ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

August 2, 2006

Exelon Generation Company, L.L.C.
Quad Cities Nuclear Power Station

Petitioner,

v.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

IEPA – 07-07
(Provisional Variance-Water)

Re: Provisional Variance From Special Condition 6A and 6B of NPDES Permit IL0005037

Dear Mr. Gideon:

The Agency has completed its technical review of the attached provisional variance extension request submitted by Exelon Generation Company, L.L.C. Quad Cities Nuclear Power Station (Exelon's Quad Cities Station) on August 1, 2006.

Based on the review, the Agency GRANTS the requested variance subject to specific conditions set forth below for a period of 45 days.

Exelon's Quad Cities Station is a nuclear fueled steam electric generating facility located on the Mississippi River at River Mile 506.8 near Cordova, Illinois. It operates its cooling water system in open cycle mode. Cooling water is taken from the Mississippi River, passes through the plant system and is then discharged by diffusers into the Mississippi River. Maximum design flow of this system is 2,253 cfs.

Exelon's Quad Cities Station seeks a variance from Special Condition 6A and 6B of NPDES Permit IL0005037. These conditions establish thermal discharge limits for Exelon's Quad Cities Station. Additionally, 6B allows Exelon's Quad Cities Station excursion hours from these limits. Excursion hours are periods of time in which the temperature at the edge of the mixing zone may be 3°F warmer than the temperature limit in the permit. Exelon's Quad Cities Station may only utilize 1% (87.6) of the hours in a 12 month period ending with any month as excursion hours.

The permit also requires that water temperature in the Mississippi River at the edge of the mixing zone shall at no time exceed by 3°F the maximum limits of 86°F in July and August and 85°F in September. Normally, Exelon's Quad Cities Station can operate within these limits because the ambient temperature in the Mississippi River at the intake points (or above the plant) remain below the non-excursion hour temperature limit.

Ordinarily, the Mississippi River has significant river flows. These significant river flows act to enable Exelon's Quad Cities Station to meet its permit conditions even when ambient temperatures approach non-excursion hour temperature limit. However, at this time, the Mississippi River is at extremely low flow condition. The river flow is currently at 12,800 cfs compared to a normal river flow of 68,000 cfs. This low flow condition coupled with high ambient river temperatures and the need to maintain power on the grid with stability problems during this extreme weather condition period is the basis of the need for this provisional variance. Exelon's Quad Cities Station has already derated its two units by 200 megawatts in order to comply with the 91 degree limit of the provisional variance granted in IEPA 07-01.

On July 31, 2006 the Army Corps of Engineers made two significant reductions in the amount of flow in the Mississippi River. The first reduction reduced the flow from 23,000 cfs to 18,000 cfs. The second reduction reduced the flow from 18,000 cfs to 13,000 cfs. As of August 1, 2006 the flow is at 12,800 cfs. Upstream river temperatures are currently at 87.1 degrees Fahrenheit and the downstream temperature is currently 90.9 degrees Fahrenheit.

In addition to the current conditions of the Mississippi River there is also a very high demand of power due to the extreme weather conditions with a resulting high load condition of the grid which is currently having stability problems. At the current time PJM (organization responsible for power distribution) anticipates the implementation of Emergency Procedures to meet the high load demands in the Northern Illinois area in an attempt to prevent brownouts and rolling blackouts. Should PJM issue a warning then the Quad Cities Plant will need to ramp up power to meet demands. This power demand could result in the river temperatures increasing up to 7 degrees Fahrenheit which would result in a maximum downstream temperature of 93 degrees Fahrenheit. This condition would last until such time as emergency condition exits after which time the plant would resume operations to maintain the 5 degrees delta T allowed in the IEPA Order 07-01.

The Agency has reviewed the requested provisional variance and has concluded the following:

1. The environmental impact from the requested relief will be closely monitored and the Agency will be immediately notified of any significant impact along with actions taken to remedy the problem;

2. No other reasonable alternatives appear available;

3. No public water supplies will be affected;

4. No federal regulations will preclude the granting of this request; and

5. Exelon Quad Cities Station will face an arbitrary and unreasonable hardship if the request is not granted.

The Agency hereby GRANTS the Exelon Quad Cities Nuclear Power Station a provisional variance from Special Condition 6A and 6B of NPDES Permit IL0005037 for a period of 45 days subject to the following conditions:

1. During the period of time that either river flow is less than 27,500 cfs or upstream ambient river temperature exceeds 83 degrees Fahrenheit, Exelon's Quad Cities Station may exceed the maximum temperature limit stated in Special Condition 6B in NPDES permit IL0005037 by no more than 5 degrees Fahrenheit. (August 91 degrees Fahrenheit and September 90 degrees Fahrenheit)
2. During any period when either river flow is less than 27,500 cfs or upstream ambient river temperature exceeds 83 degrees Fahrenheit, and PJM issues an Emergency Warning Exelon's Quad Cities Station may exceed the maximum temperature limit stated in Special Condition 6B in NPDES permit IL0005037 by no more than 7 degrees Fahrenheit. (August 93 degrees Fahrenheit and September 92 degrees Fahrenheit)

This variance is subject to the following conditions:

A. During the variance period Exelon Quad Cities Station must continuously monitor intake, discharge and receiving water temperatures and to visually inspect intake and discharge areas at least three times daily to assess any mortalities to fish and other aquatic life;

B. Exelon Quad Cities Station shall document environmental conditions during the term of the provisional variance, including the activities described in A above of this Section, and submit the documentation to the Agency and the Department of Natural Resources within 30 days after the provisional variance expires;

C. Exelon's Quad Cities Station shall continue ongoing biological studies to characterize how fish and mussels respond to thermal conditions present in the affected portion of the Mississippi River. These studies include those mentioned on page 5 of Exelon's July 17, 2006 Emergency Application for Provisional Variance. These same studies were described in a July 11, 2006 e-mail message (attached) from Exelon to Mr. Rob Thompson of

USEPA Region 5 relating the efforts by Exelon to study aspects of river biology suggested at recent meetings concerning long-term relief from existing water quality standards at this site. In addition, Exelon must conduct a mussel study specific to this provisional variance; to document this activity; and to submit the documentation for the mussel study to the Agency and the Department of Natural Resources within 60 days after completing the survey described herein. Specifically, Exelon's Quad Cities Station must prepare a study plan within three days of the beginning date of this provisional variance to address the issue of increased excursion hours (increase in thermal stress) on unionid mussels in the Mississippi River in the vicinity of the discharge. The plan must include a survey of the mussel beds identified in a recent report: Draft Report: Unionid Mussel Biothermal Assessment for the Quad Cities Nuclear Station, Mississippi River Miles 503.0 to 506.9 (attached). The survey must address the apparent health of the mussels within the mussel beds given the higher than allowed river temperatures and longer duration of temperature excursions. Survey dives to ascertain effects on the mussel beds must begin as soon as possible after either the increase of excursion hours or maximum temperature relief afforded by the provisional variance are utilized. Conditions pertinent to the mussel populations to be recorded during the surveys will be much the same as conducted for the baseline study referenced above. These must include but are not limited to mussel species occurrence and density, age, zebra mussel infestation and apparent condition, i.e., any outward signs of heat stress such as morbidity, reflex time, position in the substrate, etc. Plant discharge temperatures, upstream river temperatures, incidence of excursion hours and other pertinent information must be provided to build an understanding of the conditions to which the mussels have recently been exposed. Surveys must continue until excursion hours are no longer being utilized, or in other words, until the weather conditions causing the need for more excursion hours have moderated. The final report for this study must address the changes noted in mussel populations from the previous study. Verbal reports are due to the Agency at regular intervals during the surveys. These reports must include any information on mussel die-off. If mussel die-off downstream from the discharge is found and is attributable to the thermal affects of the effluent, as compared to the condition of upstream populations, a monetary settlement will be required as calculated by the formula the Illinois Department of Natural Resources uses for mussel die-off settlements;

D. Exelon Quad Cities Station shall immediately notify the Agency and the Department of Natural Resources of any unusual conditions, including mortalities to fish or other aquatic life; to immediately take action to remedy the problem; to investigate and document the cause and seriousness of the unusual conditions while providing updates to the Agency and the Department of Natural Resources as changes occur until

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
IEPA 07-7
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026
ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

(217) 782-5544

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite. 11-500
Chicago, Illinois 60601

IEPA 07-7

Re: Exelon Generation Company, L.L.C. (Quad Cities Nuclear Power Station)
(Provisional Variance)

Dear Ms. Gunn:

Attached please find a letter from the Illinois Environmental Protection Agency (Illinois EPA) granting a provisional variance to Exelon Generation Company, L.L.C. for its Quad Cities Nuclear Power Station, effective upon the presence of certain conditions. The Illinois EPA is hereby submitting the letter to the Pollution Control Board for publication. Thank you for your assistance in this matter. If you have any questions regarding this matter, please contact the assigned attorney, James Day, at (217) 782-5544.

Sincerely,

Robert A. Messina
Chief Legal Counsel
Division of Legal Counsel

Attachment