

field sports

Necsa's letter did nothing to clear the dark cloud hanging over Hartbeespoort and all its water-users downstream.

Photo: John van der Merwe



Living downstream FROM PELINDABA

In response to a letter from the South African Nuclear Energy Corporation, Abré J Steyn highlights misinformation the corporation provided on the topic of radiation in Hartbeespoort Dam.

THE STORY "WHAT'S REALLY wrong with Harties?" featured in the 7 May 2010 issue of *Farmer's Weekly*, contains information worth noting – try locate it if you missed it. I received many responses, many in support and one not. Of those in support, one was the horror story of Mary-Ann van Niekerk, addressed to the editor in the 21 May 2010 issue. It was the letter of the month. Stories like these are bound to anger some people who value money and investments more than health and life.

The negative response was an official letter from the South African Nuclear Energy Corporation (Necsa) that appeared in the letters column of the 18 June 2010 issue of Farmer's Weekly. Please read it before you continue as I'll only be dealing with the letter and not with the mountains of

global data I have on the subject. This letter shows how heavily Necsa has depended on its powerful propaganda machinery for decades, so much so that it no longer cares how misleading, inaccurate, incomplete, illogical or untruthful the information that it expects the public to swallow is. How logical is it to start the letter by stating that it's the fate of 25% of people to die of cancer without ever being exposed to radiation and then to end the letter by saying "we are all exposed to it (radiation) all the time"?

Necsa's statements that "Steyn attributes his friend's death to radioactivity in the water of Hartbeespoort Dam and specifically to effluent from Pelindaba" and "implicitly assumes that there is a conspiracy involving Necsa, the Department of Water Affairs, the National Nuclear Regulator, Wits University and the University of Pretoria", reflect how

poorly my article was understood. Anyone who read it properly would see that I never wrote that. Necsa tried to read my mind, instead of what I wrote. In fact, I had never even thought about the possibility of a conspiracy, but seeing as Necsa brought it up, could it perhaps be true?

Necsa complained that I blamed it for the dam's shocking condition and the demise of thousands of blue kurper. In fact, I devoted two long paragraphs to other pollution sources – sewerage plants, mines and Rietvlei runoff – although *this doesn't absolve Necsa from being the straw that broke the camel's back.*

By using the Crocodile River to dump its radioactive waste, Necsa is simply adding to the toxic brew of an already overloaded system, further harming the environment and endangering the health



ABOVE LEFT: Over the course of 40 years, the nuclear facility at Pelindaba had a secret license to dump billions of litres of radioactive waste-containing water into the Crocodile River, at the gateway to Harties, without any warning to the public.

PHOTOGRAPH BY LUKASOM

ABOVE RIGHT: How much of Hartbeespoort Dam's toxic, radioactive load is lost every time it overflows is anybody's guess. But it's bound to have detrimental effects on users downstream from Pelindaba.

DAVID SMITH



and lives of people living downstream from Pelindaba. I never laid the blame solely at its doorstep, but if the cap fits, it can wear it.

Necsa rightly calls its "current" effluent outflow of 350 000ℓ/day into the Crocodile River "a lot of water", but in 1999, its average daily outflow was double that, due to a "calculation error". Without disclosing the amount of the effluent's radioactive content, it maintains that it is so "minuscule", that "upstream and downstream" of Pelindaba, the river's uranium content is the same.

Do you believe that? Does it make sense to use the contents of an olympic-size swimming pool to flush your toilet? It seems that calculation errors and inaccurate statistics are commonplace at Necsa and form part of its disinformation strategy. To demonstrate that the 100kg of uranium hexafluoride (UF₆) that escaped from its plant in 1992 was no big deal when compared to the amount of uranium the Crocodile River carries down from upstream,

it had to increase its flow. According to Necsa, the river flows at an average of 20m³/s. Simple school arithmetic shows that there are 31 536 000 seconds in an average year. Multiplied by 20, it means that via the Crocodile River alone, 630 720 000m³ flows into Harties every year – three times its total known capacity of 212 000 000m³. This means that, without taking the Magalies River inflow into account, the Crocodile will, from bone dry, cause the dam to overflow three times every year.

A very real health threat

Necsa also downplayed the health hazard of the UF₆ that escaped. By stating in the same breath that uranium is "relatively common" and only "slightly soluble", it blatantly creates confusion with the uranium metal in the river, comparing apples to pumpkins. In contrast to metallic uranium, UF₆ gas is one of the most highly soluble uranium compounds known. It's an intermediate industrial compound used in the uranium-enrichment process and, chemically, it's much more toxic and radioactive than uranium.

When airborne, it hydrolyses immediately upon contact with water molecules in the atmosphere to form highly toxic hydrofluoric acid (HF) and uranyl fluoride (UO₂F₂), which comes back to earth no matter how high your chimney stack may be. The higher you release it, the wider it spreads. HF is a corrosive vapour that can damage exposed parts of the body and when inhaled, can severely harm and damage the lungs, while the uranium component can cause acute kidney damage

and various cancers. The main long-term storage place of these compounds in the body is bone. In the past, high exposures have resulted in immediate death.

And 100kg of this gas is a huge amount. The accidental escape of under 200kg of UF₆ in the US in 1944 and the fatalities it caused are still mentioned today in reference articles about the gas. Necsa states that the 1992 incident is "absolutely not to be repeated". They don't know that I'm aware of another undisclosed incident, when 800kg of UF₆ escaped from the plant in 1998.

Necsa concludes by stating that it "dispersed without causing any harm". How does it know? Did it look, or did it look away?

'Necsa's long-standing bubble has been popped by its letter.'

The latter is most probably true if one considers that it ignored the plight of 225 of its former employees, who – some very ill – had submitted requests for their medical records. After a delay of almost two years, Necsa offered these employees an opportunity to be evaluated by a doctor it would provide. Those employees who were examined by this doctor had their claims that their illnesses were related to radiation dismissed across the board.

Forgive me for recommending that Necsa appoint more shrewd and competent people to drive its propaganda machine, because I think its long-standing bubble has finally been popped by its letter.

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