

ILLINOIS POLLUTION CONTROL BOARD  
October 7, 1993

IN THE MATTER OF: )  
 )  
PETITION OF ILLINOIS POWER ) AS 92-7  
COMPANY (VERMILION POWER STATION) ) (Adjusted Standard)  
FOR ADJUSTED STANDARDS FROM 35 )  
ILL. ADM. CODE 302.208(e) )

SHELDON A. ZABEL and ERICA L. DOLGIN, SCHIFF, HARDIN & WAITE  
APPEARED ON BEHALF OF ILLINOIS POWER COMPANY;

CHARLES M. FEINEN<sup>1</sup> APPEARED ON BEHALF OF THE ENVIRONMENTAL  
PROTECTION AGENCY;

JOHN MCMAHON, ZIMMERLY, GADAU, SELIN & OTTO and CHARLES GOODALL,  
APPEARED FOR THE COMMITTEE ON THE MIDDLEFORK;

JACK PAXTON APPEARED FOR THE SIERRA CLUB.

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

On July 1, 1992, Illinois Power Company (IP) filed a petition for an adjusted standard for its Vermilion Power Station, located on a body of water commonly referred to as the Middle Fork of the Vermilion River. IP seeks relief from the general use water quality standards for boron, sulfate, and total dissolved solids (TDS) in 35 Ill. Adm. Code 302.208(e). Illinois Power requested a hearing in its petition. On July 14, 1992, the Illinois Chapter of the Sierra Club (Sierra Club) filed an objection. On July 20, 1992, the Committee on the Middle Fork of the Vermilion River (Committee) also filed an objection and request for hearing. The Illinois Environmental Protection Agency (Agency) filed its recommendation on August 7, 1992. The Agency filed an amended recommendation on November 20, 1992 modifying the proposed language of the adjusted standard. The Illinois Department of Conservation submitted a letter on August 20, 1992 in support of the adjusted standard.

Hearings were held in Danville, Illinois on December 9, 10 and 11, 1992, before hearing officer Everett Laury. Members of the public attended the hearings. Illinois Power filed its post-hearing brief on January 11, 1993. The Agency filed its brief on February 8, 1993. The Sierra Club and the Committee jointly filed a brief on February 10, 1993. Illinois Power filed a reply brief on February 25, 1993.

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<sup>1</sup> The Board notes that Mr. Feinen is presently an attorney with the Board. Upon hire, he withdrew his appearance in this case and did not participate in the Board's decision or deliberation in this matter.

Illinois Power is requesting an adjusted standard from the general use water quality standards for boron, sulfate, and total dissolved solids (TDS), as those standards apply to the Middle Fork of the Vermilion River (Middle Fork) below Illinois Power's Vermilion Power Station. Illinois Power is requesting the adjusted standard because of actual and calculated violations of the Board's water quality standards during periods of low flow in the river.<sup>2</sup> The following standards are imposed by 35 Ill. Adm. Code 302.208(e); 1.0 mg/l for boron, 500 mg/l for sulfate and 1000 mg/l for TDS.

Pursuant to its original Petition for Adjusted Standard, Illinois Power sought to change that standard to 10.0 mg/l(boron); 800 mg/l(sulfate), and 1,500 mg/l(TDS). The Agency has recommended in its amended recommendation that an adjusted standard be granted which would change the standard to 9.2 mg/l(boron); 800 mg/l(sulfate) and 1400 mg/l(TDS). The Agency, using the reported maximum concentrations provided by IP for boron, sulfate and TDS in the effluent provided by IP, determined that in the worst case the downstream concentrations would be 8.3 mg/l for boron, 789 mg/l for sulfate and 1388 mg/l for TDS. (Ag. Resp. at 7.) Therefore, the Agency suggests lower limits in the adjusted standard. (Ag. Resp. at 5.) IP now concurs in the adjusted standard as recommended by the Agency.

On July 1, 1993, the Board granted Illinois Power's motion for entry of a final order. On the same date, the Committee

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<sup>2</sup> The amount of water flowing in a stream may vary from day to day. The discharge of an effluent will be diluted to a greater or lesser degree depending upon how much flow is in the receiving stream at the time of discharge. More importantly, the downstream water quality concentration of a contaminant from an effluent will vary depending upon the flow in the receiving stream. For planning purposes USEPA and Illinois have selected one particular low flow condition called the 7Q10, the average minimum seven day low flow which occurs once in ten years. Not all low flows are 7Q10 flows. The Board's water regulations at 35 Ill. Adm Code 302.103 provide:

Except as otherwise provided in this Chapter, the water quality standards in this Part shall apply at all times except during periods when flows are less than the average minimum seven day low flow which occurs once in ten years.

The process of utilizing critical conditions for stream flow, loading and water quality parameters in the calculations is effectively required by federal regulations. See 40 C.F.R. 130.7(c)(1) (1992).

filed a motion to strike Illinois Power's motion. The Committee contends that Illinois Power's motion is an improper attempt to argue its case to the Board one more time. The Committee notes that all but paragraph 11 of the motion is unnecessary to the relief requested.

While the Board agrees with the Committee that Illinois Power's motion contains information and argument unnecessary for a motion for entry of a final order, the Board finds that the content of the motion does not warrant striking the entire motion. In granting Illinois Power's motion, the Board noted that it would enter a final order subject to the Board's time and resource constraints. While Illinois Power's motion contains excessive information, this information will not be considered by the Board.

#### BACKGROUND

The utility station for which IP seeks an adjusted standard is a coal-burning plant located five miles north of Oakwood, Illinois, adjacent to the Middle Fork of the Vermilion River. (Pet. at 4.) The station employs approximately 75 people and is staffed 24 hours a day, 7 days a week. (Pet. at 4.) The station has been in operation since 1955. (Pet. at 4.) The station consists of two coal-fired units with nominal net generating capacities of 70 and 95 MW and a 11 MW combustion turbine-generator. (Pet. at 4.)

Outfall 001 and outfall 003 consist primarily of discharge from the ash pond system. (Pet. at 4.) Outfall 001 is the outfall for the current ash pond system. (Pet. at 5.) Fly ash and bottom ash are hydraulically conveyed to a three pond system consisting of an east pond, a north pond and a polishing pond. (Pet. at 5.) The discharge through outfall 001 is from the polishing pond. (Pet. at 5.)

Illinois Power is constructing a new ash pond system consisting of a surface impoundment occupying 20 acres. (Pet. at 5.) The new system will be placed in service when the existing system becomes full, probably in 1993. (Pet. at 5.) The discharge from the surface impoundment is discharged from outfall 003. (Pet. at 5.) The chemical characteristics of the discharge from outfall 003 should be identical to the chemical characteristics of the present discharge from outfall 001. (Pet. at 5.) Historical data regarding the concentration of boron, sulfate and TDS suggest frequent exceedence of the effluent limitations. (Pet. at 6.)

IP considered six approaches for complying with the discharge effluent limitations. (Pet. at 6.) IP considered (1) combusting an alternate low sulfur, low boron coal, (2) combusting natural gas, (3) converting the existing wet transport

system for fly ash to dry ash handling, (4) installing additional wastewater treatment facilities, (5) segregating and treating fly ash transport water to remove boron, sulfates, and TDS, and (6) seeking an adjusted standard. (Pet. at 6.) IP has chosen to pursue an adjusted standard to achieve compliance. (Pet. at 6.)

#### ADJUSTED STANDARD PROCEDURE

The adjusted standard provision of the Illinois Environmental Protection Act (Act), at Section 28.1 (415 ILCS 5/28.1 (1992)), was created by the legislature to provide an expedited alternative to site-specific rulemaking. The result of either an adjusted standard or a site-specific rule proceeding is the same (i.e., permanent relief from a particular rule). In both a general rulemaking proceeding and a site-specific rulemaking proceeding, the Board, pursuant to Section 27 of the Act, is required to take the following factors into consideration: the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the cases may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution. (See specifically, Section 27(a).) However, the processes themselves are quite different.

When a petitioner chooses to file for a site-specific rulemaking, a full and open quasi-legislative hearing is held where petitioner must justify its request to promulgate a regulation specific to it which is different from the general rule. There are no "parties" in a rulemaking proceeding, although the Agency has authority to, and typically does, participate in rulemaking hearings. Any interested person may participate and ask questions at hearing. The proceeding is subject to the notice and comment procedures of the Illinois Administrative Procedure Act. (IAPA) (See Section 4(i) of the Act and 35 Ill. Adm. Code Part 102.)

An adjusted standard, on the other hand, is determined by the Board pursuant to an adjudicatory proceeding held subsequent to a general rulemaking. In contrast to the site specific rule procedure, the adjusted standard procedure is not subject to the requirements of the IAPA. The Agency is required by statute and Board rule to participate in the proceeding and to file a response to the petition, although it may even choose to become a co-petitioner. Other interested persons may participate in the proceeding. (See Section 4(f) and 28.1 of the Act, and 35 Ill. Adm. Code 106.Subpart G. Also see discussion infra at p. 10.)

Although the Act requires that adjusted standards be consistent with the Section 27(a) criteria, the level of

justification required, as set forth in Section 28.1(c), is that the petitioner present adequate proof that:

- . 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 that petitioner;
- . the existence of those factors justifies an adjusted standard;
- . 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
- . the adjusted standard is consistent with any applicable federal law.

For all of the reasons stated below, considering the justification required by Section 28.1(c), consistent with the Section 27(a) criteria, the Board finds that Illinois Power has not presented adequate proof to justify its request for adjusted standard.

#### SUMMARY OF TESTIMONY/DOCUMENTARY EVIDENCE

The petitioner presented evidence in support of its adjusted standard from employees of IP and consultants who performed various studies for IP. Thomas Davis, environmental technical specialist at Illinois Power, testified on the background of IP and the justification for the adjusted standard. Michael Rosen is an engineer with Sargent & Lundy who performed a study for IP on compliance alternatives. Donna Hall is a project scientist with Environmental Science & Engineering. Ms. Hall evaluated the effects of the adjusted standard on the Middle Fork River. James Smithson of Illinois Power testified on the biological impacts of the adjusted standard.

The Committee and the Sierra Club presented testimony from: Clark W. Bullard, Ph.D., Professor of Mechanical Engineering at the University of Illinois; Douglas T. Shaw, Ph.D., Professor of civil engineering specializing in water resources and environmental engineering at the University of Illinois; and R.W. Larimore, Ph.D., retired aquatic biologist at the Illinois Natural History survey and Professor of Zoology and Professor of Environmental Engineering at the University of Illinois. The three University of Illinois professors all commented upon what they believed to be the insufficiency of the evidence presented by Illinois Power.

The Agency presented testimony from Bob Mosher, Supervisor of the Standards Unit in the Planning Section, Bureau of Water, in support of the adjusted standard. A short one paragraph letter from John Tranquilli, Director of the Office of Resource Management of the Illinois Department of Conservation was also submitted into evidence in support of the adjusted standard as recommended by the Agency.

Neither the IDOC letter nor the testimony of Mr. Mosher of the Agency is accompanied by documentation to justify the **requested** numeric standards for boron, sulfate and TDS. Both positions appear to presume that the requested adjusted standard reflects the current and past discharge into the river, not the numbers actually requested in this proceeding. For example, the IDOC letter simply states: "We concur with IEPA that by allowing Illinois Power the requested variance, there will be no degradation of the quality of the aquatic community of the Middle Fork of the Vermilion River. **This opinion is predicated on the fact that the levels requested in the variance are well-within the range of levels for these substances which have been discharged by the company for the past 37 years.**" (emphasis added).

The only actual IDOC studies presented as evidence in this proceeding, however, were conducted in 1985 and 1987 and are referenced later in this opinion. The two-page prefiled testimony of Mr. Mosher of the IEPA also appears to be based upon an adjustment which reflects the current discharge levels, as opposed to the "worst case scenario" numbers actually requested. As stated by Mr. Mosher; "The existing data is sufficient to conclude that site-specific water quality criteria for boron, sulfate and TDS may be set at present levels.....The [requested standards represent] a worst case scenario, as evidenced by actual Agency measurements of Middle Fork water quality at a sampling station approximately 3.5 miles downstream of the ash pond outfall. **No instream measurement over the last five years has exceeded 2.1 mg/l boron.**"

While the Board has a high degree of respect for the opinions of its sister state agencies, it finds their testimony not very helpful to our evaluation of evidence in support of IP's request for an adjusted standard which would result in a legal authorization to discharge at levels much higher than is either currently allowed or currently being discharged. Thus, on the question of the appropriateness of the **requested** discharge standards the Board is left to evaluate the evidence as presented by IP and as contradicted by the three professors who testified on behalf of the Committee for the Middle Fork and the Sierra Club.

ARGUMENTS OF THE PETITIONER - ILLINOIS POWER

IP contends that no significant adverse environmental impact is expected under the proposed conditions because there will be no change from the present operations at the station or in the water quality conditions of the Middle Fork. (Pet. at 12.) IP notes that under the present operating conditions there is no significant adverse environmental impact. (Pet. at 12.) IP argues that water quality in the area of the station after 37 years of discharges has been rated higher than or equivalent to water quality in upstream areas. (Pet. at 14.) IP also argues that no beneficial biological impact on the Middle Fork is expected if the general use water quality standards are met. (Pet. at 14.)

IP notes that the boron standard was based on evidence that higher levels can harm irrigated crops. (Pet. at 15.) IP contends that there are no authorized withdrawals from the Middle Fork, therefore, this standard is not justified for the Middle Fork. (Pet. at 16.) IP argues that the boron standard is also not supported based upon the incidental exposure to recreational users and an evaluation of boron's effects on various aquatic organisms. (Pet. at 16.)

IP argues that the sulfate standard was established at a level to protect stock watering and fish, and to avoid serious adverse effects on public water supplies. (Pet. at 16.) IP argues that the rationales supporting the sulfate standard are not justified for the Middle Fork because the Middle Fork is not a potable water source, nor are any potable uses planned. (Pet. at 16.) Further, IP notes that there is no authorized withdrawal for agricultural or stock watering. IP also notes that the standard is not supported based upon incidental exposure to recreational users or evaluations of the effects of sulfate on aquatic organisms. (Pet. at 16.)

IP notes that the water quality standard for TDS is based on a level that the Board found would not be harmful to aquatic life. (Pet. at 16.) The United States Environmental Protection Agency established the same standard for TDS based upon the "safe for drinking standard". IP argues that this rationale is not justified for the Middle Fork because it is not a potable water source. (Pet. at 17.) Also IP contends that the standard is not supported upon the incidental exposure to recreational users. (Pet. at 17.) Further IP contends that the standard is not supported by the effects of TDS on aquatic organisms in the Middle Fork. (Pet. at 17.)

IP claims that it has met its burden of proof and that the studies, data and witness testimony demonstrate that the proposed adjusted standard is justified. (Rep. Br. at 5.) IP contends

that the adjusted standard is consistent with all applicable laws and would not violate any antidegradation provisions or the Illinois Endangered Species Protection Act. (Rep. Br. at 14.) IP also claims that the proposed language concerning the computation of permit effluent limitations is authorized and appropriate. (Rep. Br. at 17.)

#### ARGUMENTS OF THE COMMITTEE AND THE SIERRA CLUB

The Committee along with the Sierra Club (collectively, "the Committee") submitted a brief in opposition of the adjusted standard. Basically, the Committee argues that IP has failed to meet its burden of proof and that IP's claim that its pollution has no adverse effect is based on incomplete and unreliable data and studies. (Com. Br. at 17.) The Committee notes that no tests were performed during the first 18 years that the plant was in operation. (Com. Br. at 19.) Further, the last study of the Middle Fork's biotic system was conducted in 1985-1986. (Com. Br. at 20.) The Committee also notes several gaps in the data presented by IP. (Com. Br. at 21.)

The Committee claims that IP could comply with the present standards without any lost jobs or forgone economic development, at a monthly cost of no more than a few cents per residential ratepayer. (Com. Br. at 2.) The Committee suggests an alternate means of achieving compliance and also questions the costs presented by IP for some of the compliance alternatives considered. (Com. Br. at 36.)

The Committee claims that adjusted standards can only be granted in a case where a stream is dirtier and less ecologically diverse than the norms considered in establishing the general use standards. (Com. Br. at 8.) The Committee argues that IP has not shown that the factors are "significantly and substantially" different to justify a less stringent standard. (Com. Br. at 10.)

The Committee also claims that the rationales supporting the standards for boron, sulfate and TDS are fully applicable to the Middle Fork. (Com. Br. at 12.) The Committee claims that more stringent standards are justified due to the greater diversity and the presence of species on the brink of disappearing. (Com. Br. at 14.)

The Committee contends that the adjusted standard would conflict with federal and state nondegradation rules under the Clean Water Act and with the "protect and enhance" requirements of the Wild and Scenic Rivers Act. (Com. Br. at 42.) The Committee also claims that IP's pollution amounts to a "taking" of endangered species under the Illinois Endangered Species Act. (Com. Br. at 45.) The Committee also argues that any adjusted standard should not reference mixing requirements used to determine the terms of IP's NPDES permit. (Com. Br. at 47.)



ANALYSIS

The primary component of the requested relief is the change in water quality standards that affect the Middle Fork of the Vermilion River. The Board must focus on these numerical alternative water quality standards, and not simply the impact of Illinois Power's current effluent, for three reasons. First, the Act at Section 28.1 requires the Board to focus on whether the requested adjustment is consistent with the factors applied to general rule making<sup>3</sup> or will result in unexpected results. Since IP's requested adjustment is numerical water quality values of 9.2, 500, and 1400, these are the values the Board must determine to be consistent with the factors in order to grant the adjusted standard. Second, Section 28.1 requires the Board to evaluate consistency with federal law, and federal law places significant emphasis on the numeric water quality values and use designations of the waterway. Third, water quality values represent an official state determination that long term exposure **at such levels** will not cause harm or adverse environmental consequences.<sup>4</sup>

The existing and requested standards (in mg/l) are as follows:

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<sup>3</sup> Those factors, set forth in Section 27(a) are: the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, **the nature of the... receiving body of water...and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.** (emphasis added)

<sup>4</sup> Promulgation of water quality standards based upon numbers which reflect a "worst case scenario" in actuality represent a legal determination, governed largely by federally required procedures, of the appropriateness of water quality **at that level** to protect the designated uses. Such promulgation will, in fact, allow the discharger subject to its limits to routinely discharge at levels which achieve, but do not exceed, that standard at all times. While we appreciate the Agency's position that routine discharge at the requested level is unlikely, in the context of this proceeding, the Agency is asking us to give IP that legal latitude.

Parameter	Existing Standard	Requested Standard <sup>5</sup>
Boron	1.0	9.2
Sulfate	500	800
TDS	1000	1400

As earlier stated, the justification for an adjusted standard is explicitly stated in the Act at Section 28.1(c). In addition to the factors enumerated by Section 28.1(c), the petition must also contain the information required by 35 Ill. Adm. Code 106.705. The petitioner is required to provide information on the petitioner's activities, compliance alternatives including costs for each alternative and the environmental impact of the adjusted standard. This additional information is crucial to the Board's review and is necessary to support the justification of the adjusted standard.

The petitioner has the burden of proof in an adjusted standard. (35 Ill. Adm. Code 106.808.) After reviewing the record in this matter, the Board finds that IP has not met the burden of proof for an adjusted standard.

For the ease of the reader, the Board will first review the relevant facts applicable to general rulemaking related to IP's request for an adjusted standard. However, as also stated earlier, in analyzing adjusted standards the Board's first concern is the required justifications pursuant to Section 28.1(c) and other information required by 35 Ill. Adm. Code 106.705.

#### RELEVANT SECTION 27(A) CRITERIA

##### THE RECEIVING BODY OF WATER: THE MIDDLE FORK CORRIDOR OF THE VERMILION RIVER

The Middle Fork is rated as the number one river ecosystem in Illinois. (Tr. at 236.) The Middle Fork Corridor is a 17.1 mile stretch of the river which runs from river mile 46.9 near Collison, to river mile 29.8 near the confluence of the Salt Fork. (IP Exh. 7 at 39.) This portion of the Vermilion River has been classified as a Class A stream. (Com. Exh. 2 at 3.) This classification is given to streams of excellent quality that are

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<sup>5</sup> As reduced by the Agency's recommendation. As earlier stated, IP's petition had requested a 10 mg/l standard for boron, 800 mg/l standard for sulfate and a 1500 mg/l standard for total dissolved solids. IP does not object to the standards as proposed by the Agency.

comparable to the best situations without human disturbance. (Com. Exh. 2 at 2.) Only 24 stream segments comprising a total of less than 500 miles of stream have been classified as Class A in Illinois. (Com. Exh. 2 at 2.) A report issued in 1989 by the Agency found that the Middle Fork possessed the best overall water quality, instream habitat and fish populations when compared to other sub-basins of the Vermilion River. (IP Exh. 6 at 3.) The Middle Fork corridor supports a wide array of terrestrial fauna and flora as well as a unique fishery. (IP Exh. 7 at 39.)

The Middle Fork River was designated as a State Protected River in 1986. (IP Exh. 11 at 1-8.) The Middle Fork was designated as a federal "scenic" river in 1989. (Pet. at 4.) This designation permanently preserves the outstanding and unique values of the Middle Fork corridor. (Pet. at 21.) This designation requires that the section be free of impoundments and relatively unaltered in its course, and that the shoreline must remain largely primitive and undeveloped. (Pet. at 21.)

The Middle Fork has a unique scenic value. The Middle Fork is a free flowing river free of impoundments. (IP Exh. 11 at 1-6.) There is limited access to the river by roads and few roads are visible from the river. (IP Exh. 11 at 1-6.) Most of the view from the river is of trees, bluffs and open fields. (IP Exh. 11 at 1-7.) The shoreline is mostly old agricultural field, forests, or forested wetlands. (IP Exh. 11 at 1-7.) The river supports diverse and abundant fish, plant, insect and other wildlife populations. (IP Exh. 11 at 1-7.)

Numerous ecological values are also found in the Middle Fork Corridor. (IP Exh. 11 at 1-8.) There are an estimated 40 acres of prairie habitat. (IP Exh. 11 at 1-8.) Many rare plants and plants uncommon to Illinois can be found in the area. (IP Exh. 11 at 1-8.) Three natural habitats in the Middle Fork Corridor have been designated as State Nature Preserves. (IP Exh. 11 at 1-8.)

The Middle Fork River supports a diverse fishery, including the river redhorse and the mimic shiner, fish species considered rare in Illinois. (Com. Br. at 7.) Two endangered species, the bluebreast darter and the bigeye chub have been documented in the Middle Fork. (IP Exh. 6 at 5.) IP's consultant testified to the disappearance of the bigeye chub in the Middle Fork. (Tr. 88.) IP's consultant notes that there is no correlation between the disappearance of the bigeye chub and Illinois Power's operation. (Tr. at 88.) The consultant notes that the chub has been in very low numbers for well over 20 years and there is no documentation relating to the disappearance of the chub. (Tr. at 89.) No Illinois stream other than the Middle Fork provides the habitat required by the bluebreast darter. (App. E of Pet, "IEPA Vermilion River Basin Report", p.38.)

The Illinois Natural History Survey has described the Middle Fork as possessing the best overall invertebrate diversity of all Illinois streams, with 23 of the collected species considered rare in Illinois, including the endangered wavy-rayed lampmussel, which was last observed near the IP plant in 1991. (Sierra Club Exh. 1, p. 387.) The Middle Fork also supports a variety of species of birds some of which are endangered or threatened including the bald eagle. (IP Exh. 11 at 1-7.)

The Middle Fork River is one of Illinois' most popular canoeing rivers. (IP Exh. 11 at 1-9.) The river also supports a good game fish population. (IP Exh. 11 at 1-8.) Parks along the river are used for hiking, camping, horseback riding and hunting. (IP Exh. 11 at 1-8.) There are 100 archaeological sites in the corridor. (IP Exh. 11 at 1-8.)

#### EFFECT OF PROPOSED ADJUSTED STANDARD ON THE RECEIVING BODY OF WATER

IP argues that there will be no greater effect on the Middle Fork with its requested adjusted standard than there exists with IP's current discharge. As we already pointed out, however, the requested adjustment is for a water quality standard much higher than the measured levels which generally result from current effluent discharges. For this reason and for the reasons further explained below, the Board finds serious flaws with the arguments and evidence presented by IP.

As will be addressed in additional detail later, Section 28.1(c)(3) requires the petitioner to show that 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. It is therefore important to clearly focus on whether the record demonstrates that long term exposure to boron levels of 9.2 mg/l, sulfate levels of 800 mg/l, and TDS levels of 1400 mg/l have been shown to produce no adverse effects beyond those earlier considered by the Board in the rule making which adopted those standards.

#### Toxicity Tests

Illinois Power introduced the results of toxicity testing on effluent for the Vermilion plant. (IP Exh. 9.) That exhibit is a document showing that the Agency conducted a toxicity test on the ash pond effluent on April 22, 1992. (IP Exh. 9.)

The one-page document is divided into four sections. The first section is called "Test(s) Conducted" and includes two columns, "Acute" and "Chronic", each column has three tests listed and each entry has a location to the left to place an "x" or check mark. Under the acute column, the tests for "96-hr

static fathead minnow", and "48-hour static *Ceriodaphnia dubia*" are marked with an "x". The second column is called "Chronic" and none of the three tests have been checked or marked with an x.

The second section of the document is called "Acute Results" and contains rows for the test results in each of the three tests listed in the section above under acute tests. The sheet does not contain check marks indicating any of the tests were conducted, but does include numerical entries of 5 and 0 under the columns "Receiving water mortality" and "100% conc. mortality", respectively. Near the end of the section, the phrase "No significant acute toxicity observed" is checked.

The third section of the document is called "Chronic Results" and contains rows for the test results in each of the three tests listed in the section above under chronic tests. The sheet does not contain check marks indicating any of the three chronic tests were conducted, nor does this section contain any numerical entries under the columns "Receiving water mortality" and "100% conc. mortality". However, near the end of the section, the phrase "No significant chronic toxicity observed" is checked.

The final section of the document is entitled "Comments". In this area the report states, "The effluent did not exhibit acute toxicity to fathead minnows or *Ceriodaphnia* or chronic toxicity to *Selanstrium* algae. The effluent was not toxic to MICROTOX."

Several factors concern the Board regarding this document. First, there is no indication of what was being tested other than "effluent flow" from "4/22/92". There is no indication of the boron, sulfate, or TDS levels for the material being tested. Second, there was no testimony by the individual who conducted the test to explain in some detail how the test was conducted and the results of the test. The Board is left to divine the results simply from the face of the one page document itself. This is complicated by the fact that the document is internally inconsistent when it indicates in section one and the first part of section three that no chronic tests were performed, yet seems to state in its conclusions the results of some chronic tests. None of the tests indicate whether they were conducted in accordance with standard toxicity testing practices accepted by the Board at 35 Ill. Adm. Code 301.106 (1992). Additionally, the results checked indicate no "significant" acute or chronic toxicity was observed, but fail to explain what would be considered significant.

The Board has defined acute and chronic toxicity for aquatic toxicity matters at 35 Ill. Adm. Code 302.100 (1992):

"Acute Toxicity" means the capacity of any substance or combination of substances to cause mortality or other adverse effects in an organism resulting from a single or short-term exposure to the substance.

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"Chronic Toxicity" means the capacity of any substance or combination of substances to cause injurious or debilitating effects in an organism which result from exposure for a time period representing a substantial portion of the natural life cycle of that organism, including but not limited to the growth phase, the reproductive phases or such critical portions of the natural life cycle of that organism.

The Board's regulations establish testing requirements to determine toxicity criterion. (See 35 Ill. Adm. Code 302.612 through 302.642.) These testing requirements are specifically applicable to determining toxicity of complex mixtures of substances (including effluent mixtures). (See 35 Ill. Adm. 302.630, for example.) While these are not the only results by which toxicity can be determined, or the only results the Board can consider in an adjusted standard, they clearly indicate the type of detail the Board considers in evaluating scientific information to determine toxicity in an aquatic medium. The test submitted by Illinois Power does not persuade the Board that the effluent from Illinois Power on 4/22/92 (whatever its composition might be) had no chronic toxicity. Nor does it persuade the Board that the requested water quality values for boron, sulfate and TDS will demonstrate no chronic toxicity.

#### Biological Studies

In support of its petition for an adjusted standard IP has studied the historical data from two studies of the Middle Fork. IP used results from sampling done in 1985-1986 by the Agency<sup>6</sup> and results from a 1978 study performed by an IP consultant relating to potential expansion of the power station. (IP Exh. 7 at 39.) The 1985-1986 Agency water quality survey of the Vermilion River basin included samples from an upstream station, a downstream station and the Kickapoo State Recreation Area station. (IP Exh. 7 at 33.) This study contained data on macroinvertebrate and fish. (IP Exh. 7 at 40.) The study performed by IP's consultant covered the aquatic and terrestrial

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<sup>6</sup> The Illinois Department of Conservation and Illinois Natural History Survey also participated in this study. The Agency issued a report on the survey in 1989 which is attached to IP's petition as Appendix E.

ecology adjacent to the power station. (IP Exh. 7 at 39.) This study contained data on three aquatic communities (periphyton, macroinvertebrate and fish).

A 1987 study by the Illinois Department of Conservation (DOC study) was also referenced by IP. The DOC study found 23 of 51 collected species considered rare in Illinois. (IP Exh. 6 at 5.) The survey identified 940 macroinvertebrates representing 51 taxa. (IP Exh. 6 at 5.) Similar communities were found above and below the discharge. (IP Exh. 6 at 5.) The 1978 IP study collected 2,464 macroinvertebrates representing 53 taxa from three sample sites. (IP Exh. 6 at 5.) Downstream communities were similar to upstream communities. (IP Exh. 6 at 5.)

The studies documented several species of fish which are considered rare or uncommon in Illinois. (IP Exh. 6 at 5.) These species include the river redhorse, bigeye shiner, mimic shiner and eastern sand darter. (IP Exh. 6 at 5.) Additionally, two endangered species, the bluebreast darter and bigeye chub were collected. (IP Exh. 6 at 5.) Several game species were also collected in the area. (IP Exh. 6 at 5.) Upstream and downstream fish communities were found to be very similar. (IP Exh. 6 at 5.)

The Committee claims that the studies used by IP are inadequate. The Committee contends that many more samples would be required to demonstrate no effect. (Prefiled testimony of R.W. Larimore at 15.) The data presented by IP indicates an increase in periphyton growth downstream of the power station. The Committee argues that the increase in primary production and the lower number of fish downstream suggests that the increase in primary production is stressing the fish. (Prefiled testimony of R.W. Larimore at 16.) The Committee notes that low-flow conditions and a stressed population can lead to "summer kills." (Prefiled testimony of R.W. Larimore at 16.) The Committee notes that the 7Q10 low flow condition has not been reached on the segment of the Middle Fork for the last 12 years. (Prefiled testimony of C. Bullard at 1.) Therefore, the Committee contends that the data presented does not represent the effect on the species during low flow conditions.

The Board finds the biological studies presented by Illinois Power are of no value in resolving the question of whether long term exposure to boron at 9.2 mg/l, sulfate levels of 800 mg/l, and TDS levels of 1400 mg/l produce no adverse effects beyond those earlier considered by the Board. First, the Board notes that at no time during the studies did water quality values approach these levels. The highest recorded value for boron during the study was the October sample at test site 3 with a boron value of 1.23 mg/l, all other boron levels were below the water quality standard of 1.0 mg/l. The highest level for sulfate was the October sample at site 3 with a sulfate level of 388 mg/l, well below the water quality standard of 500 mg/l. The

highest level of TDS was the October sample at site 3 with a TDS value of 665, well below the water quality standard of 1000 mg/l. (IP Exh. 7, p. 57, Table 7-1.) Nearly all of the remaining parameters were far below water quality standards. If any conclusion is to be drawn from these studies, it is that contamination levels which are mostly far below the existing water quality standards produce no significant adverse effects in the biological species studied in that reach of the waterway.

It is interesting to note that some adverse effects were noted in the study. In comparing the periphyton densities over time the study concluded:

Analysis of historical data showed few differences between the periphyton, macro-invertebrate, and fish communities upstream from the Vermilion power station discharge with those downstream. One change, the reduced periphyton densities at sites 2 and 3 in October, 1978, may have been related to low flows in the river (Table 7-1). As the flows decrease, so does dilution of the Vermilion power station ash pond discharge. Three chemicals, boron, iron, and manganese, which were slightly elevated at sites 2 and 3 in September and November may have contributed to the reduced periphyton densities (Table 7-1).

(IP Exh. 7, p. 56)

The boron levels (at sites 2 and 3) during that period were September (0.77 and 0.67), October (0.96 and 1.28), and December (0.80 and 0.87). Only one sample was over the 1.0 mg/l water quality standard. A study showing adverse effects detected at these low levels for such a brief period of time provides no empirical support for IP's argument of no adverse environmental effects. Rather, it shows the presence of adverse environmental effects at a concentration nine times lower than the level which IP has requested for an adjusted standard.

#### THE TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS OF MEASURING OR REDUCING THE PARTICULAR TYPE OF POLLUTION.

Illinois Power considered the technical and economic factors for six alternatives to the adjusted standard to achieve compliance with the water quality standards. The alternatives considered by Illinois Power include (1) combusting an alternate low sulfur, low boron coal, (2) combusting natural gas, (3) converting the existing wet transport system for fly ash to dry ash handling, (4) installing additional wastewater treatment facilities, and (5) segregating and treating fly ash transport water to remove boron, sulfates, and TDS. Upon the request of the Agency, Illinois Power also considered a modification to one of the treatment options.



Several of the options will achieve effluent limitations necessary to ensure compliance with the existing water quality standards. Compliance is clearly technically possible. For example, segregating the fly ash from the remaining processes and providing treatment or disposal will allow compliance. (IP Exh. 4, p. 11.) This leaves the economic evaluation.

The economic evaluation was based on a remaining plant life of 30 years, a 65% capacity factor, a present value rate of 10.12%, and a levelized fixed charge rate of 15.9%. (Pet. Table 4 of Exh. 2.) The capital costs for the treatment options include a 20% design margin and a 20% contingency fund. (IP Exh. 3, p. 16.) Many of the operating costs are inflated at 5% per year. (IP Exh. 3., p. 22.) The capital costs include two factors specific to the utility industry: first, allowance for funds used during construction (AFUDC) which represents cost of money and second, the capability charge which represents the loss of net generating capacity when consuming new power. Total costs are based upon the present value of revenue requirements (PVRR), which enables alternatives with different capital and operating expenses to be compared on an equivalent basis. (IP Exh. 3., p. 16)

Two options appeared to offer full water quality compliance at the lowest cost: dry fly ash disposal and the Agency suggested alternative of recycling ash sluice water back to the cooling tower with side stream reverse osmosis. The capital costs, operating costs and PVRR for these options are as follows (IP Exh. 3, Table 3, Table 4):

METHOD	CAPITAL COSTS	OPERATING COSTS	PVRR
<b>Dry Fly Ash Conversion</b>			
Offsite Disposal	\$3,250,000	\$900,000	\$17,300,000
Onsite Disposal	\$7,250,000	\$450,000	\$17,000,000
<b>Recirculation with</b>			
Reverse Osmosis	\$6,200,000	\$275,000	\$13,000,000

According to a 1980 survey (IP Exh. 10, App. C, p. 1), the total amount of ash being disposed of in ponds by utilities was approximately equal to the total amount being disposed of dry or returned to the coal mine. In the Midwest, more ash was being disposed of dry or hauled back to the mine. Dry disposal was the predominant process among Illinois utilities. The survey predicted that ash disposal for new sites would probably trend toward dry ash disposal nationwide, due to increased ash marketability and stringent water pollution control regulations. (IP Exh. 10, App. C, p. 1.)

Illinois Power previously constructed dry fly ash handling facilities at its Baldwin power station for about \$1,000,000, and sells or disposes of the fly ash produced there. (IP Exh. 10, p. 15.) Illinois Power's 1988 ash disposal study showed conversion to a dry fly ash system having capital costs of approximately \$2,412,000. Off site disposal was estimated at \$5 per ton. (IP Exh. 10, Exh. 13, and Appendix D of Pet, p. 4.) The present estimates are founded on the 1988 study, but the cost increases to \$3,250,000 and \$20 per ton are not well explained.

The Committee suggests that the University of Illinois operates a coal fired facility one-third the size of Illinois Power's facility and disposes of fly ash and scrubber wastes in a coal mine near Springfield for \$2.10 per ton including transportation. (Middlefork Exh. 4., p. 3-4; See also Tr. 403-405.) The Committee states that, based upon the 1988 ash study, Illinois Power will be required to construct dry ash handling anyway during the final years of Vermilion's service life, regardless of the decisions made today regarding the ash pond effluent. (Presubmitted testimony of Clark W. Bullard, Filed November 23, 1992, p. 11; Tr. 410-412.) Illinois Power cross examined Dr. Bullard on this point, but did not offer testimony rebutting his assertion.

The Committee contends that IP can achieve compliance at a costs of only a few cents per month per rate payer.

The alleged cost of pollution control (\$17 million present value revenue requirement) levelized over the 30-year remaining life of the plant, is \$1.82 million per year. IP generates about 20,000,000,000 kilowatt-hours per year. This means rates would increase by only \$0.0001/kWh (one-hundredth of a cent per kWh). IP charges me approximately 10 cents kWh for electricity, so my bill would increase by only one tenth of one percent (less than 5 cents per month). And these calculations assume that IP stockholders pay nothing towards the cost of compliance with the general use water quality standards.

(Presubmitted testimony of Clark W. Bullard, Filed November 23, 1992, p. 9.)

The Committee contends that actual cost of compliance versus non-compliance is \$5 million, not \$17 million, and therefore costs would be even lower. (Tr. 425.) Illinois Power has specifically declined to present information on the costs to rate payers or equity holders for this project stating the size of the utility or how the costs are paid are not relevant to this proceeding. (Tr. 598.) Illinois Power asserts the only relevant fact is that costs must be compared to the environmental benefit of compliance, which they assert is zero. Therefore, IP argues that the cost is too high.

The Board must consider an additional point raised by the Committee. Since at least 1986 Illinois Power has known that its ash pond effluent did not meet the necessary standards for boron, sulfates and TDS. (IP Exh. 13.) In 1988 Illinois Power was facing a decision on ash disposal. The 1988 study clearly identified the environmental limitations that the selected ash disposal method must achieve. That study correctly identified the necessary limitations for boron, TDS and sulfates as 1.0, 1000, and 500 mg/l in the effluent. Those limitations are the existing water quality standards from which Illinois Power now seeks relief. For reasons that are totally unexplained, Illinois Power spent approximately \$4,000,000 for the construction of a new lagoon which will not meet the effluent limitations identified as design criteria in the 1988 study as necessary effluent limitations for boron, TDS and sulfates.

JUSTIFICATION PURSUANT TO THE SECTION 28.1(c) FACTORS

In addition to persuading the Board that its requested adjusted standard is "consistent" with the Act's general rule making factors (the relevant ones outlined above).

IP must justify its petition for a adjusted standard pursuant to Section 28.1(c). Specifically, it must provide "adequate proof" that:

- . 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 that petitioner;
- . the existence of those factors justifies and adjusted standard;
- . 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
- . the adjusted standard is consistent with any applicable federal law.

WHETHER THE PETITIONER HAS JUSTIFIED THAT THE FACTORS RELATING TO ILLINOIS POWER ARE SUBSTANTIALLY AND SIGNIFICANTLY DIFFERENT FROM THE FACTORS THE BOARD RELIED UPON IN ADOPTING THE GENERAL REGULATION APPLICABLE TO PETITIONER.

The Board adopted its general water quality standards in March of 1978. Those standards apply to all Illinois dischargers, including all utilities who discharge effluent into the rivers and streams of Illinois. The only exceptions those

dischargers who have sought a site-specific rule pursuant to Section 27 or justified an adjusted standard pursuant to Section 28.1.

As set forth in IP's own documentation, (IP Exh. 7, p. C-1, Table C-1) the Board's water quality standards are actually higher than those promulgated or recommended by other government regulatory agencies or scientific institutions:

<u>AGENCY</u>	<u>BORON</u>	<u>SULFATE</u>	<u>TDS</u>
USEPA Secondary MCL	NA	250	500
USEPA MCL	NA	400/500	NA
Ambient Water Quality Criteria	0.750	250	250
National Academy of Sciences	less than 1	NA	NA
IPCB	1.0	500	1,000
<u>Illinois Power Requested Values</u>	<u>9.2</u>	<u>800</u>	<u>1,400</u>

In adopting the general water quality standards the Board stated that:

. . . all waters should be protected against nuisances and against health hazards to those near them; **that all waters naturally capable of supporting aquatic life, . . . should be protected to support such life;** and that waters that are used for public water supply should be clean enough that ordinary treatment processes will assure their potability. (emphasis added.)  
(In the Matter of: Effluent Criteria (March 7, 1972), R70-8, 3 PCB 755, 759.)

In adopting the water quality standard for boron the Board noted that 1.0 mg/l:

. . . is based on evidence that higher levels can harm irrigated crops. While 100% irrigation is unlikely in Illinois, the uncontrolled discharge of larger quantities is clearly undesirable. We have proposed no effluent standard because of the lack of evidence as to treatment methods. The testimony suggests that compliance with the stream standard should not be difficult.  
(In the Matter of: Effluent Criteria (March 7, 1972), R70-8, 3 PCB 755, 761.)

In adopting the water quality standard for sulfate, the Board concluded that a limit was "desirable to protect stock watering and fish." (In the Matter of: Effluent Criteria (March 7, 1972), R70-8, 3 PCB 755, 762.) The Board found that a level of 500 mg/l would provide adequate protection for fish and avoid serious adverse effects on public water supplies. (In the Matter of: Effluent Criteria (March 7, 1972), R70-8, 3 PCB 755, 762.)

The Board adopted a level of 1000 mg/l for total dissolved solids to protect aquatic life. (In the Matter of: Effluent Criteria (March 7, 1972), R70-8, 3 PCB 755, 763.)

IP claims that the factors relied on by the Board in adopting the general water quality standards for boron, sulfate and TDS are not applicable to its discharge to the Middle Fork. IP notes that the Middle Fork is not presently a source for crop irrigation or stock watering. IP further contends that the Middle Fork is not presently a potable water source or expected to be a source of potable water in the future. IP also argues that the standards are not supported based upon incidental exposure to recreational users or effects on aquatic organisms.

To justify its request for an adjusted standard, Illinois Power must show that the factors relating to its situation are substantially and significantly different than those considered by the Board in adopting its existing water quality standards. No evidence or argument was presented regarding how IP's situation was any different than any other Illinois utility or discharger who is discharging effluent into an Illinois waterway, except that the waterway IP discharges into is the purest of all Illinois rivers.

IP presents no evidence concerning the ability or inability of other electric utilities in the state to comply with the standards and why the IP plant is different. It presents no evidence as to why the technology at its Vermilion plant is different than that at other plants which presumably comply. IP's only suggested significant difference is that the river it is discharging into is pure and has virtually no other dischargers or users. It argues that since the river is still designated "pure" after it has discharged in excess of the levels necessary to protect general use standards for over 37 years (at actual measured numeric water quality values much lower than requested in its petition), its petition is justified.

IP also argues that because the general water quality standards were developed to protect crop irrigation, stock watering and drinking water and the Middle Fork is not presently used for any of those reasons, IP should be allowed to discharge at a much greater level than that considered by the Board when it developed standards to ensure safe drinking and irrigation waters.

WHETHER THE PETITIONER HAS PROVEN THAT "SUBSTANTIALLY AND SIGNIFICANTLY DIFFERENT FACTORS" JUSTIFY AN ADJUSTED STANDARD

Section 28.1(c)(2) requires the petitioner to prove that the existence of the substantially different factors justifies an adjusted standard. IP contends that because the factors on which the Board based the water quality standards are not present in the Middle Fork an adjusted standard is justified. The Board contests that very conclusion.

IP notes that the Middle Fork is not currently used for crop irrigation or stock watering and no such uses are planned. IP also claims that the low flow of the Middle Fork does not make it suitable for crop irrigation or stock watering. However, the Committee notes that even though the Middle Fork is not used for stock watering it is used by the various wildlife species that inhabit the shorelines of the Middle Fork. The Committee contends that the same standards are necessary to protect these species from possible adverse effects.

The factors presented by IP are not substantially or significantly different, nor do they justify the granting of the adjusted standard. One purpose of water quality standards is to maintain environmentally appropriate water quality. This is particularly important for high quality streams such as the Middle Fork. IP has not sufficiently demonstrated that the levels of the adjusted standard will not lower the quality of the Middle Fork from the quality contemplated in the Board's water quality regulations.

IP claims that the proposed standard does not represent any change from the current levels discharged. IP argues that the Middle Fork has achieved its high quality level during a period when IP has been discharging at the proposed levels of the adjusted standard. However, IP has provided insufficient documentation of the history of the stream quality and the levels of the discharge for the Board to conclude that the adjusted standard would maintain the quality of the Middle Fork. Moreover, the water quality standards requested by Illinois Power represent a substantially higher numeric value than generally result from its current discharge and a significant degradation of the quality compared to existing water quality standards.

IP also claims that the standards are not applicable because the factors used to establish the levels are not present in the Middle Fork. However, the factors considered in establishing the water quality standards represented the most sensitive use and were not intended to limit the standards to those uses. IP has failed to demonstrate that the proposed standard would not affect the quality of the stream or other uses of the waters of the Middle Fork in the future.

Further, Illinois Power has made no attempt to demonstrate that the requested levels would have no impact on crop irrigation and drinking water consumption. Conversely, Illinois Power argues that those are not present uses or contemplated future uses and therefore Illinois Power is justified in contaminating the water to such a degree that the uses are unacceptable. We disagree. IP may not be factually correct<sup>7</sup> and, in any event, the argument is not sound environmental policy.

Second, the Board cannot condone Illinois Power taking away these potential future uses from one of the most protected waterways in the state based on the facts presented here. The goal of the water pollution control program in Illinois is to "restore, maintain and enhance the purity of the waters of this State..." (Section 11 of the Act, 415 ILCS 5/11 (1992).) The goal is to improve the quality of inferior waters; it is not to degrade the quality of pristine waters.

The Illinois Supreme Court in reviewing a similar request for an adjusted standard affirmed the Board's denial and found that the denial of the adjusted standard was consistent with the protection of the water as a resource.

The Board, at the outset, disagrees with CIPS' interpretation of the definition of water pollution in the Act. The Board argues that the Act treats water as a resource, and that pollution occurs whenever contamination is likely to render water unusable. Under the Board's interpretation there is no need to show that actual harm will occur, only that harm would occur if the contaminated water were to be used. Since the Board is charged with administering the Environmental Protection Act, its interpretation of the statute is entitled to deference. (Massa v. Department of Registration & Education (1987), 116 Ill.2d 376, 107 Ill.Dec. 661, 507 N.E.2d 814; Illinois Consolidated Telephone Co. v. Illinois Commerce Com. (1983), 95 Ill.2d 142, 152, 69 Ill.Dec. 78, 447 N.E.2d 295.) Under the Board's view any contamination which prevents the State's water resources from being usable would constitute pollution, thus allowing the Board to protect those resources from unnecessary diminishment. CIPS' interpretation, on the other hand, would not be considered polluted so long as use of the water ceased subsequent to contamination. We find the Board's interpretation preferable to CIPS'

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<sup>7</sup> The Board notes that drinking water consumption from the Middle Fork has been actively discussed relating to the Kickapoo State Park. This could include human consumption and livestock watering for a horse riding livery. (Tr. 287).

interpretation, especially considering the deference we must accord to the Board.

Central Illinois Public Service Co. v. PCB (1987), 116 Ill.2d 397, 409, 507 N.E.2d 819, 824.

WHETHER THE PETITIONER HAS PRESENTED ADEQUATE PROOF TO JUSTIFY A CONCLUSION THAT 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

The Board has previously discussed, in its discussion of the effect of the requested standard on the "receiving body of water", the problems with the "evidence" and studies presented by Illinois Power.

To grant the adjusted standard, the Act also requires the Board to conclude that the adjusted standard will not result in environmental or health effects substantially or significantly more adverse than the effects considered by the Board in adopting the rule of general applicability. Since IP proffered no evidence concerning the long term environmental and health effects from a boron standard of 9.2 mg/L, a sulfate standard of 800 mg/l and TDS standard of 1,400 mg/l, the Board is left to conclude as stated by the Committee's witnesses, that the effects could be substantially and significantly more adverse than present standards. The effects would be more adverse because periphyton densities appear to be affected downstream of Illinois Power's discharge at water quality levels only slightly above the 1.0 mg/l boron standard. They would be more adverse because the requested water quality levels will render the water unfit or not suitable for drinking water and not suitable for crop irrigation. IP's argument, taken to its logical conclusion is that since general use water quality standards were in large part designed to protect drinking water and agricultural uses and because Vermilion River isn't used for either, those standards can essentially be ignored. This would preclude future uses.

WHETHER ILLINOIS POWER HAS PRESENTED ADEQUATE PROOF TO JUSTIFY THAT ITS REQUESTED ADJUSTED STANDARD IS CONSISTENT WITH APPLICABLE FEDERAL LAW

Section 28.1(c)(4) of the Act requires the petitioner to show by adequate proof that the adjusted standard is consistent with any applicable federal law. IP contends that the adjusted standard is consistent with federal law. IP argues that the Clean Water Act grants States the authority to revise water quality standards and that the Board's adjusted standard procedure is a means of exercising that authority. IP also maintains that the adjusted standard will not negatively impact aesthetics or fish and wildlife propagation, or degrade water



quality of the Middle Fork and is therefore consistent with the Wild and Scenic Rivers Act.

One of the fundamental issues affecting this proceeding is that of the federal and state anti-degradation requirements. Illinois Power argues that degradation will not occur because the actual measured quality of water will not be degraded. Illinois Power believes that the actual water quality in the Middle Fork has not changed since 1972 and therefore no degradation will result from continued discharge of their effluent. (IP Reply Br. pp. 14-16.) The Committee argues that changes in the water quality standards invoke the anti-degradation provisions, regardless of any changes in the actual water quality. Further, they argue that Illinois Power has not demonstrated a lack of change in actual measured water quality since 1972. Finally, the Committee argues that Illinois Power has not met the federal anti-degradation legal burden to allow the change in water quality standards.

The Board believes that the federal water quality and anti-degradation regulations raised by the Committee apply to the legally adopted water quality standards set by this Board and under review in this proceeding. The federal Clean Water Act, 33 U.S.C. §§ 1251 - 1387 (1992), establishes a procedure for setting water quality standards. (Section 303, 33 U.S.C. 1313 (1992).) To implement those provisions USEPA has promulgated regulations governing the adoption of state water quality standards, "Establishment of Water Quality Standards", at 40 C.F.R. 131.10 (1992). The process involves establishing specified uses for a body of water, and then choosing numeric criteria for each pollutant that will protect those uses:

#### Subpart B - Establishment of Water Quality Standards

##### §131.10 Designation of uses.

(a) Each State must specify appropriate water uses to be achieved and protected. The classification of the waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation. In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.....

##### §131.11 Criteria

(a) Inclusion of pollutants: (1) States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to

protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.....

In its water quality setting process the Board selected the "general use" designation for this highly sensitive area. (35 Ill. Adm. Code 303.201 (1992).) The purpose of the General Use Standards is stated at Section 302.202:

The general use standards will protect the State's water for aquatic life, wildlife, agricultural use, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use.

In addition, pursuant to 35 Ill. Adm. Code 302.301, "...Waters of the State are generally designated for public and food processing use." Therefore, wildlife, agricultural use, and drinking water are clearly designated uses of the Middle Fork. The Board assigned "General Use" numeric criteria for boron, TDS and sulfates that would protect such uses in the waterway. 35 Ill. Adm. Code 303.202 (1992). It is those general use water quality standards for boron, TDS and sulfate which Illinois Power seeks to change.

Illinois Power admits that the water quality standards they are requesting would not protect the use of crop irrigation and drinking water withdrawal. Both of those uses are allowable under the present Illinois regulatory scheme, and would be precluded uses under the scheme requested by Illinois Power. The USEPA regulations specifically address the process of setting water quality standards at 40 CFR §131.10(g) (1992):

(g) States may remove a designated use which is not an existing use, as defined in §131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

(4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

The Board concludes that these federal regulations affect Illinois' ability to modify its water quality standards. Further, the Board concludes that requested changes sought by Illinois Power would result in a downgrading of water quality criteria such as to not protect the current designated uses of crop irrigation and drinking water withdrawal. Here, the only reason offered to support downgrading of the water quality standards is the presence of effluent from the Illinois Power ash ponds. There are clearly technical methods that would allow Illinois Power to achieve effluent quality such that it did not violate existing water quality standards. Illinois Power has not demonstrated that the provisions of 40 C.F.R. 131.10-131.12 (1992) have been met. Illinois Power has not claimed nor demonstrated widespread economic and social impact. The Board finds additional support for this position from the federal anti-degradation regulations at 40 C.F.R. 131.12(a)(3)(1992):

(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Here, there is no question that the waters under consideration constitute waters of exceptional recreational or ecological significance, and water quality should be maintained and protected. The Middle Fork is a stream of high quality and

is an upstream of Kickapoo State Park. It deserves special consideration because of its status as a state and federal protected waterway and because of its unique biological habitat. The continued discharge of boron, sulfate and TDS at existing levels threatens to lower the quality of the water from that contemplated in the existing water quality standards. At the requested levels, such waters could be severely threatened.

#### CONCLUSION

For all of the above reasons, the Board finds that the requested adjusted standard, as presented in this proceeding, is not consistent with the factors set forth in Section 27(a) of the Act and Illinois Power has not presented adequate proof of justification for the requested standard as set forth in Section 28.1(c) of the Act.

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

#### ORDER

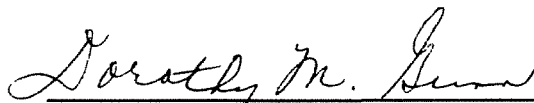
The Board hereby denies Illinois Power's request for an adjusted standard for its Vermilion Power Station from the general use water quality standards for boron, sulfate, and total dissolved solids (TDS) in 35 Ill. Adm. Code 302.208(e). This docket is closed.

IT IS SO ORDERED.

J. Anderson, J.T. Meyer and M. Nardulli concurred.

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 7<sup>th</sup> day of October, 1993, by a vote of 7-0.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board