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DEC 19 2012

STATE OF ILLINOIS
Pollution Control Board

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

EXELON GENERATION LLC,)
)
 Petitioner,)
)
 v.)
)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

PCB 13-31
(Variance-)

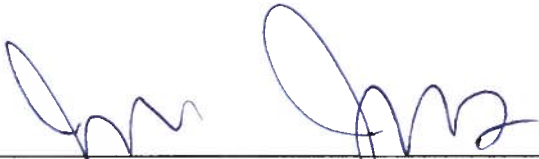
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NOTICE OF FILING

To: Office of the Clerk of the Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the "Petition for Variance" of Exelon Generation LLC, a copy of which is herewith served upon you.

Dated: December 19, 2012



One of the attorneys for
Exelon Generation LLC

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THIS FILING SUBMITTED ON RECYCLED PAPER

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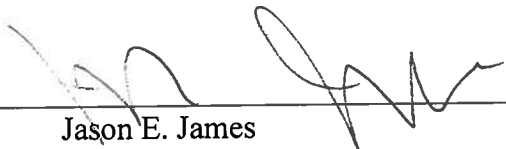
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APPEARANCE

I hereby file my appearance in this proceeding, on behalf of Exelon Generation LLC.

Dated: December 19, 2012



Jason E. James

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PETITION FOR VARIANCE

Pursuant to Section 35(a) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/35(a), and Part 104 of Title 35 of the Illinois Administrative Code, 35 Ill. Admin. Code § 104.100 et seq., 35 Ill. Adm. Code § 304.141(c), Exelon Generation LLC ("Exelon") hereby petitions the Illinois Pollution Control Board ("Board") for a variance authorizing the discharge of heated cooling water from Exelon's Quad Cities Nuclear Generating Station ("Quad Cities Station" or the "Plant") in accordance with the terms and conditions set forth in this Petition for Variance ("Petition").

In summary, Exelon is requesting the Board to grant the Quad Cities Station a five-year variance that would allow the Plant to discharge heated cooling water to the Mississippi River in accordance with alternate thermal limits proposed by Exelon, pursuant to Section 316(a) of the Clean Water Act. The five-year variance period will allow sufficient time for the Illinois Environmental Protection Agency ("Illinois EPA") and the Board to put in place procedural rules and requirements needed for conducting proceedings under Section 304.141(c) of the Board's rules (35 Ill. Admin. Code 304.141(c) to implement Section 316(a) of the federal Clean Water Act.

I. INTRODUCTION AND BACKGROUND

A. Exelon's ATS Petition

Section 316(a) of the Clean Water Act ("Section 316(a)") grants a discharger of heated effluent the right to obtain specific effluent limits for its discharge that differ from generally applicable limits that would otherwise be imposed. Specifically, Section 316(a) provides:

With respect to any point source otherwise subject to the provisions of Section 301 or Section 306 of the [Clean Water] Act, whenever the owner or operator of any such source, after opportunity for public hearing, can demonstrate to the satisfaction of the Administrator (or, if appropriate, the State) that any effluent limitation proposed for the control of the thermal component of any discharge from any such source will require effluent limitations more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made, the Administrator (or, if appropriate, the State) may impose an effluent limitation under such section on such plant, with respect to the thermal component of such discharge (taking into account the interaction with other pollutants), that will assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on that body of water.

In Illinois, Section 316(a) is implemented through 35 Ill. Adm. Code

§ 304.141(c), which authorizes the Board to determine that specific thermal standards should apply to a particular discharger in lieu of those imposed by the Board's generally applicable rules. Specifically, § 304.141(c) provides as follows:

The standards of this Chapter shall apply to thermal discharges unless, after public notice and an opportunity for public hearing, in accordance with Section 316 of the CWA and applicable federal regulations, the Administrator and the Board have determined that different standards shall apply to a particular thermal discharge.

On September 20, 2012, Exelon filed a petition with the Board seeking alternative thermal standards for the Quad Cities Station under Section 304.141(c) ("ATS Petition"). The ATS Petition included a demonstration prepared pursuant to Section 316(a)

supporting the proposed alternative limits, as well as a Habitat Conservation Plan (“HCP”) and an Incidental Take Permit, both prepared in coordination with the United States Fish and Wildlife Service (“USFWS”), to address possible endangered species concerns related to the alternate limits.¹

Because the Board’s rules do not provide specific procedural rules for conducting proceedings pursuant to § 304.141(c), the ATS Petition requested that the Board order that the ATS Petition proceeding be conducted under the Board’s General Rules set forth in 35 Ill. Admin. Code Part 101. Illinois EPA joined Exelon in a motion seeking an order from the Board requesting similar procedural relief. Among the reasons given in support of the joint motion, Exelon and Illinois EPA indicated that the United States Environmental Protection Agency (“USEPA”) maintains that alternate thermal standards granted under Section 316(a) are tied to the NPDES Permits issued to the discharger, and are to be reviewed each time the Permit is renewed, to ascertain whether the circumstances continue to justifying the alternate limits.

By Order dated October 18, 2012, the Board denied Exelon’s and Illinois EPA’s joint motion. The Board ruled that it was not authorized to create a specific procedure for proceedings under Section 304.141(c), without first conducting a rulemaking to promulgate specific procedures for proceeding under Section 304.141(c). (IPCB Order in the matter of Petition of Exelon Generation, LLC, AS 13-1 (October 18, 2012), *available at* <http://www.ipcb.state.il.us/documents/dsweb/Get/Document-77754>.) In its Order, the Board also provided Exelon the opportunity to amend and resubmit its ATS Petition to the Board either as an adjusted standard request or a site specific rulemaking.

¹ The 316(a) Demonstration is attached here as Exhibit 1.

As explained in this Petition, neither the adjusted standard nor the site specific rulemaking approach suggested by the Board provide an adequate remedy for Exelon. Either approach would require that Exelon address and demonstrate more than is required by Section 304.141(c) to obtain alternate thermal standards under Section 316(a). Moreover, even if Exelon were to pursue thermal relief as an adjusted standard or site specific rule, it is doubtful USEPA ultimately would approve an NPDES permit that incorporates such relief.

The deficiency in the Board's rules – the absence of a clear process for implementing Section 316(a) and Section 304.141(c) – needs to be cured to allow parties, such as Exelon, the right to obtain alternate thermal limits provided for in those provisions. By this Petition, Exelon is seeking a variance that would allow Exelon to operate Quad Cities Station in accordance with the alternate thermal limits sought in its ATS Petition, while the Board and Illinois EPA take steps needed to cure that deficiency.

II. REGULATIONS FROM WHICH VARIANCE IS SOUGHT

Quad Cities Station is a two unit nuclear electric generating facility located at river mile 506.5, on the east bank of the Mississippi River, approximately four miles north of Cordova, Illinois. The Plant operates in an open cycle, once through cooling mode, drawing water from the Mississippi River, heating the water as it passes through the Plant's steam condensers, and discharging the heated water, via a diffuser piping system, directly back into the Mississippi River.

35 Ill. Adm. Code § 303.331 sets forth the maximum monthly temperature standards for the reach of the Mississippi River into which the Station discharges.² Section 303.331 provides that the monthly temperature standards may be exceeded by up to 3° F (1.7° C) for 1% of the hours in any 12 month period.³ The Plant is subject to the applicable limitations of Sections 303.331, measured at the edge of a mixing zone. 35 Ill. Adm. Code § 302.102 sets forth the requirements applicable to mixing zones, including the requirement for maintaining a zone of passage within the receiving waters. The portions of cross-sectional area or volume of flow of the receiving stream not included in a mixing zone is termed the zone of passage (“ZOP”). Pursuant to the 35 Ill. Adm. Code § 302.102(b)(8) the ZOP must contain at least 75% of the cross-sectional area or volume of flow of the receiving stream.

Exelon is seeking a five-year variance for the Quad Cities Station from the limitations in Section 303.331 that: (i) restrict the number of excursion hours to 1% of the hours in any 12 month period; and (ii) restrict the excursion hour maximum temperature rise to 3° F, and the limitation in Section 302.102(b)(8) that restricts the zone of passage to 75% of the cross-sectional area or volume of flow of the Mississippi River. In lieu of these restrictions, Exelon is requesting that, during the term of the variance, Quad Cities Station be allowed 219 excursion hours (2.5%) per calendar year, and that during the months of July, August and September the Plant be permitted to exceed the monthly temperature standards by up to 5° F for no more than 131.4 of the 219 excursion

² The monthly limits are: January -- 45° F; February -- 45° F; March -- 57° F; April -- 68° F; May -- 78° F; June -- 85° F; July -- 86° F; August -- 86° F; September -- 85° F; October -- 75° F; November -- 65° F; and December -- 52° F.

³ One percent of the hours in a year equates to 87.6 hours. When temperatures in the River are within the 3°F above the monthly limit zone, the Station tracks the number of hours its operations contribute to temperatures being in that zone (referred to as “excursion hours”).

hour allowance. In, addition, the zone of passage for Quad Cities Nuclear Station would be 66% of the cross-sectional area or volume of flow of the Mississippi River.

III. PETITIONER'S ACTIVITY

A. The Quad Cities Plant Operations

Quad Cities Station is located in Rock Island County, Illinois on the east bank of the Mississippi River, approximately 3 miles north of Cordova, Illinois, 20 miles northeast of the Quad Cities Metropolitan Area of Davenport, Iowa, Rock Island, Moline, and East Moline, Illinois and 7 miles southwest of Clinton, Iowa. The Station is located on Pool 14 of the Mississippi River, at approximate River Mile 506.5 above the confluence of the Ohio River.

Quad Cities Station began low power testing in 1972 and began commercial operation in 1973. The original forty-year operating license issued by the United States Nuclear Regulatory Commission ("NRC") allowed for operation of the station until 2012. In 2003, Exelon applied for a twenty-year extension to the original operating license. The Plant was granted a twenty-year license extension in 2004; its operating license now expires in 2032.

Quad Cities Station Unit-1 and Unit-2 nuclear reactors are boiling water reactors that utilize forced circulation boiling water, which produces steam that turns turbines to generate electricity. The Plant's original operating license limited each reactor to a core thermal output of 2,511 megawatts thermal (MWt). In December 2000, Exelon submitted an application to the NRC for a change in the operating license for an increase of the rated core thermal power for each QCNS reactor of 17.8 percent, from 2,511 to 2,957

MWt. In December 2001, the NRC granted Exelon a license amendment allowing an increase in power level to 2,957 MWt per unit.⁴

The Plant's maximum design cooling water flow is 2,253 cubic feet per second ("cfs") or 1,011,000 gallons per minute ("gpm"). The volume of cooling water required for plant operation varies with station power output and ambient river temperature. During the summer months, both units operate with all three circulating water pumps in operation and an average of three service water pumps, for an average summer cooling water flow of 2,191 cfs or 983,400 gpm. During the winter months, both units operate with two circulating water pumps in operation, an average of two service water pumps, for an average winter cooling water flow of 1,200 cfs or 538,570 gpm.

The circulating water effluent from both units' main condensers and station service water system combine in the Plant's discharge bay. The discharge bay is approximately 700 feet long by 150 feet wide. The effluent from the discharge bay is then distributed across the Mississippi River through a diffuser pipe system. The diffuser pipe system consists of two 16-foot diameter pipes buried in the river bed; the north pipe extends approximately 2,100 feet across the river, while the south pipe terminates about 390 feet before the end of the north pipe. Each diffuser pipe is fitted with 20 discharge risers of 36-inch diameter spaced at 19 feet 8 inches in the deep portion of the river, and 14 discharge risers (9 of which presently are closed) of 24-inch diameter spaced at 78 feet 8 inches in the shallow zone of the river. The diffuser pipe system was designed to achieve complete mixing of the condenser water with the river flow within a short distance downstream of the diffuser pipe.

⁴ Quad Cities Station is planning to request a license amendment from the NRC next year that, if granted, would allow an increase in power level to 3016 MWt per unit.

Heated water from the Plant is not discharged to the shallow portions of the river because the lower velocity of the shallow portion of the river does not provide effective dilution. Blind flanges close off the first nine 24-inch risers from the Illinois side of the river. The operational diffusers begin approximately 840 feet from the Illinois shore and proportionately distribute the discharge 1,200 feet across the deeper portion of the river.

Temperature surveys have been conducted to determine the distribution of the temperature rise in the area located 500 feet downstream from the diffuser pipes. The surface area of the reach of the river between the diffuser pipes and the 500 feet downstream cross-section is 24.9 acres, slightly less than the 26 acres allowed by the Board's mixing zone rules.

B. The Plant's NPDES Permit

The Plant is authorized to discharge heated effluent to the Mississippi River pursuant to NPDES Permit IL0005037 (the "Permit"), issued by the Illinois EPA. The Permit provides that the Plant must comply with the applicable limitations of Sections 303.331 and 302.21, measured at the edge of a mixing zone.

Specifically, Special Condition 6 of the Permit provides as follows:

Discharge of wastewater must not alone or in combination with other sources cause the receiving stream to violate the following thermal limitations at the edge of the mixing zone:

- A. Maximum temperature rise above the natural temperature must not exceed 5°F.
- B. Water temperature at representative locations in the main river shall not exceed the maximum limits in the following table during more than (1) percent of the hours (87.6 hrs) 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. (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.)

<u>Month</u>	<u>Temperature Limitation</u>
January	45°F
February	45°F
March	57°F
April	68°F
May	78°F
June	85°F
July	86°F
August	86°F
September	85°F
October	75°F
November	65°F
December	52°F

- C. The area of diffusion of an effluent in the receiving water is a mixing zone, and that mixing zone shall not extend:
- i) over more than 25 percent of the cross sectional area or volume of flow in the Mississippi River.
 - a. more than 26 acres of the Mississippi River.

IV. NONCOMPLIANCE WITH THERMAL REQUIREMENTS

During summer months, as ambient Mississippi River temperatures rise, river flow rates decrease, and the demand for electricity peaks, Quad Cities Station typically consumes excursion hours to satisfy the energy needs of its customers. Often, particularly in recent years, the Plant has consumed its 1% annual allotment of excursion hours well before the end of the summer, and, as a result, the Plant has either been forced to reduce power generation, seek emergency provisional variances from the Illinois EPA to obtain additional excursion hours, or do both.⁵

⁵ In cases where a significant number of excursion hours are consumed by the Plant during the late summer months (August and September), the Plant does not regain those hours until the corresponding months of the following year, due to the rolling 12-month method that the Board's rules require for tracking excursion hours. In those instances, the Plant has less than the full 1% allotment of excursion hours to meet summer demand.

In addition, modeling studies conducted by Exelon's consultants show that when Mississippi River flows fall below 16,400 cfs, and the Quad Cities Station is operating at full capacity, the thermal mixing zone may occupy more than 25% of the River flow. As a result, under such flow conditions, there is less than 75% of the River flow available for a Zone of Passage, as required by 35 Ill. Adm. Code § 302.102(b)(8).

Once the excursion hour allocation is used up or the river flows fall below 16,400 cfs, the only operational option for maintaining compliance with these thermal limits is for the Plant to reduce the thermal discharge by reducing electrical generation output. Reducing power often may not be a practical or desirable option, because the time of year excursion hours typically are consumed is the same time that the demands for power and electrical grid stability concerns require that the Plant operate at or near maximum capacity. Moreover, during periods that the ambient (i.e., upstream) temperature of the River exceeds the monthly maximum, the only option available is to shut the Plant down entirely when available excursion hours are depleted. For these reasons, Exelon prepared the 316(a) Demonstration for Quad Cities Station to support the issuance of the alternative thermal standards sought in Exelon's ATS Petition, that would increase the number of excursion hours available to the Plant as well as the excursion hour maximum temperature.

V. COMPLIANCE ALTERNATIVES AND COSTS

Theoretically, the alternatives for maintaining compliance with the excursion hour limits involve reducing the thermal discharge to the river either by reducing the Plant's electrical power output or by using facilities, such as cooling towers or ponds, that are capable of removing some of the heat from the cooling water before it is discharged.

However, as discussed below, in the case of Quad Cities Station neither alternative is viable.

By their nature, excursion hours are used when the ambient temperatures of the receiving waters are within 3° F of, or exceed the monthly maximum limit imposed by the Board's rules. At Quad Cities Station, excursion hours historically have been used when ambient river temperatures are either at or above the monthly maximum limit, or within 1/2° F of the limit. In these circumstances, cooling facilities (towers or ponds) would not be helpful, even if they were available, since these facilities are not be capable of reducing the condenser cooling water to below ambient temperatures. Almost any thermal discharge from the Plant, when ambient temperatures are close to or exceed the monthly maximum temperature, would require using excursion hours.⁶

The other alternative for assuring compliance with the excursion hour limit is to reduce electrical power output, or, when ambient river temperatures are above monthly maximum limits, to shut down the Plant entirely. Not only is this alternative extremely costly, as a practical matter it is often infeasible. Excursion hours are almost always used during periods of high ambient river temperatures that occur during the warmest days of Summer, when the demand for electrical power generally is at its peak. Meeting that demand and ensuring that the transmission grid remains stable often requires that baseload generating units, such as Quad Cities Station, continue to operate.⁷

⁶ A feasibility study performed for Exelon in 2006 concludes that the overall cost of installing cooling towers at Quad Cities would range from \$48 to \$61 million, and that their use would not result in any appreciable reduction of the need to use excursion hours.

⁷ For that reason, Exelon has needed repeatedly to obtain provisional variances from the Illinois EPA that grant additional excursion hours to the Plant.

VI. ARBITRARY OR UNREASONABLE HARDSHIP

Section 316(a) of the Clean Water Act and Section 304.141(c) of the Board's rules provide that if a discharger can show that effluent limits based on generally applicable standards are more stringent than necessary to protect the balanced indigenous community of shellfish, fish and wildlife affected by the discharge, the discharger is entitled to alternate limits (that assure such protection). Neither Section 316(a) nor Section 304.141(c) require that the discharger present evidence of the financial costs of complying with the generally applicable thermal requirements or alternate limits, nor do these provisions require or suggest that the Board should weigh or consider these costs in deciding whether a discharger has met its burden under 316(a). Put simply, economic costs of compliance are not relevant factors in determining whether alternate thermal limits under Section 316(a) are warranted. Moreover, the provision in the Board's rules that implements Section 316(a) in Illinois - Section 304.141(c) - does not expand the showing a discharger is required to make beyond what is required by Section 316(a).

In contrast, the Board's rules governing both adjusted standards and site specific rules would require a petitioner to address the economic costs of complying with generally applicable requirements and proposed alternate thermal limits, and require that the Board weigh these costs in deciding whether to grant the petitioner's request for relief. Specifically, Section 104.406(e) of the Board's rules requires that an adjusted standard petition include a description of the efforts needed to comply with the generally applicable requirements, and the economic costs of all compliance alternatives. Similarly, Section 102.210(b) of the Board's rules requires that a proposal for a site specific rule

(that would replace a rule of general applicability) specify why the general rule is not economically reasonable for the proponent of the site specific rule.

The Board's suggestion that Exelon should consider pursuing alternate thermal limits in the form of an adjusted standard or site specific rule would impose additional evidentiary burdens on Exelon, beyond what is required by Section 316(a), and effectively deny Exelon the right provided by Section 304.141(c) to obtain Section 316(a) relief. The fact that specific measures for implementing 304.121(c) may have not been adopted is not sufficient justification for denying Exelon that right.

Moreover, even if Exelon were to agree to proceed with seeking relief through the adjusted standard or site specific rulemaking process, it is highly questionable that such relief, if granted, would survive USEPA review. As expressed in the letter dated October 6, 2011, regarding Ameren's Coffeen Plant, USEPA has "significant concerns regarding the process for granting thermal relief by the [Board and Illinois EPA]."⁸ As detailed in its letter, the scope of USEPA's concerns is broad enough to encompass issues raised by the ATS Petition and the Board's October 18, 2012 Order denying the petition.

In short, there is a need for Illinois EPA and the Board to address the deficiency in the Board's rules and for a process to be established by which applicants for alternate thermal limits authorized by Section 316(a) and 304.141(c) can obtain such relief. Until that deficiency is addressed, Exelon effectively will be unable to have its ATS Petition reviewed and unable to obtain the relief authorized by Section 304.141(c) of the Board's rules. In light of the fact that Exelon has complied with the requirements of Section 304.141(c) to show that, under Section 316(a), alternate limits should apply to thermal

⁸ See Exhibit 2, Letter from USEPA Region 5 to Marcia T. Willhite, Illinois EPA, regarding Ameren Coffeen Power Station NPDES Permit No. IL0000108 (Oct. 6, 2011).

discharges from the Plant, to deny the Plant authorization to operate pursuant to those alternate limits while the regulatory deficiency is addressed would impose an arbitrary and unreasonable hardship on the Company.

VI. COMPLIANCE PLAN AND CONDITIONS

Generally, a variance petitioner is required to commit to a detailed description of its plan to achieve compliance with the requirement from which the variance is sought during the term of the variance. However, under certain special circumstances a detailed plan calculated to achieve compliance with existing Board rules may not be required. (*Commonwealth Edison Co. v. Illinois EPA*, PCB 91-29 (Nov. 21, 1991), available at <http://www.ipcb.state.il.us/documents/dsweb/Get/Document-21995>.) Exelon's compliance plan is to submit its 316(a) Demonstration for Quad Cities in accordance with the process adopted to implement Section 316(a), once those measures are adopted. The 316(a) Demonstration will support the issuance of alternate thermal limits for the Plant, in lieu of limits mandated by the Board's generally applicable thermal requirements, from which Exelon is seeking a variance. Exelon believe that the five-year variance period should provide sufficient time for Illinois EPA and the Board to adopt corrective measures and for Exelon to have its Section 316(a) Demonstration considered and ruled upon.

Exelon suggests that the variance be subject to following specific conditions:

1. During the variance period, the monthly temperature standards set forth in § 303.331 shall apply to discharges from the Quad Cities Station, provided that Quad Cities Station may exceed such standards by 3° F for no more than 219 hours (2.5%) per calendar year, except that during July, August and September the temperature standards may be exceeded by up to 5° F for no more than 131.4 hours of the 219 hour annual allotment.

2. During the variance period, the mixing zone for the Quad Cities Station must not contain more than 34% of the cross-sectional area or volume of flow of the Mississippi River.
3. Upon the adoption of measures in Illinois to implement review and consideration of applications for alternate thermal limits under Section 316(a) of the Clean Water Act, Exelon shall submit a 316(a) Demonstration for Quad Cities Station, in accordance with such measures.
4. The variance expires on the earlier of December 20, 2017 or the date on which Exelon's application for alternate thermal limits under Section 316(a) of the Clean Water Act for the Quad Cities Station is ruled upon.

VII. ENVIRONMENTAL IMPACT

A discussion of environmental impacts associated with allowing the Quad Cities Station to discharge in accordance with the discharge limitations sought in this variance is presented in detail in the ATS Petition and the 316(a) Demonstration for Quad Cities Station attached to the ATS Petition.

The 316(a) Demonstration explains that Quad Cities Station became operational in 1973 and has been operating in its present mode since 1984. As detailed in Appendix A and Appendix E to the 316(a) Demonstration, biological life in the Quad Cities Station receiving waters have been the subject of extensive and continuing sampling, monitoring and analysis during much of the plant's operating life. As a result there is a vast amount of data and information available from which to assess the impacts of Quad Cities Station's operations on the Mississippi River.

Exelon's 316(a) Demonstration includes: (1) a detailed description of the characteristics of the receiving waters for Quad Cities Station's thermal discharge – Pool 14 of the Mississippi River – including hydrology, geology, water quality, biology and anthropogenic influences; (2) a prospective (predictive) analysis of the effects on the

balanced indigenous community of fish, shellfish and wildlife (“BIC”) of thermal discharges from the plant under the alternate standards proposed by Exelon; (3) a retrospective evaluation on the BIC of historical thermal discharges from the Quad Cities Station; (4) a detailed description of Quad Cities Station and its operations; and (5) Quad Cities Station’s Data Collection Programs.

As set forth in the studies and supporting materials presented in the 316(a) Demonstration, Quad Cities Station’s historical operations have not resulted in appreciable harm to the BIC of Pool 14, and operations under the alternate thermal limits proposed by Exelon in the ATS Petition (and as conditions to its requested variance) will assure the protection and propagation of the BIC, going forward.

Importantly, the conclusion that past operations have not caused appreciable harm to the BIC of Pool 14 relates not only to historical operations under the Board’s generally applicable regulations, but also to operations similar to those that would be authorized by Exelon’s proposed alternate limits. At various times since the plant began operating, and particularly in recent years, in response to periods of elevated (weather-related) ambient River temperatures and low River flow conditions, Quad Cities Station has operated in a manner that has caused the Station to exceed the 87.6 hours/year excursion hour limit and the 3° F excursion zone temperature cap set by the Board’s generally applicable regulations. For example, during the Summer 2006, the Station used about 223 excursion hours and exceeded the monthly maximum temperature standard by up to 5° F during a portion of the excursion hour period. In addition, on occasion the Mississippi River flow has been less than 16,400 cfs, when the plant was operating at or near full capacity,

which, according to modeling studies would have caused the Zone of Passage related to the Quad Cities mixing zone to be less than 75% of the Mississippi River flow.

Thus, the biological communities in the receiving waters for the Plant's discharges have been exposed to thermal conditions very similar to conditions that would result from the alternate limits proposed by Exelon in the ATS Petition (and in this variance request).⁹ In connection with conducting the studies supporting the 316(a) Demonstration, Exelon's consultants were able to review *actual* sampling data obtained during and following these periods of increased excursion hour events, elevated temperatures above the 3° F cap, and decreased zone of passage conditions and have assessed effects on the biological communities resulting from these thermal conditions. The fact that the consultant's retrospective assessment concludes that the abundance trends of indigenous species in Pool 14 provide no evidence of an effect of the thermal discharge over the life of the Plant's operations shows not only that past operations have not caused appreciable harm, but also that the standards proposed in the ATS Petition (and this variance request) will not be a threat to the BIC of Pool 14 in the future.

In addition to demonstrating that historical operations have not harmed the BIC and that the proposed alternate standards will protect the BIC, the 316(a) Demonstration addresses whether operations under the alternate standards could affect endangered species. There is one federally endangered species of mussel, the Higgins' Eye pearly mussel, in Pool 14. The Higgins' Eye mussel is found in several beds in Pool 14, including, the Cordova Bed, which is located about 1 mile downstream of the Station. The Cordova Bed has been designated an Essential Habitat for the Higgins' Eye mussel.

⁹ In fact, as explained in the 316(a) Demonstration Report, Exelon limited its request for increased excursion hours to reflect the Station's past operating history.

In response to concerns regarding possible impacts to the Cordova Bed as a result of Station operations under Exelon's proposed alternate limits, Exelon consulted with USFWS, beginning in 2008. With USFWS's guidance, Exelon prepared a Habitat Conservation Plan ("HCP"). The HCP was approved by USFWS and an Incidental Take Permit covering possible impacts associated with the alternate standards was issued by USFWS in August 2010.¹⁰ The Incidental Take Permit authorizes possible impacts to individual mussels that might occur as a result of Exelon's proposed alternate thermal limits (the nature of which, is not expected to be acute, but rather, at most, would be non-lethal, temporary stress), provided Quad Cities Station complies with and implements the HCP. In addition to requiring implementation of a thorough and comprehensive mussel sampling and monitoring program, the HCP provides for innovative measures designed to propagate the endangered mussels. Through the HCP/Incidental Take Permit process, the Station has satisfied the requirements of the Endangered Species Act.

In addition to requesting alternate standards that would increase the number of available excursion hours and the maximum temperature cap during excursion hour events and decrease the Zone of Passage for the Plant's mixing zone, Exelon ATS Petition (and variance request) is also seeking to modify the method by which excursion hours are tracked. 35 Ill. Adm. Code § 303.331 limits the number of excursion hours to "1% of the hours in the twelve month period ending with any month." The rolling 12-month method is intended to protect against the possibility (inherent in the calendar year method) that periods during which relaxed limits are allowed will occur back-to-back

¹⁰ The Habitat Conservation Plan and the Incidental Take Permit are attached as Exhibit 3 and Exhibit 4, respectively.

during the months of December and the ensuing January, The concern underlying the calendar year method is that using a calendar year to track excursion hours, in effect, could double the length of time biota would be exposed to excursion hour temperatures, if substantial periods of excursion hour operations were conducted in late December and then again in early January.

The 316(a) Demonstration explains that the theoretical concern with tracking excursion hours by calendar year does not apply in the case of Quad Cities Station's operations. Excursion hours have been used by the Plant only in the March-September timeframe. It is unlikely that circumstances will arise that would require that the Plant use *any* excursion hours in December or January, and it is almost certain that there will not be any extended periods of excursion hour operations during these months. Thus, there is no potential that the harm that the rolling 12-month method is intended to protect against will occur as a result of the Station's operations.

VIII. CONSISTENCY WITH FEDERAL LAW

There are no applicable federal laws or regulations that preclude granting this variance request. Indeed, this request is driven, in part, by USEPA's concerns regarding the process by which thermal relief allowed by Section 316(a) is addressed in Illinois. The variance is needed to avoid an arbitrary and unreasonable hardship to Exelon that would result from denying Exelon the right to obtaining alternate thermal limits for Quad Cities Station while Illinois EPA and the Board addresses the Section 316(a) process deficiencies.

To the extent there are concerns regarding discharges from Quad Cities Station allowed by the requested variance potentially affecting federally-protected endangered

species, Exelon has addressed these concerns in coordination with the USFWS, as discussed in Section VII above.

IX. WAIVER OF REQUEST FOR HEARING

Pursuant to 35 Ill. Admin. Code § 104.204(n), Exelon waives its right to a hearing on this Petition.

X. AFFIDAVIT IN SUPPORT

In support of this Petition, Exelon is filing simultaneously herewith the Affidavit of John R. Petro.

XI. CONCLUSION

In summary, Exelon is requesting the Board to grant a variance to allow Quad Cities Station to discharge heated effluent in accordance with alternate thermal limits that are supported by Exelon's Section 316(a) Demonstration for the Plant, while procedures are put in place to implement Section 316(a) in Illinois. Section 304.141(c) of the Board's rules give Exelon a clear right to obtain relief under Section 316(a); until implementing procedures are adopted, Exelon is being deprived of that right.

The 316(a) Demonstration shows that discharges at the levels proposed during the period of the variance do not raise environmental or public safety concerns. Under the circumstances, to require that the Plant comply with the generally applicable thermal standards while the procedural deficiency is corrected imposes an arbitrary and unreasonable hardship on Exelon.

WHEREFORE, Petitioner, Exelon Generation LLC, respectfully requests that the Board grant Exelon the variance requested herein and order Illinois EPA to modify Quad Cities Station's NPDES Permit consistent with the variance.

Respectfully submitted,

EXELON GENERATION LLC

Dated: December 19, 2012

By:



One of its attorneys

Alan P. Bielawski
Jason E. James
SIDLEY AUSTIN LLP
One South Dearborn
Chicago, Illinois 60603
(312) 853-8662 (phone)
(312) 853-7036 (fax)

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

EXELON GENERATION LLC,)
Petitioner,)
v.)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
Respondent.)

PCB 13-31
(Variance-)

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DEC 19 2012
STATE OF ILLINOIS
Pollution Control Board

AFFIDAVIT OF JOHN R. PETRO

I, John Petro, being first duly sworn on oath, depose and state as follows:

1. I am currently employed as the Principal Environmental Specialist, Exelon Generation Regional Headquarters. I have been employed by Exelon, or its predecessor companies, for the past 38 years. In my present position, I am responsible for day to day governance and oversight of environmental programs at Exelon's Nuclear Fleet, with a particular focus on NPDES Permit monitoring and compliance activities. I received a B.S. in Biology and Chemistry from Illinois Benedictine University in Lisle, Illinois in 1973.

2. I participated in the preparation of the Petition for Variance, dated December 19, 2012, and the 316(a) Demonstration for the Quad Cities Nuclear Station ("316(a) Demonstration"), the Habitat Conservation Plan ("HCP") and the Incidental Take Permit ("ITP") mentioned in the Petition for Variance.

3. I have read the Petition for Variance, dated December 19, 2012, and based upon my personal knowledge and belief, the facts stated therein regarding Quad Cities Nuclear Station, the 316(a) Demonstration, HCP and ITP are true and correct.

FURTHER AFFIANT SAYETH NOT

Handwritten signature of John R. Petro

John R. Petro

Subscribed and Sworn to before Me

This 19th Day of Dec, 2012

Handwritten signature of Donna F. Manheim

OFFICIAL SEAL
DONNA F. MANHEIM
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 9/28/2014

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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STATE OF ILLINOIS
Pollution Control Board

EXELON GENERATION LLC,)
)
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)
 v.)
)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

PCB 13-31
(Variance-)

CERTIFICATE OF SERVICE


I, the undersigned, certify that I have served the attached "Petition for Variance" of Exelon Generation LLC by hand delivery upon:

Office of the Clerk of the Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

Copies of these filings were also sent to the following by U.S. Mail:

Division Chief of Environmental Enforcement
Office of the Attorney General
100 West Randolph Street, Suite 1200
Chicago, Illinois 60601

Dated: December 19, 2012



Jason E. James

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