



November 1, 2010

Cindy Bladey
Chief, Rules, Announcements and Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Riverkeeper Comments For Senior Management Review of NRC Groundwater Task Force Report, Docket ID NRC—2010—0302

Dear Mrs. Bladey:

Riverkeeper, Inc. (“Riverkeeper”) hereby respectfully submits the following comments on the above-referenced Docket ID NRC—2010—0302, in regards to the U.S. Nuclear Regulatory Commission’s Groundwater Task Force (“GTF”) Final Report dated June 2010 (“GTF Final Report”). A “senior management review group” (SMRG) has been assembled to review and evaluate the GTF Final Report, and NRC currently seeks comments on various policy issues to inform the SMRG’s assessment and recommendations.¹

Riverkeeper is a not-for-profit organization dedicated to protecting the ecological integrity of the Hudson River. Since its inception in 1966, Riverkeeper has used litigation, science, advocacy, and public education to raise and address concerns relating to the operation of the Indian Point nuclear power plant. At Indian Point, accidental leaks of radioactive water to the environment from degraded plant components have proven to be a persistent problem. Riverkeeper has been actively involved in raising concerns about these leaks as well as the failure of NRC’s regulatory framework to address and prevent such problems. As a party in the Indian Point license renewal proceeding currently pending before the NRC, Riverkeeper plays an integral role in addressing such concerns as they relate to the Indian Point plant.

Riverkeeper participated in the NRC’s “Public Workshop to Discuss Potential Policy Issues Related to Groundwater Protection,” held on October 4, 2010, and was a panelist in relation to Theme 3: Create a More Reliable NRC Response. Riverkeeper appreciates the opportunity to

¹ See Notice of Public Meeting, *Evaluation of the Groundwater Task Force Report: Public Meeting*, Nuclear Regulatory Commission, NRC—2010—0302, 75 Fed. Reg. 57987 (Sept. 23, 2010) (“NRC Meeting Notice”).

participate as a public stakeholder in this ongoing effort to address the regulatory gaps associated with accidental radioactive leaks from nuclear power plants. Below, Riverkeeper offers the following additional thoughts, comments, and specific recommendations for consideration by the SMRG, GTF, and NRC, as these efforts continue.

Riverkeeper looks forward to our ongoing participation as this process moves forward.

Sincerely,

/s

Phillip Musegaas, Esq.
Hudson River Program Director

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- 1. The Nuclear Regulatory Commission (NRC) has failed to provide adequate factual support for its categorization of radioactive water leaks from nuclear power plants as “low risk, high public interest/confidence” events.¹ The decision to presumptively categorize inadvertent leaks of radioactive effluent from nuclear plants as having no public health and safety significance misleads the public and damages the NRC’s credibility in the eyes of the public.**

By framing the issue in this way, the NRC seems to assume that all reported incidents of groundwater leakage and contamination thus far present a low risk to public health and safety, yet the NRC has never explicitly stated the grounds upon which this assumption rests. In fact, the facts surrounding the groundwater leaks at the Oyster Creek and Vermont Yankee plants, as well as the oft cited Braidwood contamination, suggest that the NRC rushed to judgment on the significance of the leaks, in a misguided effort to assure the public that there was little to no risk, before having all the facts at its disposal.

For example, when an underground pipe leak was discovered at Oyster Creek in April 2009, just one month after the plant was granted a 20-year license extension, NRC repeatedly underplayed the significance of the leak, assuring that such leaks did not pose any risks to the public.² However, the problem continued to grow, and about a year later, in May 2010, New Jersey Department of Environmental Protection test results found groundwater contamination from the Oyster Creek plant had spread to the Cohansey aquifer, a major drinking source for South Jersey; tritium was found at over 50 times the federal drinking water standard.³

Similarly, leaks first discovered at the Vermont Yankee nuclear power plant in January 2009 were quickly minimized and categorized as not significant.⁴ The following year, in

¹ See NRC Meeting Notice at 57989. In its solicitation of public comment on the Groundwater Task Force Report, the Notice asks “Should NRC’s programs be modified to ensure greater consistency when addressing low risk, high public interest/confidence issues?”

² See, e.g., Todd B. Bates, *Extent of Tritium Leaks Still Unknown*, ASBURY PARK PRESS (May 17, 2009) (NRC spokesperson stating, just a month after the leak was discovered, that there was “no evidence at this point that there’s any contamination getting off site”); Bob Vosseller, *NRC: Tritium Leaks at Oyster Creek were Handled Properly*, ASBURY PARK PRESS (Sept. 8, 2009) (NRC spokesperson stating that contaminated groundwater is “diluted by vast amounts of water before making its way into Barnegat Bay” and that “drinking water in the area remains safe, and people who enjoy the bay and the creek are not in danger. ‘There is no impact of fish, crabbing or swimming in that vicinity’”).

³ See, e.g., NJ DEP Press Release, *DEP Launches New Investigation into Radioactive Leak at Oyster Creek Nuclear Power Plant* (May 7, 2010), http://www.state.nj.us/dep/newsrel/2010/10_0094.htm; Press Release, *Oyster Creek Leak Worse Than Expected, Threatens Major South Jersey Drinking Water Source* (David Pringle, NJEF; Janet Tauro, GRAMMES) (May 7, 2010).

⁴ See Bob Audette, *VY Powers Down to Repair Leak*, BRATTLEBORO REFORMER (Jan. 9, 2009) (Vermont Yankee official stating that “water leaking from the pipe is ‘only mildly radioactive’ and has not caused any serious contamination issues.”).

January 2010, leaks of unknown origin were discovered when groundwater monitoring wells tested positive for contamination, which, according to Vermont Yankee's owner posed "no threat to the public health and safety."⁵ Within weeks, levels of tritium mushroomed to very high numbers, and despite the failure to even identify the source of leakage, the NRC confidently told the public that the contamination presented no health or safety risks.⁶ Plant officials are still working on mapping and defining this apparently growing plume of contamination, which most recently, has been detected at a former drinking water well tied to a deep underground aquifer, despite NRC's ongoing, consistent assumption and messaging that that the leakage presents "no threat to the public health or safety."⁷

By their very nature, radioactive water leaks into groundwater often result in complex contamination scenarios that require detailed, time-consuming hydrological and geologic analyses. Yet in nearly every initial NRC public disclosure of a radioactive water leak at an operating nuclear plant, the agency states that the leak or contamination presents no risk to public health and safety.⁸ Rather than reassuring the public, the decision often has the opposite effect. In areas where the public living near an operating nuclear plant is well-informed about the plant's operation, such as Indian Point, Vermont Yankee, Oyster Creek and others, this type of "reassurance" tends to result in skepticism and concern that the NRC is taking this action to placate the public and help the licensee avoid criticism. At its worst, this "rush to judgment" threatens to further undermine any remaining public confidence in the NRC on this issue.

Riverkeeper recommends that the NRC consider the following changes to its communications policy on this issue:

- When a leak or historic contamination is discovered at a licensee's facility, the NRC should change its message to the following:
 - "The NRC and the licensee have begun an immediate investigation to determine the extent of leakage and potential contamination. Initial analyses do not indicate there is a risk to public health and safety from this incident. However, the NRC will keep the public informed as new information develops, and will promptly notify the public if the level of risk is found to have increased."

⁵ See Dave Gram, *Vermont Yankee Groundwater Well Tests Positive for Radioactive Isotope for First Time*, LOS ANGELES TIMES (Jan. 7, 2010).

⁶ See, e.g., Susan Smallheer, *Officials Mixed on Latest Yankee Find*, RUTLAND HERALD (Feb. 5, 2010) (NRC spokesperson stating that "[a]lthough the number 774,825 [pico curies] is a very large number, it is still a very low level of tritium contamination and continues to present no public health and safety hazard and no detectable negative impact to the environment" and noting that "no drinking water wells either at the reactor or in the town of Vernon showed tritium contamination, and tests have not picked up any measurable levels in the Connecticut River").

⁷ See Associated Press, *Vt. Yankee Tritium Found in Well Tied to Aquifer*, Bloomberg Business Week (Oct. 8, 2010), <http://www.businessweek.com/ap/financialnews/D9INOV000.htm>.

⁸ For example, immediately following a surprise underground pipe leak at Indian Point, NRC's spokesperson indicated "[t]here is no threat to health and safety." See Annie Correal, *Indian Pt. Broken Pipe Spurs Safety Worries*, NEW YORK TIMES (Feb. 27, 2009).

- The NRC should provide frequent updates to the public, particularly to people living in proximity to the reactor or the leakage location, on the progress of the investigation and plans to remediate any contamination, if applicable.
- The NRC and the licensee must make groundwater sampling information available to the public on the NRC's and the licensee's website in a timely manner. For example, groundwater sampling results should be disclosed to the public as soon as the licensee or contractor conducting the sampling has completed the Quality Assurance/Quality Control (QA/QC) review of the results.⁹
- Clearly communicate to the public which federal and state agencies and officials are involved in the investigation, and what their respective roles and legal/regulatory authority is throughout the process.

2. The Nuclear Energy Institute's (NEI) Voluntary Groundwater Initiative is not an adequate substitute for NRC regulation of radioactive water leaks at nuclear plants.

The NRC cannot continue to rely on the nuclear industry's "Voluntary Groundwater Initiative" to address ongoing and newly discovered radioactive water leaks. This "initiative" is exactly what it purports to be – a purely voluntary scheme that has no teeth to require licensees to do anything. As the GTF characterizes it, "[t]he voluntary industry initiative is neither a requirement nor standard."¹⁰ Without a regulatory requirement, "good actors" will notify the public when a leak occurs or is discovered, however, "bad actors" will have a choice.

The GTF's findings serve to explicitly demonstrate the failure of the voluntary program to adequately address the ever-growing problem of inadvertent leaks at nuclear plants. In particular, the GTF found that:

- while there was increased reporting from licensees of the discovery of leaks and spills that could affect groundwater, such reports "only identify the initial indications of incidents and do not provide information describing the results of activities to identify and resolve leaks/spills, the root causes of the leaks/spills and corrective actions or conclusions with respect to the consequences."¹¹
- "NRC's ability to take enforcement actions based on a voluntary industry initiative is limited to enforcing those items in the industry initiative that are required by NRC rules."¹²

⁹ As an example, Riverkeeper's website contains a discrete section that includes detailed information on the results of its Water Quality Sampling program, in which Riverkeeper takes regular water samples from predetermined locations on the Hudson River and tests them for human sewage indicators. The sample results are reviewed for quality assurance and posted on the Riverkeeper website, usually within two weeks of being taken. Sampling results are presented on easy to read charts, linked to Google Maps showing the sample locations on the Hudson. In addition, monthly Water Quality reports are e-mailed to Riverkeeper members and the general public, detailing the previous month's analyses and any identified trends. The water quality data can be accessed at Riverkeeper's website, <http://www.riverkeeper.org/water-quality/locations>, last accessed October 31, 2010.

¹⁰ GTF Final Report, Appendix B at B-7.

¹¹ GTF Final Report at 8.

¹² *Id.*

- “the NEI Voluntary Groundwater Protection Initiative is not applicable to all types of licensees; it is only applicable to power reactors. The effectiveness of groundwater monitoring programs across all types of licenses has not been thoroughly evaluated for consistency.”¹³
- “Event Reports created through the NRC (Event Notifications) in response to State reporting required by the industry’s voluntary groundwater initiative do not provide information describing the results of activities to identify and resolve leaks, the root causes of the leaks, corrective actions, or dose consequences. The public is informed of the leaks. However, they are not updated on the progress of identification of the final root cause of the leaks.”¹⁴
- of 47 power reactors assessed, only “19 reactors satisfied all the requirements outlined in NEI-07-07, ‘Industry Ground Water Protection Initiative’” and 21 had “discrepancies,” i.e., “areas of incomplete implementation of the voluntary initiative.”¹⁵

The shortcomings of such a voluntary program are patent. With no mandatory follow-through, follow-up, characterization of the extent of a leak, updates regarding if and when a leak is stopped and/or remediated, and no requirement to continually inform and update the public as to such matters, the NRC’s program addressing accidental leaks remains fatally deficient.

Accordingly, Riverkeeper supports the GTF’s recommendation that the voluntary industry initiative be “incorporated . . . into any revised groundwater protection framework.”¹⁶ NRC must establish comprehensive, enforceable regulations to ensure that nuclear power plants across the country appropriately, uniformly, and transparently handle the growing problem of accidental radioactive leaks.

¹³ *Id.* at 9.

¹⁴ GTF Final Report, Appendix A, at A-10.

¹⁵ GTF Final Report, Appendix B, at B-7.

¹⁶ *Id.* at B-9

3. The NRC must amend its regulations at 10 C.F.R. Part 50 to require all currently operating nuclear power plants, including plants with SAFTSOR reactors on the same site as operating reactors and plants that have thus far not reported or disclosed active leaks or historic contamination, to develop and implement an onsite groundwater monitoring program that includes the following key elements:¹⁷

- A risk informed, site specific analysis of the licensee’s plant site that identifies all systems, including buried pipes, tanks, vaults, radwaste storage and spent fuel pools that carry or contain radioactive liquids. This information will be used to determine the optimal locations to install groundwater monitoring wells in proximity to plant systems, structures and components that have leaked, are likely to leak, or are at risk of leaking in the future. By locating the wells in proximity to anticipated sources of leakage, rather than only at the plant boundary, a properly implemented sampling program can detect leakage before it travels offsite and potentially affects other resources, e.g. drinking water aquifers, sensitive fish and wildlife habitat or private wells.
- Installation and regular sampling (at a minimum quarterly) and analysis of groundwater monitoring wells onsite, for a broad spectrum of radionuclides – not only tritium, but any other indicator radionuclide that would reasonably be expected to be found in these systems, including but not limited to strontium-90, cesium-137, cobalt -60, nickel-63, etc.
 - These wells would be in addition to the few “boundary wells” that are currently in use near the boundary or on properties adjacent to the licensee’s site, and sampled as part of the licensee’s Radiological Environmental Monitoring Program (REMP).
- Publication of the following on either the NRC or a publicly available licensee website.
 - A clear, simple map of the plant site, showing groundwater monitoring well locations, including the sampling depths for each well.
 - Simple, user friendly explanations of sampling methodology and measurement, e.g. picocuries per liter, including reference to the Environmental Protection Agency’s (EPA) Maximum Contaminant Levels

¹⁷ The NRC has already recognized that a site specific assessment of the potential for radioactive leakage to groundwater is necessary during license renewal environmental reviews. *See* Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Main Report — Draft Report for Comment (NUREG-1437, Revision 1, Volume 1), available at, <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/r1/v1/index.html>, at S-10, 2-9, (“radionuclides released to groundwater, particularly tritium, could result in small or moderate impacts at all nuclear plants. Underground system leaks of process water have been discovered in recent years at several plants . . . This is a Category 2 issue.”); *see id.* at 3-56 (recognizing that there are no specific regulatory requirements to have on-site groundwater monitoring programs); *id.* at 4-46 to 4-47 (finding that that impact of “radionuclide releases to groundwater quality could be small or moderate, depending on the occurrence and frequency of leaks and the ability to respond to leaks in a timely fashion” and that “monitoring wells, leak detection equipment or surveillance of accessible piping and components containing radioactive materials would improve the chance of discovery of a tritium leak).

(MCLs) for radionuclides in drinking water and groundwater, pursuant to the Safe Drinking Water Act.

- If the state in which the leakage has occurred has regulations governing contaminant levels in groundwater, those standards should be referenced as well.
 - Regular publication of well sampling results,¹⁸ that indicates whether results are above normal background levels, and whether results exceed MCLs for drinking water or state regulations regarding groundwater.
- If leakage or contamination is detected in the groundwater above background levels, then the licensee must do the following:
 - Notify the NRC and the public.
 - Work with NRC and the state regulatory agency or EPA, whichever is applicable, to develop and implement a plan to investigate, stop and remediate the leak or determine the source of historic contamination. The plan must be approved by NRC with full consultation with state environmental and public health regulatory agencies.
 - In addition to stopping an ongoing leak or determining the source of historic contamination, the licensee must also identify and inspect similar plant systems to that which is leaking, to ensure that similar leaks do not develop on related systems in the future.
 - Develop and implement a public communication plan that notifies the public of the leak or contamination, describes the licensee's and NRC's response, and regularly updates the public on the investigation, repair or cessation of the leak, and remediation of any contamination that resulted. This would include NRC inspection reports, event reports relating to the groundwater leaks, and any correspondence between NRC, EPA, the licensee and state regulators relating to the incident.

4. The NRC must amend its regulations to require licensees to submit all reports generated pursuant to 10 C.F.R. § 50.75(g) to the NRC, and to publicly disclose such reports on a website and in a public repository near the facility, so that the information is available to the NRC, state regulators, and the public prior to the plants' decommissioning.

Under the current regulatory scheme, the licensee is only required to conduct a site specific cost estimate of decommissioning five years before the facility's current

¹⁸ Failure to timely disclose sample results leads to erosion of confidence in the facility's and NRC's efforts to address an ongoing leakage issue. For example, through Riverkeeper's participation in the license renewal proceeding for the Indian Point nuclear power plant, Riverkeeper receives "quarterly" groundwater monitoring reports, that have consistently been released many months, and sometimes years, after the data is collected. For example, the quarterly monitoring report prepared for the plant owner, Entergy, relating to samples collected during the second quarter of 2009, i.e., April, May, and June of 2009, was not finalized and issued until September 22, 2010, well over a year later. See GZA GeoEnvironmental Inc., Final IPEC Quarterly Long-Term Groundwater Monitoring Report, Quarter Two 2009, September 22, 2010, File No. 01.0017869.92. A close to real-time disclosure of relevant information is the best way to meaningfully keep the public informed and confident in the NRC's regulatory oversight of these problems.

operating license expires.¹⁹ There is no requirement for the licensee to submit the records kept pursuant to § 50.75(g) to the NRC at any time. The lack of transparency surrounding this regulatory exemption raises serious doubts about the accuracy of NRC's knowledge of actual environmental conditions at operating plant sites. It also handicaps NRC, EPA, state regulators, the public, and corporate shareholders, all of whom would benefit from having access to the most current, accurate information available. Requiring the public disclosure of these records would have the following benefits:

- Would allow NRC and all other state and federal regulators the ability to plan for the adequate decommissioning of these facilities.
- Allows NRC to gain a better picture of the actual cost of decommissioning the facility before the end of its operating life, and to ensure that the licensee, pursuant to the decommissioning regulations, has adequate funds to fully decommission reactor sites and return them to unrestricted use.
- Would help ensure that licensees are keeping accurate records of leaks and spills, so that decommissioning planning can proceed with the best information possible.
- Would allow the public to become more fully informed as to the actual extent of onsite contamination at operating reactor sites in their communities.
- Would benefit the shareholders of non-utility, merchant nuclear plants' corporate owner/operators, thereby affording them the opportunity to provide corporate officers with fully informed input as to how the corporation allocates its financial resources.

5. The NRC must proactively solicit input from, and otherwise afford States the opportunity to weigh in and apply appropriate regulations to address radioactive leaks to state waters.

Riverkeeper supports the GTF's recommendation that, in response to groundwater incidents, NRC should "[c]onduct a focused dialogue with EPA, states and international regulators to develop a collaborative approach for an enhanced groundwater protection strategy."²⁰ Given the pervasive nature of the growing problem of groundwater contamination caused by radioactive leaks from nuclear power plants, the NRC should continue to be flexible and receptive to input from States whose waterways are impacted.

¹⁹ See 10 C.F.R. § 50.75(f)(3).

²⁰ GTF Final Report at 7.