

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740

www.exeloncorp.com

SVP-06-081

August 10, 2006

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

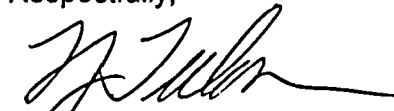
Subject: Extension of the Provisional Variance from National Pollutant Discharge Elimination System (NPDES) Permit No. IL0005037

Reference: Letter from Timothy J. Tulon (Exelon Generation Company, LLC) to U. S. NRC, "Provisional Variance from National Pollutant Discharge Elimination System (NPDES) Permit No. IL0005037," dated July 27, 2006

The referenced letter submitted a copy of the provisional variance that was granted from NPDES Permit IL0005037. Quad Cities Nuclear Power Station (QCNPS) requested an extension to that provisional variance on August 1, 2006. In accordance with Technical Specifications, Appendix B, Section 2.2, "Reporting Related to the NPDES Permits and State Certifications," enclosed is the requested extension to the provisional variance and the associated Illinois Environmental Protection Agency approval (IEPA Order 07-03).

Should you have any questions concerning this letter, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,



Timothy J. Tulon
Site Vice President
Quad Cities Nuclear Power Station

Attachments: A – Provisional Variance Extension Request
B – Approval of Provisional Variance Extension

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

C 001

Attachment A

Provisional Variance Extension Request

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740

www.exeloncorp.com

PM-06-015

August 1, 2006

Mr. Mike Garretson
Manager, Compliance Assurance Section
Division of Water Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794

Subject: Quad Cities Nuclear Power Station
NPDES Permit No. IL0005037
Provisional Variance Request – Extension
Emergency Application

Reference: IEPA Order 07-01 dated July 19, 2006 related to Quad Cities Nuclear
Power Station Provisional Variance Request Letter dated July 17, 2006

Dear Mr. Garretson:

Exelon Generation Company, L.L.C. ("Exelon") hereby requests that the Illinois Environmental Protection Agency ("IEPA" or "Agency") grants an extension of the provisional variance granted on July 19, 2006 to Quad Cities Nuclear Power Station ("Quad Cities," "Station" or "Facility"), pursuant to Section 35(b) of the Environmental Protection Act ("Act") 415 ILCS 5/35. Exelon submits this Emergency Application for an extension consistent with IEPA procedures at 35 Ill. Adm. Code 180.204. Quad Cities is located on the Mississippi River in Rock Island County. The Station discharges wastewater pursuant to NPDES Permit No. IL0005037, which IEPA issued on December 17, 2001 ("NPDES Permit"). The Station submitted its NPDES Permit renewal application to the Agency on November 18, 2004.

Station Description

Quad Cities Station is a nuclear-fueled steam electric generating facility located near Cordova, Illinois, on the Mississippi River at River Mile 506.8. The two boiling water reactors have a combined maximum generating capacity of 1824 megawatts electric. Circulating water used to cool and condense the steam from the generating process is withdrawn from and discharged to the Mississippi River.

Quad Cities operates a condenser cooling water system in open cycle mode. In this mode, cooling water is drawn from the Mississippi River into an intake canal, passes through the plant systems, and is discharged via diffusers into the Mississippi River (Outfalls 001 and 002). The maximum design flow is 2253 cfs or 1,011,000 gpm. Open

cycle operation with the diffusers was initially permitted by the IEPA on December 22, 1983.

Relief Requested

On July 17, 2006, Exelon requested that a provisional variance be issued to Quad Cities Station granting an additional 100 hours during which time Quad Cities Station may exceed the maximum temperature limits stated in Special Condition 6(b) of NPDES Permit No. IL0005037 by no more than 5 °F (91 °F for July and August 2006 and 90 °F for September 2006). The Agency granted the requested relief through issuance of IEPA Order 07-01 dated July 19, 2006. The provisional variance period began at approximately 1800 on Sunday, July 30, 2006, when Quad Cities exhausted the original 87.6 hours. A phone call message was left with Mr. Roger Callaway of IEPA on Sunday, July 30, 2006, at 1620 informing him of the start of the provisional variance period.

On Monday, July 31, 2006, the Army Corps of Engineers made two reductions in Mississippi River flow, the first coming at approximately 1130 when the river flow was reduced from 23,000 cfs to 18,000 cfs and the second coming at approximately 1500 when the river flow was reduced from 18,000 cfs to 13,000 cfs. The river flow is presently at 12,800 cfs. The upstream river temperature on August 1, 2006 at 0500 was 87.1 °F and downstream temperature was 90.9 °F.

With inlet temperatures above 86 °F since Sunday, July 30, 2006, Quad Cities has been using excursion hours continually. In addition, in light of the extreme temperature and flow conditions, Quad Cities Station has been derating each of its two units by 200 MWe (400 MWe is approximately 25% of station capacity) or more since July 31, 2006, in order to comply with the 91 °F limit of the provisional variance order.

Current flow and temperature projections show that short term (30 day) and longer term (90 day) forecasts indicate above normal temperatures and average precipitation. Flow of the Mississippi River at the Quad Cities is dependant upon a watershed that extends into the upper Midwest. Precipitation in the watershed is considered to be a more significant factor than temperatures. Precipitation forecasts are for normal precipitation (neither above or below normal). Average precipitation is not expected to relieve the extreme low flow conditions currently experienced.

Based on these projections, Quad Cities anticipates that it will need to continue using excursion hours during the remainder of this week even with the substantial derates discussed above. We anticipate that 72 of the 100 hours granted will be used by Wednesday, August 2, 2006. Further, such projections indicate that these extreme temperature and flow conditions will continue through August and into September.

In light of these circumstances, Exelon requests that the provisional variance issued on July 19, 2006, be extended for an additional 45 days beginning on the date that Quad Cities exhausts the additional hours granted by provisional variance, which began on July 30, 2006. During the additional 45 days, Quad Cities Station may exceed the maximum temperature limits stated in Special Condition 6(b) of NPDES Permit No. IL0005037 by no more than 5 °F (91 °F for July and August 2006 and 90 °F for September 2006).

In addition, the Station is requesting relief from Special Condition 6 (a) regarding maximum temperature rise during periods that urgent load conditions are declared. PJM Interconnection (standing for Pennsylvania, New Jersey, Maryland) is the organization responsible for power distribution anticipates the implementation of Emergency Procedures to meet load in the Northern Illinois area up to and possibly including load management (i.e. brownouts and rolling blackouts). PJM is responsible for declaring the existence of an Emergency, and for directing the operations of PJM Members as necessary to manage, alleviate, or end an Emergency. PJM is also responsible for transferring energy on the PJM Member's behalf to resolve an Emergency.

There are three general levels of emergency actions for capacity shortages: alerts, which are issued day-ahead; warnings, which are issued real time; and actions, which are issued real-time. Emergency procedures are achieved in a controlled, deliberate manner so as to not adversely affect system reliability, while minimizing the impact of implemented emergency actions on customers.

Exelon is requesting that the Agency approve a provisional variance that would allow Quad Cities Station to ramp up power when PJM issues a warning of a capacity shortage. Based on predictable operational conditions, during these periods, river temperatures could increase up to 7 °F, which would provide a maximum downstream temperature of 93 °F degrees. Operationally, this condition would last as long as the emergency condition exists after which time the plant would resume operations to maintain the previously approved 5 °F delta T and maximum discharge temperature of 91 °F as contained in IEPA Order 07-01 dated July 29, 2006. At the present time, a Warning is imminent and we are asking the Agency to allow Quad Cities to be able to contribute to maintaining grid conditions.

Necessity for Request

Special Condition 6B of NPDES Permit limits the temperature at the edge of the mixing zone to 86 °F in July and August and 85 °F in September, except when the Station is using excursion hours, during which time the temperatures at the edge of the mixing zone may be 3°F warmer than these limits. As a rule, the Quad Cities Station has been able to operate well within these limits due to the fact that the ambient temperatures of the River (measured upstream of the discharge) generally remain below the non-excursion hour limit. Even when the ambient river temperatures begin to approach the

non-excursion hour limits, the significant river flows, which are generally characteristic of the Mississippi River, are sufficient to allow the Station to avoid using a significant percentage of its excursion hour allowance. It is only during periods when the ambient river temperatures are very close to or exceed the non-excursion hour limits or during periods of extreme low flows that the Station is forced to use a significant number of its excursion hour allowance. As described above, both of these extreme conditions have existed in the past few weeks and are projected to continue through the next 4-6 weeks.

When the ambient river temperatures exceed the non-excursion hour limits, the Station has no option other than to use excursion hours, and once its allotment of excursion hours is depleted, the Station must cease operating to maintain compliance with the NPDES Permit. Partial deratings or adding cooling facilities (such as cooling towers) will not cause the Station to achieve compliance with a limit that already is exceeded even before any heat is added as a result of Station operations.

As you are aware, and as discussed above, Illinois is in the midst of dangerously hot summertime conditions. Quad Cities Station first began using excursion hours on July 16, 2006 at 13:45. The original NPDES Permit allotment of 87.6 excursion hours was used up by Sunday, July 30, 2006 at 1800. The river flow is presently at 12,800 cfs compared to a normal river flow for this time of year of 68,000 cfs. The ambient river temperature is presently 87.1°F. With this unusually high ambient river temperature, the site has already used 34.75 hours of the 100 provisional variance hours as of 0500 on August 1, 2006.

As a consequence of the unusually hot and humid weather conditions, absence of cooling during the evening hours, the drastically low flows, the capacity of the Mississippi River to dissipate heat has been drastically reduced beyond its normal capabilities. The river is not cooling off during the evening hours as is typical this time of year. Without nighttime cooling, the river retains the heat introduced to it during the daytime hours, both upstream and downstream.

A short cold front is predicted for the region on Thursday, August 3, when the temperatures are expected to moderate into the mid 80's. However, longer term projections indicate that these extreme temperature and flow conditions will continue through August and into September. Therefore, even with the partial derates discussed above, the station will not be able to comply with its prior permitted limits.

As previously identified, and in cooperation with IEPA's request that Exelon explore long-term thermal relief options for Quad Cities, Exelon commissioned extensive studies of the Station's thermal output and impacts. Exelon has shared drafts of those studies and its draft long-term regulatory relief proposal with federal and State regulators, with whom related discussions are currently underway. Ongoing activities are progressing with Federal and State Agencies to address technical issues in order to increase the number of thermal excursion hours allowed for the plant and to track the excursion hour

allotment on a calendar year basis for the long term. These activities include: (1) a comprehensive review of historical fish sampling data in Pool 14 and adjacent pools; (2) a comprehensive review of temperature monitoring data (including data obtained from various depths); (3) gathering thermal tolerance information for representative important species of fish is being researched; (4) a literature search on mussel thermal tolerances; (5) various mussel toxicology experts are being contacted to obtain further input on thermal tolerance assessment methodologies; and (6) substrate temperature data loggers which have been installed in the upstream and immediately downstream mussel beds.

The goal of Exelon's long-term thermal relief proposal is to substantially mitigate the need for the emergency type relief requested herein. However, current and forecasted extreme weather, drought conditions and record low and lowering river flows compel this urgent request for relief.

Assessment of Environmental Impacts

Because Quad Cities Station is not proposing to increase cooling water flows there will be no increase in impingement or entrainment as a result of the issuance of the requested Provisional Variance. Additionally, because the ambient river temperature increase has been gradual, resident fish species have either acclimated to the higher temperature or have found thermal refuge. Therefore, resident fish species will not be subject to any heat shock as a result of increasing the allotment of excursion hours for Quad Cities Station.

The biological studies undertaken as part of Exelon's above-mentioned investigation of long-term, permanent relief options considered the effects on species of fish and shellfish that could result from increasing the number of excursion hours available to the plant. While these studies currently are under review, they fully support the conclusion that granting the requested Provisional Variance will not cause significant or unacceptable adverse effects to these species. Species of fish that are likely to suffer from being exposed to temperatures in the excursion zone (i.e. up to 3°F above the monthly standard) will already have taken refuge from the higher than normal ambient river temperatures. Therefore, no fish mortality should result from operations authorized by the Provisional Variance.

Shellfish do not have similar thermal avoidance capabilities. However, the recently conducted biological studies show that the mussel (unionid) species in beds that are closest to the plant's discharge are generally more temperature tolerant, and are capable of surviving relatively short-term elevated thermal exposures. Species thought to be less thermally-tolerant inhabit beds located further downstream, in the Cordova Bed, located about 1 mile downstream from the plant. However, because the considerable distance between the plant to the Cordova and the flow characteristics of the River (that cause much of the plant's thermal discharge to avoid the Cordova Bed)

the Provisional Variance should not cause any appreciable harm to mussel species downstream of the plant.

Alternatives to Requested Relief

As described above, Quad Cities Station generally uses excursion hours during periods of high ambient river conditions and low-river flows. Due in part to the mixing capacity provided by the Mississippi River, and the fact that ambient river temperatures rarely exceed the non-excursion hour NPDES Permit limits, only a relatively small percentage of the permitted excursion hours typically are used to cover any one of these periods. Additional hours are kept in reserve to deal with future periods of extreme weather or other contingencies. Over the last 48 hours, Quad Cities Station has used up its original NPDES Permit allotment of 87.6 hours and has started using excursion hours approved by IEPA Board Order 07-01 dated July 19, 2006. Unless a second provisional variance is issued, when the Station runs out of hours, it will have to shut down during all times that the ambient river temperatures are at or above the non-excursion hour limit. Based on river temperatures recorded so far this summer and long range weather projection for August, it is likely that there will be a number of extended periods during which ambient river temperatures will be at or above these limits requiring the need for excursion hour usage. As previously explained, neither the option of derating the units nor of obtaining additional temporary cooling capacity will allow the Station to maintain compliance if the ambient river temperatures exceed the applicable temperature limits.

Without the power that Quad Cities Station could generate as a result of the requested provisional variance, as described above, there is a risk that the energy needs of Northern Illinois may not be met during the next few weeks, when there is the greatest demand for electricity resulting from extreme heat conditions. In addition, depending on the operating status of other generating stations in the area, Quad Cities Station continued operation may be essential for voltage support for the Commonwealth Edison Company and Mid American Transmission systems.

Mitigative Actions to be Taken During the Variance Period

In accordance with Special Condition "C" of the Agency's Order 07-01 dated July 19, 2006 regarding the provisional variance for Quad Cities Station, Exelon proposed the following study plans to characterize how fish and mussels respond to thermal conditions present in the affected portion of the Mississippi River.

With regard to the fish monitoring, once it is determined that permitted excursion hours (> 87.6 hours) have been exhausted and provisional variance excursion hours are being used, Fish Lab Staff (HDR/LMS and/or Exelon) will perform daily surveys to document any stress or mortality to fish and other aquatic life, both upstream and downstream of the Quad Cities Station discharge. Surveys will be conducted from a boat and will be performed from 14:00 hrs to 17:00 hrs. Each daily survey will consist of visual surveys

of the shoreline area encompassing each of eight designated long-term monitoring sampling areas (three upstream, five downstream). Water temperature and dissolved oxygen concentration will be measured at each Mississippi River location during each survey. Any observations of fish/aquatic life mortality or stress will be documented at the lowest taxonomic level practicable. Individuals will be counted and size range will be estimated.

On any date that provisional variance hours are being used, three visual inspections of the Station's intake and discharge areas will be conducted by Station Staff. These visual surveys will be spaced such that several hours elapse between observations. Areas to be surveyed are from the barge ramp, downstream from the intake fore bay approximately 100 ft (intake area); along the Iowa shoreline from 500 to 1000 ft downstream of the diffuser; and along the Illinois shoreline 500 to 1000 ft downstream of the diffuser. Station Staff will document the number and general category of dead or stressed fish/aquatic life. If, during any observation, it appears a "fish kill" is occurring (numbers of individuals exhibiting difficulty in swimming, aspiring or other aberrant behavior), the Station Staff will contact the Quad Cities Fish Lab who will dispatch a team to determine the magnitude of the event and species affected. If Fish Lab Staff believe a "fish kill" is underway, the Shift Manager will be notified so that notifications can be made to Illinois EPA and Illinois DNR. A report will be prepared and submitted to the Agency and Department of Natural Resources within 60 days after completing the fish monitoring described above.

With regard to the unionid (mussel) monitoring, the sampling areas and methods for the mussel monitoring program will be similar to the 2004 and 2005 mussel monitoring surveys conducted at Quad Cities Station by Ecological Specialists Inc. Sampling will start the week of August 1, 2006 with a follow-up survey planned for the end of September, 2006. The primary objective of the sampling will be to determine the condition of unionids under increased excursion hour conditions in the Steamboat Slough Bed, Cordova Bed, and Upstream Bed, which are the mussel beds identified in the Draft Unionid Mussel Biothermal Assessment, Exhibit "C" of IEPA's Order 07-01 dated July 19, 2006.

During the survey, unionid species composition and species richness will be estimated from qualitative sampling. Unionid density, age structure, and mortality will be estimated from quantitative sampling. Metrics will be compared spatially and temporally.

Qualitative sampling will consist of at least 20 and 25, 5-minute samples in each bed for the August and September sampling, respectively. A diver will collect all unionids encountered (visually and tactually) during a 5-minute sampling interval. Depth, substrate, and GPS position, bottom temperature, dissolved oxygen, and surface velocity will be recorded at each point. Condition of unionids will be noted from the divers perspective (e.g., position in substrate, gaping, siphoning) and by the malacologist (e.g., responsiveness, excessive mucous, emaciation). Both live and

freshly dead unionids will be identified to species, counted, and categorized as adult or juvenile (≤ 5 years old). Documentation of the degree of zebra mussel infestation will also be noted.

Quantitative sampling will consist of collecting at least 40 and 90 randomly located whole substrate 0.25m^2 quadrat samples at each mussel bed for the August and September sampling, respectively. This sample size will be sufficient to detect a 25% change in mean density within a 95% confidence interval based on data collected in 2004 and 2005. For each sample, a diver will excavate all substrate within a 0.25m^2 quadrat into a 20L bucket, which will be brought to the surface and sieved through 12mm and 6mm sieves. Substrate composition will be visually assessed according to the Wentworth Scale (Wentworth, 1922). Quadrat position and depth will also be recorded for each quadrat. Live and freshly dead unionids (shiny nacre, periostracum intact, dead less than one year) will be identified to species, aged (external annuli count), and measured (length in mm). Sexually dimorphic species will be checked for gravidity. River temperature and excursion hour use information in conjunction with the mussel analysis will be used to evaluate the relationship of the mussel condition to specific temperatures.

A letter report will be prepared and submitted to the Agency and the Department of Natural Resources within two weeks of completing the unionid monitoring survey which is scheduled to start on August 3, 2006. This initial report will include a preliminary summary of data (% mortality, condition, species composition, temperature and dissolved oxygen conditions). A full report will be prepared within 60 days of completing the second monitoring survey planned for the end of September, which will include meaningful metrics of detected mussel conditions.

In accordance with Special Condition "F" of the Agency's Order in the above referenced matter dated July 19, 2006 regarding the provisional variance for Quad Cities Station, Quad Cities Station notified Roger Callaway of the Agency on Sunday, July 30, 2006 at 1620 when the need for the 100 additional excursion hours began. Written confirmation of these notices will be sent to the Agency within 5 days.

Summary

Exelon requests that the Agency extends for an additional 45 days the provisional variance granted to Exelon/Quad Cities on July 19, 2006, beginning on the date that we exhaust the hours allowed by that provisional variance order, during which time Quad Cities Station may exceed the maximum temperature limits stated in Special Condition 6(b) of NPDES Permit No. IL0005037 by no more than 5°F (91°F for July and August 2006 and 90°F for September 2006).

Illinois Environmental Protection Agency
August 1, 2006
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In addition, Exelon is requesting that the Agency allow Quad Cities Station to increase power during periods of critical load, specifically, when PJM Interconnection issues a warning of a capacity shortage, as described above.

For the reasons described above, Exelon believes that not granting this second provisional variance to Quad Cities Station will impose an arbitrary and unreasonable hardship. A negative decision will almost certainly result in a loss of generating capacity in Northern Illinois during periods of great electrical demand and could impact voltage support for the Commonwealth Edison Company and Mid American Transmission systems, which includes Illinois and portions of Iowa. If you should have any questions regarding these matters, please feel free to contact Vicki Neels at (309) 227-3200 or Mark Stuhlman at (309) 227-2765 from Quad Cities or John Petro, Senior Environmental Analyst, Exelon Generation at (630) 657-3209.

Very Truly Yours,



William R. Gideon
Plant Manager
Quad Cities Station

cc: Letter Book

Attachment B

Approval of Provisional Variance Extension

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 - 07-03
(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

normal conditions return; to notify the Agency and the Department of Natural Resources when normal conditions return; and to submit the documentation to the Agency and the Department of Natural Resources within 30 days after normal conditions return;

- E. Exelon Quad Cities Station shall develop and implement a response and recovery plan to address any adverse environmental impact due to thermal conditions resulting from the provisional variance, including loss and damage to aquatic life;
- F. Quad Cities Station shall notify Roger Callaway of the Agency by telephone at 217/782-9720 when the conditions that trigger this variance are present and again when those conditions subside. Written confirmation of each notice shall be sent within five days to the following address:

Illinois Environmental Protection Agency
Bureau of Water - Water Pollution Control
Attention: Roger Callaway
1021 North Grand Avenue East, MC #19
Springfield, Illinois 62794-9276

- G. Exelon Quad Cities Station shall sign a certificate of acceptance of this provisional variance and forward that certificate to Roger Callaway at the address indicated above within one day of the date of this order. The certification should take the following form:

I (We) _____, hereby accept and agree to be bound by all terms and conditions of the provisional variance granted by the Agency in _____ dated _____.

Petitioner

Authorized Agent


Title

Date

Exelon Quad Cities Station shall continue to monitor and maintain compliance with all other parameters and conditions specified in its NPDES Permit No. IL0005037.

The Illinois EPA grants this provisional variance in accordance with its authority contained in Sections 35(b), 36 (c), and 37(b) of the Illinois Environmental Protection Act (415 ILCS 5/35(b), 36(c), and 37(b) (2004). The decision to grant this provisional variance is not intended to address compliance with any other applicable laws or regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert A. Messina", with a long horizontal flourish extending to the right.

Robert A. Messina
Chief Legal Counsel

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740

www.exeloncorp.com

PM-06-018

August 2, 2006

Mr. Roger Callaway
Compliance Assurance Section
Division of Water Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794

Re: Quad Cities Nuclear Power Station NPDES Permit No. IL0005037
Provisional Variance Request – Emergency Application IEPA 07-03

Dear Mr. Callaway:

Thank you for the time, consideration and attention IEPA dedicated to Exelon's provisional variance request. We sincerely appreciate all of your efforts. Below is Quad Cities Station's Certificate of Acceptance of the Provisional Variance Order issued by IEPA in this matter.

Very Truly Yours,



William R. Gideon
Plant Manager
Quad Cities Station