern Illinois Power Cooperative's Outfall 005 to a point of the South Fork of Saline River where it leaves the S-E quarter of Section 6, T.10S-R.4E, Williamson County, the standard shall be 9 mg/l and from said point to the point of confluence with the Middle Fork of the Saline River, where it leaves the S-W quarter of Section 28, T.9S-R.7E, Saline County, the standard shall be 3 mg/l.

(Am. Pet. at 3.)

BACKGROUND

SIPC operates the Marion Power Station located approximately 8 miles south of Marion, Williamson County, Illinois. (Pet. at 4.) The station has an electrical generating capacity of 272 mw and is comprised of four coal fired units. (Pet. at 4.)

Bottom ash from units 1, 2, 3 and 4 is sluiced to ponds 1 and 2 and is hauled off-site by contractors. (Pet. at 4.) The fly ash produced in units 1, 2 and 3 is sluiced to either ponds A-1 or B-3. (Pet. at 4.) The sluice water produced by water contact with the bottom ash is collected in pond 4 and discharged through outfall 002. (Pet. at 4.) The sluice water produced by water contact with the fly ash is collected in pond B-3 and discharged through outfall 005. (Pet. at 4.) Ash and plant drain

systems permit a degree of flexibility as to which pond and outfall the discharge is directed. (Pet. at 5.)

The station discharges wastewater to the Little Saline Creek, a tributary to the South Fork of the Saline River. The wastewater discharged from outfall 001, 002 and 005 are governed by SIPC's NPDES permit. (Pet. at 4.) The permit states the interim effluent limits for all parameters except boron, iron and total dissolved solids (TDS), and lists the final effluent limits for all parameters effective January 15, 1993. (Pet. at 5.) The permit also requires the monitoring of the outfalls for boron, iron and TDS for the purpose of characterizing the discharge. (Pet. at 5.) The final effluent limitation for outfalls 001, 002 and 005 is 1.0 mg/l as a daily maximum value for boron. (Pet. at 5.) The standards listed in the permit are the same standards established by the Board's regulations. SIPC contends that monitoring effluents and SIPC historical data regarding boron concentrations indicate that discharges from these outfalls suggests noncompliance with the final effluent limitation for boron. (Pet. at 5.)

DISCUSSION

Section 302.208(e) of the Board's general water quality standards establishes a numerical standard of 1.0 mg/l for boron. (35 Ill. Adm. Code 302.208(e).) Section 28.1 of the Act allows, in pertinent part, for an adjusted standard from a rule of general applicability upon adequate proof that:

1. factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to the petitioner;
2. the existence of those factors justifies an adjusted standard;
3. the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
4. the adjusted standard is consistent with any applicable federal law.

SIPC notes that the water quality standard for boron was based on evidence that higher levels of boron can harm irrigated crops. (Pet. at 18.) SIPC argues that this concern is not applicable, because neither the Little Saline nor the South Fork are used for irrigation purposes. (Pet. at 18, Exh. 3 at 4.) The Agency agrees that the basis of the boron standard was crop

protection from irrigation and not aquatic toxicity. (Ag. Rec. at 4.) The reports submitted by SIPC indicate that these waters are not used for irrigation. (Exh. 3.) The Agency further notes that use of these waters for irrigation would not be expected due to the small volume of flow in the Saline-South Fork system. (Ag. Rec. at 4.)

Under present operating conditions, the effluent discharges will result in violations of the boron standard. (Pet. at 17.) To comply with the boron standard SIPC would have to implement a compliance alternative. (Pet. at 17.)

SIPC has considered five alternatives for obtaining compliance with the effluent limitation. (Pet. at 6.) The alternatives considered were:

1. Removal of fly ash from the site in a dry condition;
2. Revision to cyclone burners to reduce fly ash combustibles and increase the ratio of bottom ash to fly ash.
3. Use of alternative fuels in place of Illinois coal;
4. Treatment of wastewater discharges using boron specific ion exchange; and
5. Treatment of wastewater discharges using osmosis.

SIPC has concluded that the compliance alternatives available are either technically infeasible or economically unreasonable. (Pet. at 6, Exh. 2.) Some of the compliance alternatives would lower the actual flow in the Little Saline and the South Fork thereby adversely impacting the aquatic ecosystem. (Pet. at 17.)

SIPC asserts that the proposed adjusted standard will not result in a change in operations at the station nor in the quality of the existing conditions in the Little Saline. (Pet. at 16.) The station has been operating at the proposed boron standard, sought in this petition, without evidence of any significant adverse impacts upon aquatic, human or terrestrial species or upon current uses of the Little Saline and the South Fork. (Pet. at 21.)

SIPC indicates that at the levels proposed in the adjusted standard there is no adverse environmental impact except for a potential impact to fish embryos and young fish. (Pet. at 19.) However, SIPC notes that the Little Saline and South Fork are less than adequate for fish spawning activities due to erosion, low flow and low pH. (Pet. at 19.)

SIPC asserts that current uses of the Little Saline and the South Fork will not be significantly impacted by the proposed adjusted standard. (Pet. at 20.) The Little Saline and the South Fork are not used as sources of water for either public, industrial or irrigation users. (Pet. at 20.) The primary use of the South Fork is for agricultural drainage. (Pet. at 20.)

The Agency recommends the granting of the adjusted standard. The Agency asserts that the best degree of treatment is in place at the Marion power station and that any more advanced treatment would not be cost effective, given the negligible environmental harm caused by the boron levels. (Ag. Rec. at 3.) The Agency agrees with SIPC that the alternative compliance strategies examined are not reasonable. (Ag. Rec. at 7.)

SIPC asserts and the Agency agrees that the adjusted standard is consistent with applicable federal law. (Pet. at 21, Ag. Rec. at 8.)

CONCLUSION

The Board finds that petitioner has justified the granting of an adjusted standard consistent with Section 28.1 of the Act. In adopting the general regulation on boron the Board was concerned with the effects of boron on crops. The waters affected by the adjusted standard are not used for crop irrigation. Further, the petitioner has demonstrated that the adjusted standard will have a minimal environmental impact. The Board finds that the petitioner has justified the need for the adjusted standard and the Board grants the adjusted standard as requested by the petitioner.

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

ORDER

Pursuant to Section 28.1(b), the Board hereby grants an adjusted standard from 35 Ill. Adm. Code 302.208(e) to Southern Illinois Power Cooperative for its Marion Power Station. The following standard becomes effective on the date of this order:

1. Southern Illinois Power Cooperative is granted an adjusted standard from 35 Ill. Adm. Code 302.208(e) for the discharge from its Marion Power Station. The adjusted standard applies to Little Saline Creek and the South Fork of the Saline River from Southern Illinois Power Cooperative's Outfall 005 which discharges into Little Saline Creek

to a point of the South Fork River in the N-E quarter of Section 20, T.10S-R.5E, Saline County.

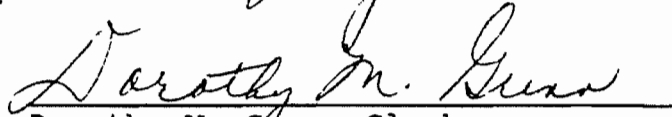
2. Instead of the standard for boron of Section 302.208(e), the following standards for boron shall apply to Southern Illinois Cooperative's Marion Power Station:

From Southern Illinois Power Cooperative's Outfall 005 to a point of the South Fork of Saline River where it leaves the S-E quarter of Section 6, T.10S-R.4E, Williamson County, the standard shall be 9 mg/l and from said point to the point of confluence with the Middle Fork of the Saline River, where it leaves the S-W quarter of Section 28, T.9S-R.7E, Saline County, the standard shall be 3 mg/l.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1992)) provides for appeal of final orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246, Motion for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 1st day of July, 1993, by a vote of 7-0.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board