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Docket, Hearing

From:	AlanatAnbex [alan@anbex.com]	DOCKETED USNRC
Sent:	Wednesday, September 12, 2012 1:52 PM	
To:	Docket, Hearing	September 12, 2012 (1:52 p.m.)
Cc:	Siarnacki, Anne	
Subject:	Statement Regarding Indian Point	OFFICE OF SECRETARY RULEMAKINGS AND ADJUDICATIONS STAFF

September 12, 2012

TO: Office of the Secretary, Rulemakings and Adjudications
Staff, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.
Email to: hearing.docket@nrc.gov

CC: Atomic Safety and Licensing Board.
Lawrence G. McDade,
Chairman, Administrative Judge, Rockville, Maryland
c/o Anne Siarnacki, Law Clerk, Atomic Safety and Licensing Board Panel
Email to: anne.siarnacki@nrc.gov.
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RE: Docket Nos. 50-247-LR and 50-286-LR; ASLBP No. 07-858-03-LR-BD01
As per the Federal Register Volume 77, Number 116 Friday, June 15, 2012
Application by Entergy to continue operations at the Indian Point Nuclear Generating Station

As provided for in 10 CFR 2.315(a), this is to submit my written statement setting forth my position on safety issues regarding the April 23, 2007, application of Entergy Nuclear Operations, Inc. (Entergy) to renew its operating licenses for Indian Point Nuclear Generating Station. Please note that I am a homeowner, currently living about 15 miles from the Indian Point Station, and am the President of Anbex, Inc., a supplier of pharmaceuticals used for thyroid protection in a nuclear emergency.

I appreciate the opportunity to submit comments regarding safety issues affecting populations living in the vicinity of Indian Point. I think it is important to note that these Hearings regarding Indian Point are coincident with the US Nuclear Regulatory Commission's (NRC) efforts (which are currently underway), to enhance public safety by revising its key planning document for the protection of the public. This document, produced in conjunction with FEMA, is known as NUREG-0654[1], and is available at www.nrc.gov. It spells-out the plans and actions that authorities would take to protect the public in the event of an emergency at a nuclear power plant.

This revision is long overdue, and is especially relevant to safety issue at Indian Point, because the NRC's existing plans restrict the size of the area around the reactor where direct protective steps would be taken for resident protection. This restricts the number of people the plan will protect.

The area around Indian Point where protective actions would be taken is known as the "Plume Zone." It is very small (only 10 miles from the reactor in any direction), and the plan implies that it is the area of greatest danger. Within the plume zone, in case of a severe accident, the plan recommends immediate aggressive actions to avoid the effects of radiation, including evacuation and the use of potassium iodide (KI) tablets, which the NRC provides free to plume zone residents in order to protect their thyroids.

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But beyond 10 miles from the reactor (the "Ingestion Zone"), where most New Yorkers live, authorities discount the danger to individuals who might be exposed to radiation. Instead, efforts are focused only on indirect measures, such as destroying contaminated food and milk. People in this zone are, for the purposes of the plan, considered safe, as long as they watch what they eat.

The problem, however, is that there is undeniable evidence that most of the casualties in a serious accident would take place BEYOND ten miles. The optimistic assumption that dangerous levels of airborne radiation would not occur outside the plume area was proven wrong at both Chernobyl and Fukushima, where dangerous levels were measured well beyond ten miles. Thousands of children were exposed, and some at Chernobyl some suffered terrible harm. This danger far from the reactor cannot be questioned, since authorities know where the victims lived.

At Chernobyl, for example, **32** firefighters in the plume zone suffered immediate life-threatening high doses of radiation and quickly died. But beyond ten miles, **tens of thousands** of ordinary citizens were exposed to low doses of radiation (both inhaled and ingested), and within 5 years started becoming sick at epidemic rates. Though no one knows the true number of injuries and deaths from thyroid cancer at Chernobyl, it is clear that a hundred to a thousand **times** as many people outside Chernobyl's plume zone were injured or died (almost all due to thyroid damage), as compared to the number of injuries or deaths that took place within the zone.

The NRC, of course, knows this. Their own estimate is that **6000 cases** of thyroid cancer can be traced to the accident[2], and they have written that[3] "*the vast majority of the thyroid cancers*" at Chernobyl took place more than 50 km from the site (which is well outside the plume zone). They even published World Health Organization data noting that 725 of the first 750 cases of thyroid cancer occurred more than 30 miles distant. Similar findings by the FDA, and the initial reports of radiation dispersion following Fukushima, can also be found—all attesting to the fact that 10 miles is an artificial boundary of little significance regarding thyroid issues, and that the danger outside the plume zone is as great, if not greater, than the danger within it.

Chernobyl is not the only case of the NRC ignoring its own findings. Over the years the NRC has established a set of Protective Action Guidelines (PAGs) which specify what radiation levels are safe (measured in dose units known as REM), and what levels are dangerous. The current PAGs call for protective actions when radiation rises above 5 REM, and two NRC studies on this topic both predict this level would be exceeded well-beyond ten miles[4]. In fact, in a severe accident, they predict thyroid doses to children from inhaled radiation of 300 to 3000 REM at a distance of 25 to 50 miles. Clearly, this would devastate children unless evacuations were possible, or KI was available to protect them all.

These cautions and predictions are from the NRC's own research. How then, given that the PAGs would be exceeded beyond ten miles, can the NRC conclude that the size of the area for protective planning around Indian Point should be less than ten miles? The disturbing answer is that the NRC's emergency planning simply ignores the danger to children from low radiation (primarily thyroid cancer), and considers only immediate deaths from very high radiation which kills quickly (before cancer has time to develop).

This is known because page 12 of NUREG-0654 describes precisely how the size of the plan area was determined. It cites the 4 reasons used to limit planning to just 10 miles. But the logic is seriously flawed. Reasons one and two are limited to "Design Basis" (less severe) accidents which (hopefully) release only small amounts of radiation which current systems can contain, and the last reason merely suggests that perhaps safety actions might be expanded to beyond ten miles, if necessary. (Unfortunately, they can't.)

However, it is the third reason that provides the actual rationale the planners used to limit planning to ten miles. It reads, in its entirety, "*For the worst core melt sequences, immediate life threatening doses* [of radiation] *would generally not occur outside the zone*".

That sounds comforting but is actually misleading. Yes, high "*immediate life threatening doses would generally not occur outside the zone,*" but these do not cause cancer. Cancer-causing doses are much smaller and occur over a very large area. Yet despite this potential threat to millions of New Yorkers, the NRC does not see the need to require the single most important step that would protect the public in the event of an accident at Indian Point--the acquisition of enough KI for everyone. If ever needed, the current plan would effectively deny KI to all but a few children, and cancers and other damage would occur that could be avoided.

The nuclear industry does not dispute either the safety or effectiveness of KI. Instead, they claim that any injuries beyond 10 miles (especially among children) would be caused by drinking milk which has been contaminated by radioactive iodine (RAI). Therefore, the NRC has proposed that in an accident, authorities should destroy all milk throughout the ingestion zone (that is, for 50 miles around the reactor) in order to block it from reaching children.

This approach, however, does not stand up to even the most basic analysis.

The NRC scenario is that a serious accident will release RAI which will travel throughout the ingestion zone and eventually settle out onto the grass in pastures. The grass will be eaten by cows, and the RAI will enter their milk, which will be drunk by children, and this will cause thyroid cancer. Therefore, one need merely to interdict milk from contaminated areas, and the children will be safe.

The idea that in an accident, one need only avoid drinking milk to avoid being contaminated by RAI is overly simplistic. By requiring the destruction of milk, the NRC is acknowledging the danger is there. But if RAI can settle-out onto pastures, it will settle-out everywhere. An area, from Eastern Pennsylvania thru mid-Connecticut could be affected in a severe emergency at Indian Point. Every outdoor surface (roofs, roads, lakes, fields, trees, etc) will be thinly coated. More than 20 million people would be subject to continued low-level radiation, and will constantly be breathing RAI in from dust kicked up by the wind, or from cars travelling on roads coated with RAI, or from any of a thousand other sources. It will be impossible to avoid, regardless of how carefully one watches a child's diet.

This outcome, which is likely in a serious accident, would be a nightmare. While evacuation and food control are certainly reasonable and prudent steps to take whenever possible, they are far from sufficient. Only enough KI for everyone would be an effective counter-measure to protect the population, and the failure to have enough KI could lead to thousands of preventable cancers, especially among children.

This should be changed. The country needs nuclear power, but officials have an obligation to assure that all reasonable steps to protect the public are taken. The NRC should not be permitted to ignore cancer and other low-level radiation effects for planning purposes, and the nuclear industry should accept its responsibility to protect everyone for at least 50 miles around our reactors. And one important way to do this is for the public to demand, as a condition for Entergy to continue operations at Indian Point, that the country is prepared with an adequate supply of KI tablets which are cheap, safe, reliable, and highly effective.

Sincerely,

Alan Morris
President
Anbex
alan@anbex.com
727-784-3483
(Note that Anbex is a supplier of FDA approved KI tablets for protection in a radiation emergency.)

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1 *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"*

2 NRC BACKGROUNDER, April 2012

3 Draft NUREG-1633

4 NUREG/CR-1433 and NUREG-6310