



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

April 26, 2006

Stuart A. Richards, Chair – Liquid Radioactive Release Lessons-Learned Task Force  
William D. Reckley, Petition Manager  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

## **SUBJECT: PETITION REQUESTED ACTIONS VS. RULEMAKING**

Dear Gentlemen:

During the public meeting on April 5, 2006, between the NRC staff and the contaminated water leakage petitioners and during a private conversation between Mr. Richards and myself immediately following that meeting, it became apparent there's a different understanding of the objectives and values of the actions requested in the petition versus alternative actions obtainable via rulemaking. I believe this difference explains why the petitioners do not think that rulemaking is necessary to resolve the matter. The purpose of this letter is to more fully articulate the basis and reasoning for our viewpoint.

The actions requested in our petition would have each NRC licensee provide docketed answers to questions about potential sources of contaminated water, the available means to detect leakage from those sources, the largest leaks that could remain undetected from those sources, the available means to detect leaked water in the immediate environs of the facilities, and finally how those sources and means collectively ensure that water containing radioactivity exceeding federal regulations does not get past the perimeter fence via unmonitored and uncontrolled pathways.

Here's why we believe that these requested actions are the proper way to resolve this issue:

- ❑ Consider a licensee who identifies a tank that contains radioactively contaminated water with level instrumentation that would be unable to detect leakage of less than xx gallons per day from the tank. If the contents of that tank were administratively controlled such that the radioactivity concentrations would always be low enough that a sustained leak of xx gallons per day combined with the hydrology of the site could not result in water getting offsite with radioactivity levels exceeding federal limits, no additional measures (i.e., monitoring wells) would be necessary.
- ❑ Consider that same licensee with that same tank with an unidentifiable leak rate of up to xx gallons per day, but with hydrology that could result in a sustained leak having water with radioactivity levels exceeded federal limits getting offsite. In this case, at least three options are available: (1) administratively controlling the contents of the tank to lower radioactivity levels, (2) replacing the level instrumentation that reduces the unidentifiable leak rate to significantly less than xx gallons per day, and (3) installing monitor wells strategically in the hydrological pathway from a tank leak.

The actions requested in the petition are, although we are reluctant to characterize them as such, the risk-informed response to the problem within the existing regulations. Rulemaking would entail prescriptive fixes to the problem, mandating specific things like onsite monitoring wells and hydrological characterizations. But these prescriptions are not necessary because existing regulations prevent the unmonitored and uncontrolled release of radioactivity in liquid and gaseous effluents from a facility at levels exceeding federal regulations. The actions requested in the petition identify the site-specific leak hazards and the array of equipment and procedural controls that manage the leak hazards so as to conform to the existing regulations.

In the first hypothetical case above, the as-found configuration was determined to be adequate for conformance to the existing federal regulations. The formal response to the requested actions would docket this determination and clearly establish the combination of hardware and administrative controls essential to that determination so as to lessen the chances that future plant modifications and/or procedure changes undermine this protection. The commitment management processes implemented by the industry following the Millstone debacle and the commitment auditing processes employed by the NRC would provide some assurance that the measures relied upon and credited in the formal response remained in effect in the future.

In the second hypothetical case, the as-found configuration was determined to be inadequate for conformance with existing federal regulations. Yet the licensee retains flexibility to pursue various options for achieving conformance. The formal response to the requested actions would provide the option(s) selected by the licensee that ultimately provide conformance. Again, the commitment control mechanisms would provide continued assurance of conformance into the future.

Rulemaking seems the wrong pathway in either hypothetical case. For the first case, any prescriptive measures mandated via rulemaking represent undue regulatory burden because the as-found configuration sufficiently conformed to existing federal regulations. For the second case, any prescriptive measures may also represent undue regulatory burden if less expensive means of achieving the same protection exist. And for reasons cited below after the Salem and Indian Point spent fuel discussion, the prescriptive measures may also represent less prudent solutions to the problem.

The merits of the actions requested in the petition also fare pretty well when back-tested against actual events. For example, suppose that the spent fuel pool leaks at Salem Unit 1 and Indian Point Unit 2 not yet happened or not yet been discovered:

**Salem Unit 1:** In its formal response to the questions posed in the petition, the licensee would likely have identified the Unit 1 spent fuel pool as a source of radioactively contaminated water and would likely have identified the instrumentation monitoring flow through the tell-tale drains from the space between the stainless steel liner and the reinforced concrete wall as among the measures preventing unmonitored, uncontrolled leakage of spent fuel pool water. That response would have re-emphasized the importance of the instrumented drain line, lessening – albeit not eliminating – the likelihood that its blockage would have been overlooked for long.

**Indian Point Unit 2:** In its formal response to the petition's questions, this licensee would have likely identified the Unit 2 spent fuel pool as a source of radioactively contaminated water but would have been unable to point to instrumented drain lines such as those installed at Salem Unit 1. The lack of instrumented drain lines may have prompted the licensee to adopt administrative measures such as monitoring boron concentrations of the spent fuel pool water, a measure adopted after the leak was identified.

If rulemaking required all NRC licensees to install monitoring wells based on site-specific hydrological characterizations, those measures may indeed prevent contaminated water from getting offsite but they may come at expense of far better ways. For example, the cost of monitoring wells et al might prevent a licensee with a situation like Indian Point Unit 2 from considering the additional cost of installing

instrumented drain lines, thus forestalling the best available – namely, preventing radioactively contaminated water from getting into the ground in the first place.

We remain convinced that the existing regulations are sufficient to protect the public from uncontrolled and unmonitored releases of radioactively contaminated water from NRC-licensed facilities if accompanied by reasonable assurance of conformance. The actions requested in the petition are necessary for each NRC licensee to identify the means it relies upon to conform with the existing regulations, or to identify any gaps that must be corrected.

Sincerely,

A handwritten signature in dark ink, reading "David A. Lochbaum". The signature is written in a cursive, flowing style.

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