



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

October 27, 2008

Mr. Frank Barber
[HOME ADDRESS DELETED
UNDER 10 CFR 2.390(A)]

Dear Mr. Barber,

I was very pleased to speak with you by phone on September 19, 2008. During that conversation you asked several questions. The purpose of this letter is to provide you with the additional information that you requested during our discussion.

General Electric – Morris Issues/Questions

Question: How many test groundwater wells are there around the General Electric (GE) facility that is near the Dresden site? Where are the wells located? How often are they monitored? Does the NRC obtain split samples?

Answer: The GE Morris facility staff monitors the groundwater at eight monitoring wells within the owner controlled area on a quarterly basis. The NRC does not obtain split samples of these wells.

Question: What are the radioactive emissions from the GE site and all of the materials that are released?

Answer: The GE facility staff provides an annual environmental monitoring and effluent report documenting the calculated quantities of principal radionuclides released to the environment. The latest report from 2007 is attached. That report states that the only airborne particulate radionuclide identified on the stack monitor filters was cesium-137. Gaseous radionuclides reported were hydrogen-3 (tritium) and krypton-85. The quantity of tritium and krypton-85 released was calculated using evaporative losses from the fuel basins and air flow rates. The GE staff calculated a resultant maximum dose of 3.9×10^{-7} millirem per year from airborne releases, which is well below the NRC limits specified in 10 CFR Part 20 (100 millirem per year total dose to any member of the public). The licensee releases no liquid effluents from the site. Analysis of surface water samples from the site's sanitary lagoons showed tritium levels below its minimum detectable levels (164 picocuries per liter).

Question: How often does the NRC test/inspect the GE site?

Answer: The NRC conducts two to three inspections annually at GE Morris. These inspections examine areas such as radiation protection, security, maintenance and surveillance of the spent

fuel basin, material inventory, environmental protection, training, quality assurance, and emergency preparedness.

Question: Is there an onsite NRC inspector at the GE site?

Answer: The NRC does not maintain a permanent onsite NRC inspector at GE Morris due to the relatively small size of the facility and the nature of the activities taking place. Routine NRC inspections are performed by staff assigned to the Region III office.

Dresden and Braidwood Issues/Questions

Question: Where did the tritium found in the Thorsen well come from?

Answer: As reported in the Dresden Station Annual Radiological Environmental Operating Reports over approximately the last 10 years, tritium has been identified in the Thorsen well at concentrations ranging from approximately 300 to 900 picocuries per liter. Tritium is present in the Kankakee River at varying concentrations from discharges made by other plant(s) that are located upstream of the Dresden Station (i.e., Braidwood Station). As reported in Dresden's 2007 Annual Radiological Environmental Operating Report, tritium concentrations in the Kankakee River upstream of Dresden Station ranged from approximately 300 to 1100 picocuries per liter (based on quarterly samples).

The source of tritium in the Thorsen well is primarily from Dresden Station's intake of Kankakee River water which is used as plant feedwater and is then circulated through the plant and introduced into the cooling canal system. Water from the cooling canals interacts with the groundwater (shallow aquifer) and then slowly migrates in an easterly direction toward the Thorsen well and back into the Kankakee River.

Question: Will the NRC test a private well (near the Dresden or Braidwood sites or near the Kankakee River) for tritium if the homeowner asks for it?

Answer: The NRC does not routinely conduct testing of private, residential wells or of community drinking water systems. Historically, the NRC has tested residential wells in response to issues that have been identified at facilities licensed by the NRC. In these cases, the NRC's testing was performed to provide independent confirmation of the potential impact of these incidents and to independently verify any spread of radioactive contamination. Consequently, should circumstances arise that lead the NRC to suspect groundwater contamination as a result of an NRC licensed activity, independent testing may be performed if deemed necessary.

The NRC has performed independent and confirmatory measurements in response to tritium contamination issues at the Exelon facilities, including Braidwood and Dresden. Since 2006, the NRC has periodically split samples collected from the Thorsen well with the Dresden Station and independently analyzed those samples as a means to determine the accuracy of the Dresden analyses. The Thorsen well is a sampling location required by the NRC as part of the Dresden Station Radiological Environmental Monitoring Program (REMP). Similarly, the NRC has periodically split REMP required well samples with the Braidwood Station from eight different private wells. NRC and licensee analyses of these split samples have all agreed.

As stated above, the NRC does not normally test private wells independently, other than as split samples with an NRC licensee as part of the NRC required REMP program. In response to issues at the Exelon facilities, the State of Illinois (Illinois Environmental Protection (IEPA) in cooperation with the Illinois Emergency Management Agency (IEMA)) has performed measurements of a number of private, residential wells. As requests have been received, the NRC has referred citizens to these agencies for well testing. Based on location and the potential for impact from an NRC licensed facility, the NRC strives to work with members of the public to resolve their concerns regarding drinking water wells.

Question: How many private wells along the Kankakee River from Custer Park to Dresden have been tested for tritium?

Answer: In our letter to you dated December 2, 2007, we indicated that 18 private wells were sampled and analyzed for tritium by the Dresden Station between November 2004 and September 2005, as part of a Dresden Station special study. All but one of these private wells is located on the westerly bank of the Kankakee River, about one-quarter to one-half mile south of the Dresden Station. We are not aware of other private well testing in the immediate vicinity of the Dresden Station, beyond the wells described here and the wells tested as part of the NRC required Dresden REMP.

As part of the Braidwood Station REMP, drinking water samples are collected and analyzed quarterly from eight private wells located along the Kankakee River near the Braidwood Station cooling water discharge. One sample is also taken at the Braidwood City Hall well. In 2008, one private party has voluntarily withdrawn from the sampling program. So, presently, there are seven private wells and one public well sampled.

Question: How deep are the private wells that are in the Braidwood REMP?

Answer: The NRC does not maintain the depths of private wells sampled as part of the Braidwood REMP, nor does the NRC require that the depths be reported to the NRC. As part of the REMP program, water is sampled from private wells that maybe used for human consumption. The depth and condition of those wells is at the owners' discretion. Although the NRC does not maintain that information, there may be public data available from the State of Illinois or from the counties concerning well locations and depths.

Question: How often does Dresden sample its intake water for tritium? What are the levels of tritium that are evaporating from the Dresden Cooling Lake?

Answer: As part of the Dresden Station NRC required REMP, Kankakee and Des Plaines River water is continuously sampled using a compositor system and analyzed monthly for specified radioactive constituents (gross beta activity and gamma emitting isotopes) and quarterly for tritium. The Kankakee and Des Plaines Rivers are the source of intake water for the Dresden Station.

The concentrations of tritium in the Dresden Cooling Lake follow Kankakee River levels that fluctuate between approximately 800 and 1800 picocuries per liter. Evaporative concentrations would be in that range at 100% humidity on the lake's surface and decrease from that

concentration due to air mixing and wind movements in speed and direction. Given these very low concentrations, offsite doses due to evaporative losses of tritium are negligible.

Question: Does the NRC take samples at Dresden's intake?

Answer: Since 2006, the NRC has periodically split REMP required Kankakee and Des Plaines River water samples with the Dresden Station and independently analyzed those samples as a means to determine the accuracy of the Dresden analyses. NRC and licensee analyses of these split samples have all agreed.

Question: Does anyone monitor the tritium at the Wilmington water intake pumps?

Answer: As part of the Braidwood Station REMP, a composite sampler obtains samples of the river intake water that is processed for eventual use in the Wilmington water supply. The composite sample collective is collected weekly and sent to the independent contact laboratory. The laboratory holds the samples and creates a monthly composite for counting gross beta and a gamma isotopic. The monthly composites are held for making a quarterly composite for tritium analysis. The compositor is maintained by an Exelon contractor who is also responsible for collecting the composite sample. The counting laboratory is a separate Exelon contractor.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter with the address redacted will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If you have any additional questions, please feel free to contact me at (630) 829-9827.

Sincerely,

/RA/

Steven K. Orth, Branch Chief
Division of Reactor Safety

Enclosure:
GE-Morris Letter dated February 21, 2008 (ML080560072)

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