

ILLINOIS POLLUTION CONTROL BOARD
July 31, 1975

ILLINOIS POWER COMPANY,)
Petitioner,)
)
v.) PCB 75-31
)
ENVIRONMENTAL PROTECTION AGENCY,)
Respondent.)

Mr. Sheldon A. Zabel, Attorney, appeared for the Petitioner;
Mr. Henry J. Handzel, Jr., appeared for the Respondent.

OPINION AND ORDER OF THE BOARD (by Mr. Zeitlin):

On October 26, 1970, Petitioner, Illinois Power Company (Illinois Power) announced its intention to build a nuclear power station near Clinton, Illinois (Clinton Station). The Clinton Station is to consist of two 991 megawatt units, both of which will be nuclear fueled.

To dispose of waste heat generated at the Clinton Station, Illinois Power proposes to construct an artificial cooling lake, to be created by damming Salt Creek approximately 1,200 feet downstream of its confluence with its North Fork. The resultant lake will be a U-shaped impoundment, extending approximately 14 miles upstream along Salt Creek, and 8 miles up its North Fork. The lake will have an average surface area of 4895 acres, and a mean depth of 15.6 feet. The lake's capacity will be approximately 24 million gallons.

Operation of the Clinton Station will result in a discharge to the lake (Clinton Lake) of approximately 1.7 billion gallons per day (2534 cfs). That water, used for condenser cooling purposes, will be withdrawn from the North Fork arm of Clinton Lake, and thence discharged into the Salt Creek arm via a 3.1 mile discharge flume. After passing through spray modules in the discharge system, the effluent water temperature will nonetheless be in violation of present Board thermal standards. PCB Regs, Ch.3, Rules 203(i), 402.

PLEADINGS

Illinois Power initially submitted the instant Variance Petition, with respect to its proposed Clinton Lake, on January 23, 1975. Illinois Power requested Variances from Rule 203(i) (water quality temperature standards), Rule 402 (effluent standard prohibiting discharges causing water quality standards violation), and Rule 970 (barring Agency effluent discharge approval for Federal permits in the presence of Illinois Statutory or Regulatory violations).

Illinois Power, in its original Petition, claimed that the request for Variance is necessary for several reasons. First, Illinois Power alleged that a Variance is necessary to allow progress on its Clinton Station to continue while various legal uncertainties regarding the status of cooling lakes in general are resolved. Specifically, Illinois Power claimed that the requested Variances would:

- a. Permit the Illinois Environmental Protection Agency (IEPA) to issue "at least a partial certification" pursuant to Section 401 of the Federal Water Pollution Control Act Amendment of 1972 (FWPCA) and U. S. Environmental Protection Agency (USEPA) Regulations, 40 CFR §122.8. Such a certification would eliminate the necessity of judicial determination of Rule 970's validity.
- b. IEPA could issue construction permits for Clinton Station, and Clinton Lake, and a full certification under Section 401 of the FWPCA.
- c. Issuance of the requested Variance would eliminate the necessity of judicial determination of the question of Federal pre-emption of state thermal effluent and water quality standards by virtue of 316(a) of the FWPCA; and a number of other legal questions possibly related to the question of Federal pre-emption as a result of permit issuance by the Atomic Safety and Licensing Board.

Illinois Power also alleged that issuance of the requested Variance would eliminate unnecessary delay in the construction of Clinton Station, by perhaps as much as one year, resulting in considerable financial savings for the company. Additional

hardships alleged to be likely results of any further delay in the construction of Clinton Station were possible "blackouts" or "brownouts" within the Illinois Power service area. Public hardships were alleged insofar as delay in construction of the Clinton Station would result in considerable economic loss for the Clinton area; construction wages amounting to \$250 million would be postponed or delayed. Petitioner also noted that unemployment is presently high in the Clinton area.

Thereafter, on February 11, 1975, IEPA submitted to the Board a Motion to Dismiss this case, which Motion was subsequently withdrawn on February 18, 1975, after Illinois Power submitted an Amendment to its initial Variance Petition (Amended Petition).

The Amended Petition, received by the Board on February 18, 1975, incorporates into the record several other reports and documents. These include Illinois Power's Environmental Report to the Atomic Energy Commission (NRC), a final environmental statement prepared by the NRC, an NPDES permit application to the USEPA for Clinton Lake, Illinois Power's application to USEPA for an alternate thermal standard under Section 316(a) of the FWPCA, and Illinois Power's construction permit application to IEPA, with an application for certification under the FWPCA under Section 401.

The Amended Petition also included various statements alleged to constitute compliance plans for Clinton Lake on the part of Illinois Power. Illinois Power proposed three methods of compliance:

- a. A pending rule change before the Board. (In the matter of: Cooling Lakes, R75-2.)
- b. A Section 316(a) demonstration to the Pollution Control Board under the NPDES system, (Rule 410(c)), once Illinois' administration of that program is approved by USEPA.
- c. A long term, permanent Variance, for which Illinois Power cites as authority the case of Commonwealth Edison, v. P.C.B., Ill. App. 3d ____ (1st Dist., 1974, No. 57487).

Illinois Power also mentioned as possible methods of compliance a judicial reversal of the Board's prior Opinion in the "Lake Coffeen" case. Central Illinois Public Service Co. v. EPA, PCB 73-384, 11 PCB 677 (1974); see also, Citizens For A Better Environment v. Commonwealth Edison, PCB 73-248,

and Commonwealth Edison v. EPA, PCB 73-248 (Consolidated), 13 PCB 69 (1974). (PCB 73-384 has been appealed to the Illinois Appellate Court, 5th District, No. 74-182). Petitioner also notes that it has a pending §316(a) Demonstration before the USEPA, pursuant to the FWPCA.

Illinois Power also introduced with its Amended Petition an affidavit purporting to show approximate costs associated with either alternate cooling systems for Clinton Lake or with a delay in construction of the Clinton Station pending approval of the current cooling system. Illinois Power claimed that approximately \$50 million in costs have been added by a year's delay already incurred due to administrative review of its proposed plant and lake, and that an additional year of delay would add another \$50 million to the total cost of the plant. Insofar as cooling towers for the Clinton Station were estimated to cost between \$50-and-\$75 million, Illinois Power estimates that with the delay for construction of those towers, and pending determination that such towers would in fact be necessary, the total additional cost would be between \$100 million and \$125 million. Further, Illinois Power alleges that the use of cooling towers at Clinton Lake would still require use of the proposed lake to provide makeup water used in conjunction with such towers.

IEPA filed its Recommendation on March 20, 1975, which set out considerable factual data regarding the proposed Clinton Lake. The Recommendation compared predicted conditions for Clinton Lake with existing conditions at presently operating Illinois cooling reservoirs, of both the dammed and side channel (or "perched") variety.

The Agency recommended that the Variance be granted, for a period of from 1 to 5 years, subject to several conditions. With respect to the Variance request from Rule 970, the Agency stated that a Variance grant should be conditioned on:

- a. Adequate proof that it would not be technically feasible or economically reasonable to achieve cooling sufficient to meet present Board standards, or some other standard lower than the 96° F. requested by Illinois Power.

- b. Proof that upstream users of the water courses to be impounded have been informed and understand that construction of the impoundment would result in additional effluent requirements on them.
- c. Proof as to the length of time for which a Variance is necessary.

With respect to the Variances requested from Rules 203 and 402, the Agency also recommended that the Variance be granted, but subject to the following conditions:

- a. Proofs as required with respect to the Variance from Rule 970.
- b. Proof that Variance would be necessary for Illinois Power to proceed with its Clinton project before "the NRC and USEPA while review processes are pursued".
- c. Proof that an Agency construction permit would be required during the next 1-year period.

The Agency also recommended the following general conditions:

- a. A submission by Illinois Power of an acceptable lake management plan, preserving the lake's recreational and fishery values.
- b. Submission by Illinois Power of a commitment to keep the lake readily available for public access throughout the life of the lake.
- c. Submission of an acceptable program for start up and shut down procedures to minimize adverse effects on aquatic life.
- d. That the Variance terminate on a denial of the Section 316(a) request pending before USEPA, or upon a decision in the pending cooling lake regulatory proceedings (R75-2) unfavorable to Illinois Power.

IEPA then filed its Amended Recommendation before the Board on June 12, 1975. Based on the fact that Illinois Power by that time had agreed to install a supplemental

cooling system, IEPA again recommended the Variance be granted. The Agency moved, in its Amended Recommendation, that the Variance requested with regard to Rule 203(i) and 402 be granted without hearing, and further moved that the requested Variance from Rule 970 be dismissed as moot. Additional Motions to Decide Without Hearing were filed June 20, 1975 (IEPA) and June 24, 1975 (Illinois Power).

The Agency also adopted further conditions relating to operation of the proposed supplemental cooling system to be constructed along with Clinton Station and Lake. Certain of the initial conditions proposed by the IEPA were dropped or modified, and a further additional condition (that the Variance be conditioned on compliance with a final 316(a) Determination) was added. Further, IEPA recommended that, should conditions in Clinton Lake, after it becomes operational, differ significantly from those predicted in the Section 316(a) demonstration submitted by Illinois Power to USEPA, Illinois Power be required to take whatever corrective measures are necessary, to include the possible addition of further supplemental cooling facilities.

The Board subsequently denied all Motions for Decision Without Hearing (Interim Order, June 26, 1975), and a hearing was held in Clinton on July 7, 1975. The only relevant objections raised at that hearing related to the possible effects which an artificial impoundment, containing waters with increased temperatures, might have on surrounding agricultural concerns. Two witnesses expressed fears that increased evaporation resulting from the thermal component of Clinton Station's effluent may have an adverse effect on crop growth, through a variety of mechanisms. It was feared that increased frost damage might result, and that additional local humidity would affect plant growth rate, and the manner in which fertilizers must be added to farm fields. Additional testimony was introduced with regard to the possibility that increased atmospheric moisture may have an adverse effect on grain drying and storage; one witness stated that the additional humidity would delay the drying of grain in the fields, and would cause mold growths on stored grain (R. 26,27). (An additional objection, based on possible interference with drainage from surrounding farms is not relevant to our determination here, and may not lie within the Board's jurisdiction.) Illinois Power also agreed, in its closing statement, to abide by the conditions contained in the IEPA's Amended Recommendation.

At the conclusion of the pleadings, and the hearings, the Board was presented with a massive record on which to base its determination.

SUPPLEMENTAL COOLING SYSTEMS

Steam electric generating plants utilize water for condenser cooling. The condenser is in effect a heat exchange mechanism; in it, a separate quantity of water, which is that actually heated and used to drive steam turbines for electric generation, is cooled for reuse. The water employed for condenser cooling is not itself used to drive the electrical generating mechanism.

In the past, it has been commonplace for steam electric generating plants to utilize natural waters, withdrawn directly from a natural water body such as a river or lake for such cooling; that water is then directly discharged back into the body of water from which it is drawn. That process is known as "once through cooling".

Where once through cooling is not practical, either because no sufficiently large natural water body is available, or because such a method may result in violation of environmental or other standards, other cooling systems must be employed. These have in the past included the construction of artificial impoundments for cooling water, the use of cooling towers (of several varieties), or the use of spray canals. In all of these methods, the basic mechanism for cooling involves both evaporation and direct radiation of heat to the atmosphere. Depending on the supplemental cooling system to be used, and on myriad other factors, the cost and efficiency of condenser water cooling varies greatly.

The Pollution Control Board (Board) has previously decided that where an artificial cooling impoundment is constructed by damming an existing protected water of the state, the resulting "artificial cooling lake" will be, and remains, a protected water of the state; it is thus subject to existing thermal standards. Central Illinois Public Service Co. v. E.P.A., supra, and Citizens For A Better Environment v. Commonwealth Edison, supra. (This matter is actually more complex than can be discussed here, and is the subject of pending Board regulations. R75-2, supra.) For a more complete description of the problem, see the Board's earlier case, and record in the pending regulatory matter. Illinois Power has conceded that the proposed lake would fall within the protected waters classification.)

Protected waters of the state are subject to the water quality temperature standards of Rule 203(i), which provides in relevant part:

203(i) Temperature (STORET numbers F°(00011 and (C°) 00010):

- (1) There shall be no abnormal temperature changes that may adversely effect aquatic life unless caused by natural conditions.
- (2) The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.
- (3) The maximum temperature rise above natural temperatures shall not exceed 5°F.
- (4) In addition, the water temperature at representative locations in the main river shall not exceed the maximum limits in the following table during more than one percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the following table by more than 3°F.

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
60	60	60	90	90	90	90	90	90	90	90	60

Main river temperatures are temperatures of those portions of the river essentially similar to and following the same thermal regime as the temperatures of the main flow of the river.

- (5) The owner or operator of a source of heated effluent which discharges 0.5 billion British thermal units per hour or more shall demonstrate in a hearing before this Board not less than 5 nor more than 6 years after the effective date of these regulations or, in the case of new sources, after the commencement of operation, that discharges from that source have not caused and cannot be reasonably expected to cause significant ecological damage to the receiving waters. If such proof is not made to the satisfaction of the Board appropriate corrective measures shall be ordered to be taken within a reasonable time as determined by the Board.

- (6) Permits for heated effluent discharges, whether issued by the Board or the Environmental Protection Agency, shall be subject to revision in the event that reasonable future development creates a need for reallocation of the assimilative capacity of the receiving stream as defined in the regulation above.

. . . .

In addition, Rule 402 provides an effluent standard which prohibits any effluent from causing a violation of the applicable water quality standard. It should be noted that Rule 201, Mixing Zones, provides discharger with a mixing zone for its effluent. That Rule would provide, as a mixing zone, an area contained within a circle having a radius of 600 feet; subject to certain other limitations, the applicable temperature standards need only be met at the edge of a mixing zone. See, Commonwealth Edison v. EPA, PCB 73-359, 10 PCB 659, 662 (1974); Ohio Wabash Thermal Standards, 71-12, 2 PCB 563 (1971).

As originally designed, Clinton Station would have utilized once through cooling; its proposed discharge under that system would have reached a maximum temperature of 112° F. (Rec., P.6). In 1974, the Atomic Energy Commission (AEC) issued a final environmental statement for the proposed Clinton Station. That statement imposed a maximum temperature discharge limitation of 96° F., or such other temperature as may be appropriate under the FWPCA. To achieve compliance with that limitation, Illinois Power proposed a supplemental cooling system to meet such a 96° F. limitation. That 96° limitation was the basis of a construction permit application and an NPDES permit application submitted by Illinois Power with respect to Clinton Lake. It was also the basis for an application to the USEPA for an alternative thermal limitation under Section 316(a) of the FWPCA (as amended February 24, 1975).

The supplemental cooling system chosen by Illinois Power for its Clinton Station would involve the use of 232 spray modules along the 3.1 mile discharge canal running from the Station to Clinton Lake. Illinois Power claims that, with the utilization of this system, current Board regulations will usually be met at Clinton Lake. By operating the spray modules from June 1 (or such earlier time as the condenser discharge temperature reaches 92° F.) until around September 19 of each year, the discharge temperature will

reach a maximum of 92° F. in normal years, and on one or two occasions in such years. Only during extremely dry years should the discharge temperature approach the 96° limit proposed by Illinois Power in this procedure. (In the eventuality that conditions might indicate that 96° F. will be exceeded, plant operations are to be altered to meet that limit.) (Rec. Ex. 1 to Ex. B).

FEDERAL CONSIDERATIONS

Section 316(a) of the FWPCA grants the Administrator of the USEPA the power to determine an alternate thermal standard for an individual source, where it has been determined that existing standards are more stringent than necessary to protect an indigenous aquatic biota. (Again, this matter is somewhat complex, and the reader is referred to the appropriate federal statutory and regulatory provision describing the requirements of Section 316(a).) Illinois Power, as noted above, has applied to the USEPA for such an alternate thermal standard.

In a letter from Francis T. Mayo, Regional Administrator of the USEPA, dated May 9, 1975, that Agency tentatively approved such an alternate thermal standard for the proposed Clinton Lake. That tentative approval followed the submission, by Illinois Power, of voluminous data and predictions relevant to the proposed lake. The original submission to USEPA, October 10, 1974, was supplemented on February 24, 1975, and April 14, 1975. (Amended Rec., Ex. C). The May 9, 1975, tentative approval by USEPA was subject to the following conditions:

1. The proposed supplemental cooling system (spray canal) is to be operated during the summer under the method described above.
2. The effluent to the lake will never exceed 96° F.
3. Illinois Power is to conduct thermal research to determine the effects of thermal discharges on cooling lakes. That data, and data on the proposed Clinton Lake, are to be evaluated, and reports to be made to USEPA.
4. If the research, data, etc., indicate that Clinton Lake will be significantly different than the predictions in the 316(a) demonstration show, or if the cooling water use, recreational aspects, or protection and propagation of indigenous aquatic life cannot be assured, Illinois Power must agree to take whatever measures are necessary in correction, to include backfitting of additional cooling facilities.

5. Illinois Power is to develop and maintain plans for nuisance algae and aquatic macrophyte control on Clinton Lake.
6. Illinois Power is to develop a detailed fishery management plan for Clinton Lake.

In a letter dated May 16, 1975, (Rec. Ex. D), Illinois Power agreed to the above conditions.

ISSUES

In determining whether or not a Variance is warranted in this issue, the Board must examine the following issues:

1. Is a Variance in fact needed by Illinois Power for its proposed Clinton Lake?
2. Is such a Variance in fact needed at the present time, if at all?
3. Have the elements normally necessary for the grant of the hardship been shown?
 - A. Has the requisite hardship been demonstrated?
 - B. Is the necessary compliance plan present?
 - C. What will be the resultant damage, if any, to the environment?
4. How long a Variance is warranted on the present record?

It would appear that there is some question as to whether this variance is in fact needed by Illinois Power. The Board notes that all of the engineering data leading to the estimate of a 96°F. discharge during unfavorable meteorological conditions are derived from very conservative assumptions and calculations (eg. Amend. Rec., Ex. B, pp. 3,4; Ex. 1 to Ex. B, pp.5,6). This, however, is as it should be. Illinois Power has designed its facility to cool to 96°F. under worst-case conditions, and has committed itself to modification of plant operations should the situation indicate that a 96° limit cannot be achieved. (Amend. Rec. Ex. D, responding to Rec. Ex. C, p.6 para 4). It is asking for a variance from the 90°F. limitation under the Board's rules based on such a worst-case possibility. . . . a possibility which it seems is more likely than not during a drought year with high wet-bulb conditions during the summer. (Amend. Rec. Ex. 1 to Ex. B, supra) There is no need to penalize

Illinois Power for its caution in both conservatively designing its cooling facilities and at the same time seeking a shield from prosecution under the grant of a variance, while constructing the facility.

There would also appear to be some question as to whether the variance would be needed now, in light of the fact that Clinton Station will not be in operation until 1981. In seeking the variance now, rather than at the time of operation, Illinois Power seeks a shield from enforcement which will, in effect, allow construction to commence. Such a request is not unreasonable, since a Variance is in fact needed, and in light of the hardships which delay might cause, a present grant is indicated.

As regards hardship, the most obvious is the financial burden which a denial of the variance would impose on Illinois Power. The original Agency Recommendation, (p.29), shows the costs for "alternate" cooling systems to be used in conjunction with Clinton Station. It was estimated that the following costs would be incurred:

<u>Alternate Cooling System</u>	<u>Cost</u>
(1) wet mechanical draft tower	\$ 48,300,000
(2) wet natural draft tower	71,952,000
(3) spray canal	55,754,000
(4) dry mechanical draft tower	422,144,000

It should be noted that the spray canal costs shown above would be those involved for an "alternate" cooling system, that is, one which would not be used for cooling in conjunction with the proposed artificial cooling lake (Lake Clinton). The supplemental cooling system which has been proposed by Illinois Power will, it is estimated, have a total cost of \$34,524,800, covering all capital, operating and maintenance costs over a 30-year life. (Amended Rec., Ex. 1 to Ex. B, p.2).

In addition, the hardships described above, in the original Petition of Illinois Power, remain valid. Those are costs which would be incurred through delay in the commencement of construction at Clinton. Further, the Board may take notice of the fact that this country has experienced an energy crisis. For that reason, and because the Board may also take notice of current depressed economic conditions, the Board feels that sufficient hardship has been shown to, at least initially, justify the grant of a variance.

Such hardship, however, must also be balanced against the possibilities of environmental harm resulting from the grant of the requested Variance. The bulk of the record in this matter, and in particular the 316(a) demonstration (with its supplements) submitted to USEPA, is largely concerned with predicting the ecological effect that the thermal discharge from Clinton Station may engender. Based on the predictive data submitted for the proposed lake, and the data submitted for comparison indicating present conditions at other cooling water impoundments, the Board feels that the likelihood of environmental damage is minimal.

The data and the pleadings indicated that possible problems may arise in Lake Clinton with respect to algal blooms (Amended Rec., Ex. A, p.2). The 316(a) demonstration for Clinton Lake indicates that the lake will contain sufficient nutrients to support rich planktonic flora. However, a large algal biomass on Lake Clinton will not necessarily be due to the thermal input; large blue-green algal growths occur naturally in nutrient-enriched waters, such as those predicted for Lake Clinton (316(a) demonstration, p.6-58). In addition, Illinois Power has adopted a willingness to employ necessary control measures should algal bloom become a nuisance (Amend. Rec., Ex. 6 to Ex. B).

Additionally, Illinois Power has committed itself to control measures should aquatic macrophytes become a problem (Ex. 4 to Ex. B, Amend. Rec.). It is estimated that the growing season of the macrophytes may be extended as a result of the heated effluent entering Lake Clinton, but it is also estimated that the heated effluent will not increase macrophyte growth beyond those areas of the lake which would normally be inhabited (i.e., shallower areas) (316(a) demonstration, p.6-45,46). Nor is plant shut-down predicted to cause problems with macrophyte growth, as the largest temperature differentials (i.e., thermal shock) are likely to occur in winter, when macrophyte growth and reproduction are minimal (id.).

It is expected (Amend. Rec. Ex. 7 to Ex. B), that passage through the condenser, and the subsequent passage through the spray cooling system, will prove fatal to all zooplankton entrained with the cooling water. It is also felt, however, that the proposed lake will provide sufficient cool habitats, and that rapid replacement of those individuals will take place, so that, over all, there will be little effect on the zooplankton population of Clinton Lake. In fact, due to the thermal effect, zooplankton community density will be higher during the cool months than would ordinarily be the case in central Illinois lakes (316(a) demonstration, Sec. 6.3.5; Ex. 7, to Ex. B, Amend. Rec.).

There has been some dispute as to the assumptions which can be made in predictions on the fishery to be maintained in Clinton Lake. Illinois Power Company, in an Amendment to its 316(a) proposal to USEPA (Ex. 5 to Ex. B, Amend. Rec.), chose 92°F. as a hostile temperature for the eight important fish species predicted for Clinton Lake. In the May 9 letter tentatively approving an alternate thermal standard for Clinton Lake, the USEPA disputed the use of 92°F. in that analysis (Amend. Rec., Ex. C). USEPA felt that an 86° temperature would be more appropriate for analyzing thermal impact. The Board, however, takes note that Illinois Power has committed itself to the maintenance of a viable fishery in the proposed lake, in conjunction with the Illinois Department of Conservation (See, Ex. 3 to Ex. B, Amend. Rec.). Based on studies made at the Baldwin Reservoir, (a "perched" or "side channel" lake, also owned by Illinois Power), the Board feels that it will be quite possible for Illinois Power to maintain an adequate recreational fishery in Clinton Lake (Ecological study of Baldwin Reservoir, Progress Reports, 1 September, 1970, to October, 1974, submitted by Department of Zoology, Southern Illinois University; see also, Aquatic Vegetation Studies of Lake Baldwin, WAPORA, Inc., March 25, 1975). Further, Illinois Power has committed itself to the maintenance of this fishery as a public recreation facility. (This was one of the conditions which Illinois Power has assented to on the record in this matter.)

While it appears from the record that some fish will be damaged in Lake Clinton under extreme conditions, we do not find this fact controlling. In balancing the economic and other hardships described above against the possibilities of environmental harm, we feel that a variance is warranted in this situation.

Another issue remains, however. The Board has in the past required that a compliance plan exist, as a condition to any variance grant; Illinois Power has submitted such compliance plans, which are acceptable to the Board. First, Illinois Power shall, and has, participated in a pending regulatory proceeding before the Board which would, if successful, provide a means by which it could obtain the equivalent of a permanent variance, which is presently unobtainable. In the Matter of Cooling Lakes, R75-2. Should that Regulatory Proposal, or the alternatives suggested by IEPA, be adopted by the Board, Illinois Power could be granted a specific thermal effluent limitation; such a specific limitation would provide permanent relief (subject, of course, to future Board actions, such as those provided for under Ch. 3, Rule 203(i)(5)), by granting a thermal standard exceeding the generally applicable one of Rule 203(i).

Second, the Board would hope that federal approval of the Board's NPDES regulations is imminent. Such approval would cause Rule 410(c) of the Water Pollution Regulations to provide for just such specific, long-term relief as Illinois Power would require. Rule 410(c), by adopting the federal standard under Sec. 316(a) of the FWPCA, provides for the adoption by the Board of an alternate thermal standard such as is requested by Illinois Power.

Both of these alternatives, in light of the other evidence presented in this matter, present adequate compliance plans. In our opinion, these compliance plans justify a grant of the Variance for a two-year period. This will allow time for Illinois Power to pursue these compliance plans, and for the resolution of all remaining issues.

THE VARIANCE

Having determined that a Variance is in fact warranted in the present situation, the terms of that Variance shall be examined. It should be noted first of all, however, that Illinois Power has, in the record in this matter, agreed to the conditions under which the Agency Recommendation of a Variance grant was made, and to the conditions under which a federal 316(a) tentative determination was made (R.40,41; Amend. Rec., Ex. D).

As noted above, the Board will grant a Variance from Rules 203(i) and 402, for a period of two years. The requested Variance from Rule 970 will be dismissed, insofar as the Agency may issue the requested permit and certification based on the grant of Variances from Rules 203(i) and 402.

The essential condition on which this Variance is granted is the operation of the supplemental cooling system described above. We shall, consistent with both the recommendation of the IEPA, and the tentative 316(a) grant of USEPA, require that the spray canal cooling system, as described in Illinois Power's letter of April 14, 1975, to USEPA (Amend. Rec., Ex. B), be operated during summer months so as to prevent harm to the aquatic biota in the proposed lake. The system of operation as described, which provides for a gradual start-up during warm weather months, should protect both the biota and allow for economical operation by Illinois Power.

As agreed to by the parties, and as we have also found to be effective to protect the biota, we will also require that the effluent temperature to the lake not exceed 96°F. at any time. While it is expected that the 96°F. limitation will rarely, if ever, be reached, the Board nonetheless feels such an absolute limitation is required to protect the aquatic environment.

Illinois Power has also agreed to submit an acceptable lake management plan, to preserve the lake's recreational and fisheries value. That agreement plays an important role in the Board's approval of this Variance. That, and Illinois Power's agreement to hold the lake open for public access, indicate a wise, multiple use of scarce water resources.

While the record indicates that start-up and shut-down procedures at the proposed Clinton Station will have little, if any, adverse effect on the aquatic biota, Illinois Power will also be required to develop and submit a program to minimize any adverse effects which may develop. The concept of thermal shock remains a concern to the Board, such that we shall require assurance that no untoward effect will result.

The Board has not conditioned this Variance on compliance with a final Section 316(a) determination by the USEPA at Clinton Lake. First, no such determination now exists, so that the Board may not assume that such a final determination will be entirely consistent with this Opinion and Order. Secondly, it has not been demonstrated that a requirement of such compliance would not constitute "redelegation" of powers granted the Board under the Act. The fact that Illinois Power has agreed to such compliance, in the record in this matter, does not affect our decision on that point.

The Board has also conditioned the grant of this Variance on a commitment by Illinois Power to take whatever corrective actions are necessary should environmental harm develop at the proposed cooling lake. This commitment, to which Illinois Power has also agreed, is a major factor in our grant of this Variance. This condition is consistent with the Board's requirement under Rule 203(i)(5), set out fully above.

We shall also require that Illinois Power submit quarterly progress reports on both the status of construction at the proposed Clinton Station and Lake, and on the status of its compliance with the other conditions of this Order. Certification of acceptance of this Variance, with all conditions, shall also be required.

This Opinion constitutes the findings of fact and conclusions of law of the Board in this matter.

ORDER

- A) Petitioner Illinois Power Company is granted a Variance from the provisions of Rule 203(i) and Rule 402 for a period of two years from the date of this Order, subject to the following conditions:
- (i) That Illinois Power Company agrees to operate, as a minimum, a supplemental cooling system employing 232 spray modules, and otherwise consistent with that described in the accompanying Opinion in this matter, in the following manner:
 - (a) in the late spring when the condenser discharge temperature reaches 92°F or on June 1, whichever comes first, the supplemental cooling system will begin operation with approximately one-fifteenth (1/15) of the capacity being switched on;
 - (b) each day thereafter another one-fifteenth (1/15) of the system will begin operation, until by June 15, at the latest, all modules will be operating;
 - (c) in the late summer, when the condenser discharge temperature reaches 92°F on the declining side of the time/temperature curve, or on September 19, whichever occurs last, the supplemental cooling system will begin to be sequenced off with approximately one-fifteenth (1/15) of the modules being shut down for the first six (6) days;
 - (d) each day thereafter another two-fifteenths (2/15) or less of the modules will be shut off until by September 30, at the earliest, the complete system will be off.
 - (ii) That the effluent temperature to the lake will not exceed 96°F at any time;

- (iii) That Illinois Power Company prior to the filling of the impoundment submits an acceptable lake management plan for approval by the Illinois Environmental Protection Agency and the Illinois Department of Conservation, which plan will preserve the lake's recreational and fisheries value;
- (iv) That Illinois Power Company keeps the lake open to readily available public access throughout the life of the lake;
- (v) That Illinois Power Company develops and submits an acceptable program prior to operation showing startup and shutdown procedures which will minimize the adverse affect of such activities on aquatic life;
- (vi) That if it is determined after operation of the first unit or by ongoing research, that conditions in Clinton Lake will be significantly different than has been described in the 316(a) demonstration, or if it is determined that the cooling water use, recreational aspects of the lake, or that protection and propagation of indigenous aquatic life cannot be assured, Illinois Power Company shall take whatever measures are needed to correct the problem, including backfitting of the proposed or existing plant with additional cooling facilities.
- (vii) That Petitioner Illinois Power Company submit quarterly progress reports to:
 - Illinois Environmental Protection Agency,
Manager, Variance Section; Division of
Water Pollution Control,
2200 Churchill Road
Springfield, Illinois 62706
- (viii) Within 28 days after the date of the Board Order herein the Petitioner shall execute and forward to the Illinois Environmental Protection Agency, Manager, Variance Section at the above address, and to the Pollution Control Board a Certification of Acceptance and agreement to be bound to all terms and conditions of the variance. The form of said certification shall be as follows:

C E R T I F I C A T I O N

I (We), _____ having read and fully understanding the Order of the Illinois Pollution Control Board in PCB 75-31 hereby accept said Order and agree to be bound by all of the terms and conditions thereof.

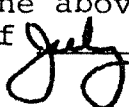
Signed _____

Title _____

Date _____

- B) Petitioner Illinois Power Company's request for a Variance from Rule 970 of Chapter 3 is dismissed.

I, Chistan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 31st day of July, 1975, by a vote of 5-0.


Chistan L. Moffett
Chistan L. Moffett, Clerk
Illinois Pollution Control Board