

Steven Orth

From: christine.arndt@exeloncorp.com on behalf of Bradley.Fewell@exeloncorp.com
Sent: Wednesday, May 28, 2008 2:01 PM
To: Steven Orth; Jared Heck
Subject: Quad Cities Station Letter Re: Response to Violation Notice M-2008-02001
Attachments: SVP-08-032.PDF

Importance: High

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SVP-08-032

May 22, 2008
Ms. Beverly Booker
Illinois Environmental Protection Agency
Bureau of Water, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Subject: Response to Violation Notice M-2008-02001, Quad Cities Nuclear Power Station

Reference: Letter from Illinois EPA (M.S. Garretson) to Exelon Generation Company, LLC (T. Tulon), "Violation Notice: Exelon Generation - Quad City Station, Violation Notice M-2008-02001," dated April 8, 2008

Dear Ms. Booker:

This letter is in response to the Illinois Environmental Protection Agency's ("IEPA") Notice of Violation dated April 8, 2008 ("NOV"), regarding Quad Cities Generating Station ("Quad Cities"). The NOV relates to tritium detected in groundwater on Quad Cities' property. This letter provides updated and complete information on the status of site activities regarding the tritium samples at issue.

As discussed below, Exelon Generation Company, LLC ("Exelon") will continue to cooperate with IEPA and will continue to provide information regarding tritium levels and Exelon's investigative and recovery activities at Quad Cities. Exelon values and appreciates IEPA's technical views on the investigation and responsive activities at Quad Cities, and will continue to consult with the IEPA for those views. As also explained below, however, because tritium is exclusively a radioactive byproduct of nuclear power generation, it is Exelon's position that State regulation of tritium levels, including under the authority contained in IEPA's NOV, is preempted by federal law and regulation. Consequently, Exelon respectfully asserts that IEPA has no jurisdiction to require Exelon to pay any fine, or enter into any binding compliance agreement, regarding tritium or tritiated water at Quad Cities.

Background

As a result of Exelon's 2006 fleet wide tritium assessment, Exelon installed 25 groundwater monitoring wells at Quad Cities between May and November 2006. Exelon consulted independent environmental professionals and the IEPA regarding well placement. Exelon shared sample results and its analysis of the data with IEPA in September 2006. As part of its continuing environmental monitoring and sampling program, and to better characterize on-site

tritium concentrations detected during and following the fleet wide assessment, Exelon installed four additional sampling points at Quad Cities during the week of October 1, 2007. On October 5, 2007, Exelon voluntarily contacted IEPA regarding the detection of higher than expected tritium levels from sampling points in the vicinity of the Service Building/Turbine Building interface. Ten additional sampling points were installed in the vicinity of this interface to characterize the tritium levels.

After obtaining additional elevated sample results on October 12, 2007, Exelon notified IEPA as well as Illinois Emergency Management Agency ("IEMA"). Additionally, Exelon submitted documentation regarding the matter to the IEPA and IEMA, and participated in a follow-up telephone conversation with IEPA on October 15, 2007. Quad Cities' representatives met with IEPA and IEMA at IEPA's offices on October 30, 2007, to discuss the investigative activities performed to date, related results and planned actions.

Exelon's Response to the On-Site Tritium

Notification and Outreach

Currently, Exelon samples a total of 52 locations at Quad Cities, including groundwater wells, temporary groundwater sampling points, and surface water bodies for tritium. The sample results from all wells at the site boundaries continue to indicate that no measurable amount of tritium is off plant property, or is in the adjacent surface water body.

Upon identification of the elevated tritium concentrations, Exelon notified the Nuclear Regulatory Commission ("NRC") and IEMA. Exelon continues to provide both agencies with updates on a regular basis.

In addition to these notifications, Exelon issued a press release on October 15, 2007, made courtesy contacts with local officials, sent a letter to Quad Cities' neighbors dated October 16, 2007, conducted door-to-door visits with immediate neighbors, and communicated to site personnel on Monday, October 15, 2007. A meeting with the Quad Cities neighbors was held on Saturday, October 20, 2007.

2007 Identification and Response

Based upon the sampling results obtained in October 2007, Exelon assembled a team to investigate the source of the increased concentrations. Review of Quad Cities' processes concluded that the source is likely one of eight underground pipes that contain tritiated water and that are primarily located directly under plant buildings. These pipes are more than 300 feet from the nearest plant boundary and contain no NPDES-regulated waste water. Exelon developed a plan to augment the well monitoring program to determine the precise source of the leak. The plan consisted of systematic investigative activities, such as: process knowledge and pipe testing methodologies, including the use of guided wave technologies (which send sound waves down a pipe to look for anomalies), tracer gas methods (which inject helium into the pipe and look for seepage into vent taps), as well as pipe isolation activities.

As a result of these extensive investigative activities, Exelon has determined that the most likely source of the leak is the Unit 1 Residual Heat Removal ("RHR") pump suction from the Contaminated Condensate Storage Tank ("CCST"). The pipe has been plugged and Exelon is currently proceeding with verification measures to validate this conclusion.

Exelon's conservative efforts to ensure stabilization of groundwater in this area have included the installation of a recovery well in the Service Building. After consultation with IEPA, pumping commenced in February 2008. As of May 20, 2008, 75,000 gallons had been pumped to plant systems and discharged per NRC requirements through existing NPDES conveyances.

Coordination with IEPA

Since the identification of higher than expected tritium concentrations in October 2007, Exelon has voluntarily worked with IEPA regarding this matter. Coordination with the IEPA has included, but is not limited to investigation strategies, monitoring plans, and source control approaches.

Exelon's Planned Future Actions

Going forward, Exelon plans to continue removing groundwater from underneath the Quad Cities Service Building by pumping from inside the Service Building. Exelon will maintain enhanced groundwater sampling activities to monitor tritium concentrations in the area of concern. Further, Exelon will continue to consult with IEPA and evaluate the need for additional recovery wells to optimize stabilization efforts based upon new data as it becomes available.

The Unit 1 Residual Heat Removal ("RHR") pump suction line validation testing is currently in progress and is expected to be complete by June 2008. If the testing confirms that this line is leaking, then it will remain out-of-service until such time as repair or replacement activities can be initiated, or intermittently used if required by plant conditions. If RHR line testing confirms this line is not leaking, Exelon will continue to develop and refine plans and actions to locate and repair other potential sources.

IEPA Allegations

The April 8, 2008 NOV alleges that the on-site groundwater sample results for tritium at Quad Cities, which Exelon voluntarily provided to IEPA, constitute violations of Section 12 of the Environmental Protection Act, specifically relating to Illinois' Groundwater Standards for tritium.

NRC Regulation

The NOV provided to Quad Cities is based exclusively on test results for tritium; no other contaminant is mentioned or named. Consequently, the tritium at issue constitutes "byproduct material" pursuant to the federal Atomic Energy Act ("AEA"). See 42 U.S.C. § 2014(e); 10 CFR § 20.1003. The AEA confers on the NRC exclusive authority over the radiological hazards of byproduct, source, and special nuclear material and activities associated with such materials, including the construction and operation of nuclear power plants. See 42 U.S.C. §

2011 *et seq.*; see also *Brown v. Kerr-McGee Chemical Corp.*, 767 F.2d 1234, 1242 (7th Cir. 1985); *Pacific Gas & Electric v. State Energy Resources Conservation and Development Commission*, 461 U.S. 190 (1983), and *Northern States Power Company v. State of Minnesota*, 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972). The Seventh Circuit has repeatedly held that all attempts by a State to regulate the radiological hazards of nuclear power are preempted by the AEA. *Brown v. Kerr-McGee Chemical Corp.*, 767 F.2d at 1240; *Kerr-McGee Chemical Corp. v. City of West Chicago*, 914 F.2d 820, 825-26 (7th Cir. 1990). Furthermore, while we recognize that the NRC ceded some limited authority to the State of Illinois by agreement in 1987, that agreement and the authorizing section of the AEA specifically provide that the NRC retained authority over “the construction and operation of any production or utilization facility.”¹ See Illinois Agreement, Art. II.A.; 42 U.S.C. § 2021(b).

IEPA has jurisdiction over purely non-radiological hazards of nuclear power generating activities. However, when the radiological hazards are inseparable from the non-radiological hazards – for example, when tritiated water is inseparable from other potential contaminants of concern – the State does not have jurisdiction to regulate the non-radiological hazards. As the Seventh Circuit stated in *Kerr-McGee*, “Such state law remedies, though not attempts to regulate the radiation hazards of byproduct material, nonetheless interfere with the NRC’s ability to choose the method of disposal that, in light of radiation, non-radiation and economic considerations, is most appropriate.” 767 F.2d at 1242 (emphasis in original). In *Kerr-McGee*, the Seventh Circuit held that because non-radiation hazards at a cleanup of a monazite ore processing plant could not be separated from radiation hazards, those state law remedies were preempted. *Id.*

IEPA has suggested that there may be some distinction between its ability to regulate radiological hazards in groundwater and in surface water. We have looked carefully at that issue and can find no legal basis for it. The court decisions do not speak in terms of the location of the hazard, or whether state law on its face permits regulation of the non-radiation hazard, but the nature of the hazard — radiological or non-radiological, and whether the two are separable or not. In *Kerr-McGee*, the Seventh Circuit did not look at the location of the hazard, but whether the non-radiation hazards (for example, barium sulfate, sodium phosphate, ammonia and other non-radioactive contaminants) could be separated from the radiation in the waste. *Id.* The fact that Illinois law may treat the issues differently does not affect whether federal law preempts the ability of the State to regulate a radiological hazard. The NRC’s regulations establish tritium emission limits through the NRC’s overall dose limit for members of the general public, which is 100 mrem annually. 10 C.F.R. § 20.1301(a). Consequently, any attempt by the State to enforce

¹ The AEA and the corresponding NRC regulations define “utilization facility” to mean “any equipment or device ... determined by rule of the Commission to be capable of making use of special nuclear material ... in such manner as to affect the health and safety of the public.” 42 U.S.C. § 2014(cc) and 10 CFR § 150.3. Courts have interpreted nuclear power plants to fall within this definition. See, e.g., *Jersey Cent. Power & Light Co. v. Township of Lacey*, 772 F.2d 1103, 1104 (3rd Cir. 1985); and *Public Service Co. of New Hampshire*, 582 F.2d 77, 82 (1st Cir. 1978). See also 10 CFR § 50.2 (in the licensing context, defining “utilization facility” to mean “any nuclear reactor other than one designed or used primarily for the formation of plutonium or U-233.”).

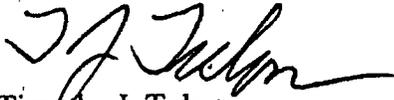
any tritium standard is preempted by the AEA, unless there is some express distinction under federal law that would permit state regulation of the radiological hazards of groundwater. There is no such distinction in any of the case law.

Conclusion

Exelon will continue to provide IEPA with updated information regarding the steps taken and planned to address the tritium concentrations at Quad Cities. Exelon remains fully committed to resolving this issue and will continue to communicate with IEPA. Exelon is available to meet with IEPA in the near term and periodically thereafter to discuss the status of this matter and to address IEPA's questions or concerns.

We welcome any comments or suggestions you may have regarding this issue. Please contact Ms. Vicki Neels at 309-227-3200 or Mr. Zigmund Karpa at 610-765-5841 if you have any questions or comments.

Respectfully,



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

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED