



May 15, 2006

James L. Caldwell, Regional Administrator  
Region III  
United States Nuclear Regulatory Commission  
2443 Warrenville Road  
Suite 210  
Lisle, IL 60532-4352

**SUBJECT: SPLIT SAMPLING OF CONTAMINATED GROUNDWATER**

Dear Mr. Caldwell:

On behalf of the Nuclear Information and Resource Service (NIRS) and the Union of Concerned Scientists (UCS), I am writing to you about the NRC's split sampling program as it is being administered for the contaminated groundwater at Braidwood.

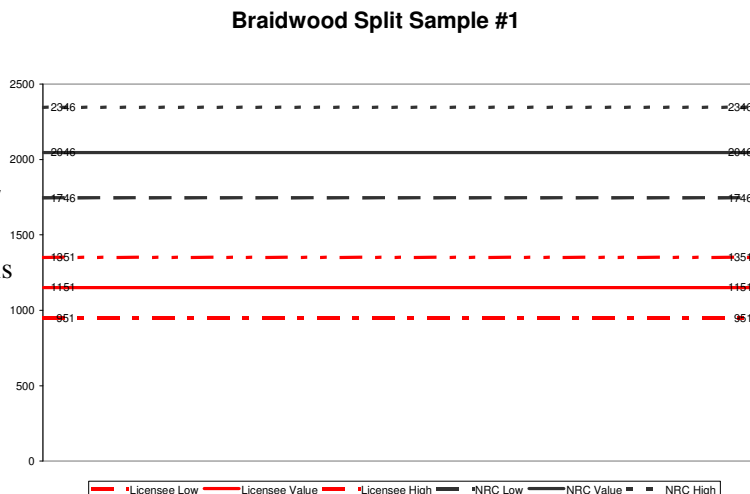
Among the documents obtained from the NRC by Paul Gunter at NIRS in response to his Freedom of Information Act request is the enclosed e-mail from Steven Orth dated December 9, 2005, and titled "Revision 1 to Braidwood Communications Plan." In this e-mail, Mr. Orth stated:

*NRC results of split sample analyses have been reasonably consistent with the licensee's results:*

	Licensee	NRC
Residential well	1151 ( $\pm 200$ )	2046 ( $\pm 300$ )
	1524 ( $\pm 200$ )	1230 ( $\pm 300$ )

**Reasonably consistent? Hardly.**

The first split sample is so inconsistent that the uncertainty bands don't even overlap as clearly illustrated in the graphic. **The NRC's point value is 77 percent higher than the licensee's point value.** If the NRC's split sample here is "reasonably consistent" with the licensee's results from the same sample of water, than it would be equally reasonable to assume that every result reported by exelon could really be doubled.



When forensics labs run a ballistic comparison on bullets, they seek to determine if the grooves left on a bullet by the rifling of a gun barrel match the grooves on the test bullet. They don't settle for a "reasonably consistent" match simply because both bullets have grooves. The NRC apparently deemed these split sample results "reasonably consistent" because all had numbers in them.

Rather than get some cockamamie response from the NRC as to why things that are totally different are "reasonably consistent," I would prefer the answers to the following questions:

1. What formal written procedure governs how the NRC staff obtains and evaluates split samples?
2. What are the pre-established objective criteria employed by the NRC staff in evaluating the adequacy of split sample results?
3. If there are no written procedure and no pre-established objective criteria, what are the rules-of-thumb shaping the NRC staff's "winging it?"
4. If a 77 percent difference between point values and uncertainty bands that are not even close to overlapping is considered by the NRC staff to be "reasonably consistent," what pray tell would the NRC staff consider NOT to be "reasonably consistent?"

We look forward to your response.

Sincerely,

A handwritten signature in dark ink, reading "David O. Lochbaum". The signature is fluid and cursive, with the first name "David" being the most prominent.

David Lochbaum  
Director, Nuclear Safety Project  
Union of Concerned Scientists  
1707 H Street NW, Suite 600  
Washington, DC 20006  
(202) 331-5430