

Exelon Generation Company, LLC  
Byron Station  
4450 North German Church Road  
Byron, IL 61010-9794

www.exeloncorp.com

May 30, 2006

LTR: BYRON 2006-0064  
File: 1.10.0101

Ms. Beverly Booker  
Illinois Environmental Protection Agency  
Bureau of Water, CAS #19  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Subject: Byron Station  
Response to Violation Notice M-2006-02007

Reference: Letter from Illinois EPA, "Violation Notice: Exelon Generation –  
Byron Station," dated April 12, 2006

Dear Ms. Booker:

In the referenced letter, the Illinois Environmental Protection Agency (Illinois EPA) issued a Violation Notice to Exelon Generation Company, LLC (Exelon) regarding groundwater quality and discharging wastewaters without an NPDES permit at Byron Station.

At the outset, we want to underscore that this is not the typical environmental enforcement case, where the Illinois EPA identifies an environmental problem through the issuance of a Violation Notice and the respondent only then provides information to the agency. The Violation Notice is based on tritium-sampling results that Exelon obtained on its own initiative and promptly provided to the Illinois EPA during the February-March 2006 time period. The samples were provided to the Illinois EPA as part of Exelon's voluntary disclosures to the agency, following Exelon's identification of elevated tritium levels at Braidwood Station. Given Exelon's voluntary and pro-active efforts to date to identify, disclose and promptly propose responsible solutions to the tritium release, and given the fact that the tritium release has not impacted off-site soil or groundwater, we consider that this matter can be fully resolved without a formal enforcement referral.

The enclosure to this letter contains Exelon's response to the Violation Notice. The response addresses the alleged violations and describes Exelon's actions to date: to assure the integrity of the circulating water blowdown line vacuum breakers/vaults; to monitor and assess groundwater characteristics, impacts and movement; and to inform the public and regulators, including the Illinois EPA. It also includes Exelon's ongoing and future plans to address the tritium levels at issue in this matter.

Pursuant to Section 31(a)(2) of the Environmental Protection Act, Exelon requests a meeting with the Illinois EPA to discuss this matter. We will contact the Illinois EPA to arrange a meeting.

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This written response is being submitted within 45 days of Exelon's receipt of the Violation Notice. By submitting this response, Exelon is not admitting that it has violated the Illinois Environmental Protection Act or the regulations of the Illinois Pollution Control Board. If you have any questions about this response, please contact Kenneth Ainger at 630-657-2800.

Respectfully,



David M. Hoots  
Site Vice President  
Byron Nuclear Generating Station

Enclosure

VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

## ENCLOSURE

### RESPONSE TO VIOLATION NOTICE M-2006-02007

#### **Violation Notice Allegations**

Violation Notice No. M-2006-02007 alleges the following:

1. Violations of Section 12 of the Environmental Protection Act (Act), the General Prohibition Against Use Impairment of Resource Groundwater, based on sampling results of standing water in vacuum breaker vaults on February 14, 2006;
2. Violations of Section 12 of the Act, the General Prohibition Against Use Impairment of Resource Groundwater, based on sampling results above background in two onsite monitoring wells reported to the agency on March 30, 2006;
3. That Byron Station discharged wastewater containing contaminants from areas other than the permitted outfall points on February 14, 2006, citing Act Sections 12(a) and (f) and 35 IAC 309.102(a);
4. That Byron Station failed to prevent or mitigate the discharge of wastewater containing contaminants from areas other than permitted outfall points on February 14, 2006, citing Act Sections 12(a) and (f), 35 IAC 306.102(a) and (b), 35 IAC 309.102(a) and NPDES Permit Std. Conditions 1, 4 and 5; and
5. That Byron Station failed to provide notification of noncompliance to the IEPA on February 14, 2006, citing Act Sections 12(a) and (f), 35 IAC 309.102(a) and NPDES Permit Std. Conditions 12(e) and (f).

Exelon disputes the listed allegations.

Nevertheless, in Section I below, Exelon discusses the actions taken in response to the identification of elevated tritium levels. These actions included: temporarily discontinuing periodic radioactive discharges into the circulating water blowdown line; measures to assure the integrity of the vacuum breakers and vacuum breaker vaults when periodic radioactive discharges into the circulating water blowdown line were resumed; notifying the public and regulators; and investigating and determining relevant site characteristics and tritium-impacted groundwater. In addition, Section II below, which will constitute a proposed Compliance Commitment Agreement, pursuant to Act Section 31(a)(2), Exelon will submit an investigation report that documents the characterization of the tritium-impacted groundwater on the Property (i.e., the NRC licensed site boundary) and demonstrates that it will not migrate off the Property above 200 picocuries per liter (pCi/L). Exelon considers that the investigation report, in addition to the actions already implemented, will adequately address and resolve the alleged violations.

## EXELON RESPONSE

### I. Actions Taken to Date

Water was found in five of the six vacuum breaker vaults that are installed on the circulating water blowdown piping. The water was sampled and analyzed by our on-site chemistry laboratory on February 3, 2006, as well as an off-site environmental laboratory. The results of the offsite laboratory analysis, received on February 14, 2006, indicated that all five vaults had tritium concentrations above background levels. The results ranged from 1000 pCi/L to 80,000 pCi/L. Upon identification, the water in the vaults was removed and placed in the circulating water basin, which is a permitted discharge location.

Following the identification of the water and subsequent sample results, discharges of liquid radioactive effluents into the circulating water blowdown line were discontinued at Byron Station on February 15, 2006 pending an investigation and identification of corrective actions. Initial actions included increased inspections (i.e., weekly) of the vacuum breaker vaults and inspections of the soil covering the circulating water blowdown piping for signs of leakage.

To prevent future potential impact to groundwater from the vacuum breaker vaults, an impermeable barrier was installed. The drain line in the vaults was filled in with grout and a sealant was placed on the vault floor and sides. These measures will assure that tritiated water will not leak out of the vaults. Inspections of the vaults are conducted on a weekly basis to identify any leakage from the vacuum breakers and to initiate corrective actions to stop the leakage. Procedures for performing radioactive effluent discharges have been revised to require an inspection of the vacuum breaker vaults prior to and following a discharge. Any water identified in the vaults following a radioactive effluent discharge would be removed.

On April 20, 2006, periodic radioactive effluent discharges into the circulating water blowdown line were resumed. Continuous monitoring of the vacuum breakers during these periodic discharges has verified no leakage from the vacuum breakers.

#### *Site Characterization*

On February 21, 2006, Exelon issued a contract for a groundwater assessment in the area of the circulating water blowdown line of Byron Station to an environmental consulting company, directed at determining relevant site hydrogeology and tritium-impacted groundwater location and movement.

A series of wells was drilled to determine whether tritium was present in groundwater. An initial set of 15 shallow wells (between 15 and 30 foot depths) was placed, with two located near each of the six vacuum breaker vaults and three near the end of the piping where a previous leak had occurred in 1986. Only two of the wells contained water and both were located near the end of the blowdown pipeline. Sample results for these two wells indicated less than detectable levels of tritium.

Additional monitoring wells were installed in locations that would provide characterization of leakage from the vacuum breaker vaults as well as from the blowdown piping. Any

discharge of wastewater that previously occurred was from drains located in the bottom of the vacuum breaker vaults. As the wells were drilled, samples were obtained and sent to an environmental laboratory for analysis. On March 30, 2006, it was confirmed that two of the wells near vacuum breakers 3 and 4 contained water with tritium levels above background. The well located near vault number 3 contained approximately 450 pCi/L and the well near vault number 4 contained approximately 3700 pCi/L.

There are two aquifers present along the blowdown pipeline. The upper aquifer is located to a maximum depth of 140 feet and a lower aquifer at a depth of approximately 200 feet. The lower aquifer is what local residents utilize for drinking water. Both of the wells that indicated tritium levels above background were located in the upper aquifer and are located on Exelon property. Samples were taken of nine residential wells, closest to the blowdown piping. Additionally, periodic sampling is conducted on other residential wells as part of the Byron Station Radiological Environmental Monitoring Program (REMP). All of the results from these samples show no detectable levels of tritium in the groundwater. The results of all the well monitoring performed to date indicate no tritium in groundwater off Exelon property.

The characteristics of the groundwater (i.e., flow direction and velocity) in the area, along with the relatively low concentrations of tritium found in the wells, indicate the levels of tritium in groundwater samples would be less than detectable prior to impacting private wells of nearby homes.

#### *Notification and Outreach*

Upon identification of the elevated tritium concentrations, Exelon notified the Nuclear Regulatory Commission and the Illinois Emergency Management Agency and provided updates on a regular basis. The Illinois EPA was contacted via telephone on February 14, 2006, at which time the sample results from the water found in the vacuum breaker vaults were communicated. The results for groundwater wells AR-3 and AR-4 were obtained on March 30, 2006, and were communicated to the Illinois EPA via telephone within 24 hours of obtaining the information.

Information about the tritium leak was communicated to the Byron Station workforce on March 29 and March 31, 2006. News releases were issued on February 15 and March 31, 2006, informing the public of the tritiated water identified in the vacuum breaker vaults and the tritium-impacted groundwater. A Community Information Night was held on May 11, 2006 which provided information associated with plant operations as well as the tritium investigation.

#### Section II – Future Actions

By this response, Exelon is proposing to address the alleged violations through a Compliance Commitment Agreement. Exelon will submit an investigation report to the Illinois EPA by July 31, 2006 that documents the characterization of the tritium-impacted groundwater on the Property and demonstrates that it will not migrate off the Property at a concentration above 200 pCi/L. The investigation report will also describe monitoring of groundwater sampling wells to verify natural attenuation of the tritium-impacted groundwater on the property.

Byron Station is also participating in the Exelon fleet-wide tritium assessment initiative. This involves a comprehensive review and risk analysis of all systems that carry or

contain tritium. This initiative is designed to prevent future unintentional releases of radioactive liquids. Five additional groundwater sampling wells were installed around the perimeter of the plant and will be periodically sampled to support the fleet-wide effort.

### Section III – Response to Violation Notice Allegations

Exelon is proposing to address the alleged violations through a Compliance Commitment Agreement discussed in Section II above. We are requesting a meeting to discuss this approach with you further. By the proposed Compliance Commitment Agreement, however, we are not waiving our legal defenses and arguments, which include, but are not limited to the following.

1. Byron Station operates under a license issued by the federal Nuclear Regulatory Commission (NRC) and is, thereby, subject to NRC regulation. Under the Atomic Energy Act and regulations and case law interpreting the Act, the federal government has exclusive authority to regulate the operation of nuclear plants, which includes the discharge of radioactive effluents from those plants. Accordingly, NRC regulations, rather than Illinois statutes and regulations, apply to the tritium releases at issue in this matter.
2. In addition, there is a second and independent basis for disputing the NPDES permit related claims. Under Section 12(f) of Illinois' Environmental Protection Act, 415 ILCS 5/12, permits are only required insofar as the Federal Pollution Control Act (also known as the Clean Water Act) (CWA) requires such permits. The CWA requires permits for the discharges of pollutants to "navigable waters," which do not include groundwater. To the extent that the allegations at issue relate to discharges into groundwater, it follows that no NPDES permit is required for such discharges and that no related permit violations can be found.
3. Exelon reserves the right to set forth its factual and legal defenses to the alleged violations in more detail at a future time.

### Section IV – Conclusion

By this response, Exelon seeks to enter into a Compliance Commitment Agreement with the Illinois EPA in order to address and resolve the Violation Notice allegations, which we plan to discuss further with the Illinois EPA in more detail at an upcoming meeting. We are confident that the responsive actions already implemented, as well as our future actions, will assure that the tritium-impacted groundwater on the Property poses no threat to the public safety or the environment and will prevent future releases of tritium into the groundwater.