ILLINOIS POLLUTION CONTROL BOARD
October 12, 1984

ILLINOIS POWER COMPANY (CLINTON POWER STATION),	)	
Petitioner,	)	
v.	)	PCB 84-135
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

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

On August 29, 1984, the Illinois Power Company ("IPC") filed a request for variance from certain Board regulations that affect water discharges from their Clinton Power Station to Clinton Lake. IPC requests variance from effluent limitations for total suspended solids (TSS) and total iron ("Iron"), in order to conduct pre-operational flushing of process piping systems at the nuclear-fueled electric generating station prior to loading the station with nuclear fuel. Specifically, IPC requests variance from the TSS and iron effluent limitations of 35 Ill. Adm. Code 304.124, and from the requirements of 35 Ill. Adm. Code 309.102 which prohibits the discharge of contaminants except in compliance with the Environmental Protection Act, Board regulations and conditions of an NPDES permit. IPC requests variance until the date when nuclear fuel is loaded at the station or until September 1, 1989, whichever is sooner. At the time of filing this petition, IPC also filed a motion for prompt consideration stating that delays in pre-operational requirements could force delays in fuel loading; each day of delay will cost in excess of one million dollars (Pet., ¶3).

On October 1, 1984, the Illinois Environmental Protection Agency ("Agency") filed a recommendation that variance be granted, with certain conditions, from 304.124 (TSS and iron) until December 31, 1986, or until nuclear fuel loading whichever is sooner. On October 5, 1984, IPC filed a response to Agency recommendation that accepted all conditions (including the 1986 date), but pointed out that the Agency had not taken a position on IPC's request from 309.102. IPC believes that procedurally a variance from that Section is also required even though the substance of the request is the TSS and iron limitations of 304.124. IPC's October 5, 1984, filing also renewed the motion for prompt consideration. No objections were received by the Board and no hearing was held. In view of the Board's disposition of this matter within four days of the last filing, the motion for prompt consideration is moot.

IPC is a public utility, headquartered in Decatur, Illinois. It has a service territory of approximately 15,000 square miles and employs approximately 4,000 people. IPC provides electric service to approximately 530,000 customers and gas service to approximately 382,000 customers. The station, which presently is under construction, is a nuclear-fueled electrical generating station designed to generate 933 net megawatts of electricity. It is located near Clinton, Illinois, on Clinton Lake. Various effluents are discharged from the station to Clinton Lake pursuant to the conditions of a NPDES permit. The station is scheduled to begin fuel loading in January, 1986, and to begin commercial operation in Novermber, 1986, at which time it will employ approximately 900 people. To meet these scheduled dates for commencement of fuel loading and of commercial operation, approximately 6,600 personnel currently are employed on site, and three shifts a day are working on the construction (Pet., ¶ 1-3).

One important aspect of the construction being done at the station is the flushing of certain process piping systems upon their completion in order to test their integrity for operational use. Several of these flushes have been conducted in the past and were of such nature that the waters used in flushing could be routed through the station's sedimentation ponds for treatment, prior to discharge to waters of the State. These flushes were covered by the terms of a new-expired NPDES Permit No. IL0036919, which was issued on October 21, 1977, by the United States Environmental Protection Agency to IPC. Prior to the expiration of this permit, on July 31, 1980, IPC filed with IEPA an application for renewal, with the consequence, because of the provisions of Section 12(f) of the Environmental Protection Act, Ill. Rev. Stat. 1983, ch. 111½, § 1012(f), and 40 C.F.R. § 122.6(d) (1983), that the permit was continued in effect and will be in effect until such time as final administrative action is taken on the permit application. Certain other pre-operational pipe flushes, which have been identified as critical path milestones in the start-up schedule for the station, cannot be handled in the same manner as those prior flushes (Pet., ¶ 4-6).

To deal with the flushes, IPC requested a provisional variance from the Agency. The Agency recommended to the Board that a provisional variance be granted with conditions and on June 14, 1984, the Board granted the provisional variance in PCB 84-75. One additional purpose of this provisional variance flushing was to acquire data on the quality of effluent discharged into Clinton Lake to determine if Board regulations for TSS and iron would be exceeded. The outside ring header subsystem of the fire protection system was flushed on June 19, 1984, and June 20, 1984. This subsystem consists of a 14-inch primary ring header, a 12-inch secondary ring header, and numerous smaller lines that service the many buildings at the station. These ring headers were flushed by pumping untreated water from Clinton Lake through the lines. Grab samples of the flushwater discharges were gathered during both days of this flushing. These were manually composited, and composite pollutant concentrations were determined. The

results show that on the first day of flushing, June 19, 1984, the flush waters exceeded the Board's effluent limitations of 15 mg/l for TSS and 2.0 mg/l for total iron. The composite of all grab samples indicated a level of 140 mg/l of TSS and 32 mg/l of total iron. However, on the second day of flushing, June 20, 1984, the flush waters were well within effluent limitations: the composite of all grab samples indicated a level of 9.2 mg/l of TSS and 0.98 mg/l of total iron (Pet., ¶ 10, 11).

Flushing of the Division III subsystem of the safe shutdown service water system began on July 19, 1984, and was to have been continued on July 20 and July 24-26, 1984. This subsystem consists of piping associated with diesel generator IC and switch gear heat removal condensing piping. The flush could not be completed, however, because on July 24, 1984, the pump being used failed, necessitating the suspension of the flush. Flushing of the subsystem resumed on August 1 and was continued through August 2, 1984. However, flushing could not be completed in accordance with the operational protocol. Data was collected concerning the quality of the flush waters that were discharged on July 19-20 and August 1-2, 1984. The data indicated that on July 19, 1984, the first day of flushing, the Board's effluent limitations for TSS and iron were exceeded as 45 mg/l of TSS and 5.2 mg/l of iron were discharged. However, on the remaining three days of the flush, effluent limitations were met with one exception: on July 20, 1984, flush waters with concentrations of 24 mg/l TSS and 1.0 mg/l of total iron were discharged; on August 1, 1984, flush waters with concentrations of 12 mg/l TSS and 0.66 mg/l of total iron were discharged; and on August 2, 1984, flush waters with concentrations of 13 mg/l TSS and 0.67 mg/l of total iron were discharged. For the flushing operations conducted to date there has been substantial variation in effluent quality, making accurate prediction of future flushing concentrations impossible.

Despite the flushing which has already occurred, IPC will need to conduct more flushing to demonstrate the integrity of the piping systems to the Nuclear Regulatory Commission before fuel-loading will be allowed. Since these flushings will occur before fuel-loading, no question of accidental radiological contamination is before the Board. The additional subsystems which IPC requests to flush are the following:

The segment of the fire protection system which is contained in the diesel generator building;

The segment of the fire protection system which is contained in the containment and auxiliary control building;

The segment of the fire protection system which is contained in the control building;

Divisions I and II of the same shutdown service water system;

The station's chilled water system, which is contained throughout the power block; and

The component cooling water system, which is contained in the control building.

In each case, the volume of flush water is quite large, typically one-half million to fifty million gallons. These volumes are too large to be conveyed through the existing floor drain system to IPC's sedimentation ponds for treatment before discharge. Since many of the flush discharge points are far from the ponds, thousands of feet of hose would have to be laid, blocking roadways and presenting a danger of rupture. Moreover, the total volume of flows would exceed the treatment capacity of the present system. The cost and delays for creating temporary addtional capacity would be substantial (Pet., ¶ 39-41).

IPC and the Agency anticipate there will be minimal, if any, adverse environmental impact resulting from the proposed flushing operations. First, the flushing water will be withdrawn from Clinton Lake which has historically had a high level of TSS: 1.0 mg/l to 68 mg/l from 1978 through 1983. Thus, the amount of TSS in the effluent from prior testing does not reflect the amount of TSS added to Clinton Lake, although exact calculation of the amount added would be impossible. Also, the TSS added would be predominantly inorganic in nature (rust). Second, any elevated levels of iron would be predominantly in the form of ferric oxide or rust which is relatively insoluble in water and would be expected to settle to the bottom of Clinton Lake. The small amount of ferrous oxide, which is soluble in water, should be rapidly oxidized to ferric oxide in the alkaline aerobic condition of Clinton Lake and would again settle to the bottom. Third, the elevated levels of TSS and iron from prior flushing occurred primarily during the initial stages or "first flush". Since IPC has agreed to convey the maximum feasible amount of first flush to the existing treatment system through all existing (and reasonable available temporary) piping systems, the total amount of pollutants added, as well as any shock loading, should be greatly reduced. Last, the discharges will not be a continuous event, but a series of discrete events which appear to result in less than seventy million gallons in total (Pet., ¶ 22-25, Exhibit A, Rec., ¶ 22).

The Board finds that the station cannot become operational until the flushing is completed, the existing treatment system cannot handle the total flushing volumes, and that construction of additional sufficient temporary treatment capacity would impose an arbitrary or unreasonable hardship when balanced

against the minimal adverse environmental impact which might occur. The Board will impose, as conditions of this variance, the termination date, first flush treatment requirements and monitoring requirements to which IPC and the Agency have agreed.

The Board has reviewed IPC's request for variance from Section 309.102. That section prohibits discharges of contaminants or pollutants to the waters of the state except in compliance with the Act, Board regulations and provisions and conditions of NPDES permits. In a normal variance situation where the permittee seeks to discharge at levels above those contained in the applicable NPDES permit, no variance from this section would be required; the Agency would be expected to modify the NPDES permit conditions in accordance with the Board Order. Therefore, to the extent that IPC requests relief from this section for currently permitted outfalls that relief is denied as unnecessary. However, to the extent IPC requests to discharge from outfalls that do not presently have an NPDES permit, relief from Section 309.102 would be required.

IPC and the Agency have both included copies of the draft NPDES permit which may be issued to IPC in the future. That draft permit specifically lists and imposes conditions on all outfalls of concern in this proceeding. However, neither party has included a copy of the currently applicable NPDES permit so that the Board can determine if this proceeding concerns new outfalls. Consequently, the Board will grant a variance from 309.102 only to the extent of currently unpermitted discharges.

This Opinion constitutes the Board's findings of fact and conclusions of law on this matter.

ORDER

Illinois Power Company, Clinton Power Station, is hereby granted a variance from 35 Ill. Adm. Code 304.124 (Total Suspended Solids and Total Iron only) and 309.102, subject to the following conditions:

1. The variance from Section 304.124, Total Suspended Solids and Total Iron only, shall apply only to the following flushing operations and outfalls:

	Flush Event	Discharge Point
A.	Portions of the fire protection system located in (i) diesel generator building, (ii) containment and auxiliary fuel buildings, and (iii) control building	(1) to intake structure from inside headers (2) to storm drains from hose stations

B.	Divisions I and II of safe shut down service water system	007
C.	Station chilled water system	Intake structure
D.	Component cooling water system	Intake structure
E.	Integrated flush of Station systems	002(b)
F.	Reactor core isolation cooling system	Storm drains
G.	Division III of safe shutdown service water system	007
H.	Operation of safe shutdown service water system	007

2. The variance from Section 309.102 shall apply only to those discharge points listed above that presently have no NPDES permit.

3. This variance shall expire when nuclear fuel loading begins at the station or December 31, 1986, whichever is earlier.

4. IPC shall treat the maximum feasible portion of "first flush" flows for the fire protection system, the chilled water system and the component cooling water system at the station utilizing existing treatment facilities, as well as existing and reasonably available temporary pumps and piping.

5. IPC shall monitor the discharges covered by this variance by taking 24-hour composite samples each day that discharge occurs. Those samples shall be analyzed for pH, oil and grease, total iron and total suspended solids.

6. IPC shall monitor the lake water used for these flushes prior to its use by 24-hour composite samples. In such monitoring, the waters of Clinton Lake shall be analyzed for pH, oil and grease, total iron and total suspended solids.

7. The results of the above-referenced analyses, along with flow data and dates and times of each discharge, shall be sent to Roger Cruse within ten (10) days after the last day of each flushing event. At the same time, progress towards completing remaining flushes shall be reported. The appropriate documents shall be sent to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
2200 Churchill Road
Springfield, Illinois 62706
Attention: Roger Cruse

8. Within forty-five (45) days of today's Board Order, IPC shall execute and forward to the Illinois Environmental Protection Agency, Division of Water Pollution Control, Compliance Assurance Section, 2200 Churchill Road, Springfield, Illinois 62706 (Attention: Carol Morrison), a Certificate of Acceptance and Agreement to be bound by all terms and conditions of this variance. This fortyfive (45) day period shall be held in abeyance for any period this matter is being appealed. The form of the certificate shall be as follows:

CERTIFICATE

I, (We), _____, having read the order of the Illinois Pollution Control Board in PCB 84-135, dated October 12, 1984, understand and accept said order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

_____
Petitioner

_____
Title

_____
Date

By: _____
Authorized Agency

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 12th day of October, 1984 by a vote of 6-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board