EPA Proposes Shocking Thousand-Fold Increase in Radioactivity Allowed in Drinking Water

Proposal Would Permit Radiation Exposures Equal to 250 Chest X-Rays per Year

WASHINGTON, DC—On June 6 the US Environmental Protection Agency (EPA) quietly issued proposals to allow radioactive contamination in drinking water at concentrations vastly greater than allowed under the Safe Drinking Water Act. The new "Protective Action Guides" (PAGs) would permit radiation exposures equivalent to 250 chest X-rays a year. Environmental groups called the proposal "shocking" and "egregious."

The proposed PAGs would allow the general population to drink water hundreds to thousands of times more radioactive than is now legal. For example, radioactive iodine-131 has a current limit of 3 pico-curies per liter (pCi/L) in water, but the new guides would allow 10,350 pCi/L, 3,450 times higher. For strontium-90, which causes leukemia, the current limit is 8 pCi/L; the new proposed value is 7,400 pCi/L, a 925-fold increase.

"Clean water is essential for health. But just like lead, radiation—when ingested in small amounts—is very hazardous to our health. It is inconceivable that EPA could now quietly propose allowing enormous increases in radioactive contamination with no action to protect the public, even if concentrations are a thousand times higher than under the Safe Drinking Water Act," said Dr. Catherine Thomasson, Executive Director of Physicians for Social Responsibility in a press advisory issued with Nuclear Information and Resource Service (NIRS) and Food and Water Watch.

The Bush Administration in its last days unsuccessfully tried to put forward similar proposals, which the incoming Obama Administration pulled back. Now, in the waning months of the Obama Administration, EPA's radiation office is trying again.

"All of this is extraordinary, since EPA has recently accepted the National Academy of Sciences' most current risk estimates for radiation, indicating radiation is considerably more dangerous per unit dose than previously believed," said Diane D'Arrigo, Radioactive Waste Project Director at NIRS.

"These levels are even higher than those proposed by the Bush Administration—really unprecedented and shocking," D'Arrigo said.

The Bush Administration proposal for strontium-90 was 6,650 pCi/L; the new proposal is 7,400 pCi/L. For iodine-131, the Bush proposal was 8,490 pCi/L; the new proposal is 10,350 pCi/L. For cesium-137, the Bush proposal was 13,600 pCi/L; Obama "beats" Bush with an allowable limit of 16,570 pCi/L.

All radionuclides can cause cancer and other health and reproductive problems. There is no completely safe level of exposure. Strontium-90 causes bone cancer and leukemia. Women, infants and, children are at greater risk than adult males.

PAGs apply not just to emergencies such as "dirty bombs" or Fukushima-type nuclear power meltdowns, but also to any radiological release for which a protective action may be considered—even a radio-pharmaceutical transport spill. The proposed drinking water PAG would apply not to the immediate phase after a release, but rather to the intermediate phase after the release has been stabilized and lasting up to several years thereafter.

Radiation doses (in rems) cannot be measured but are calculated based on some measurements and many assumptions. Current Safe Drinking Water Act radiation limits are based on an allowable dose of 4 millirems per year. The new PAGs would allow 500 millirems per year for the general population. A single chest X-ray gives about 2 millirems. Because of the way EPA is changing the definition of "dose," for many radionuclides, the allowable concentration would be thousands, tens of thousands, and even millions of times higher than presently set under the Safe Drinking Water Act.

Internal EPA documents obtained under the Freedom of Information Act show that the EPA itself concluded that the proposed concentrations "would exceed MCLs [Maximum Contaminant Limits] by a factor of 100, 1000, and in two instances, 7 million." The EPA's internal analysis showed that for one radionuclide, "drinking a very small glass of water of approximately 4 ounces ... would result in an exposure that corresponds to a lifetime of drinking ... water ... at the MCL level."

"Pushing allowable concentrations of radioactivity in drinking water up orders of magnitude above the long-standing Safe Drinking Water Act levels goes in exactly the opposite direction than the official radiation risk estimates go," D'Arrigo said.

"Under these proposals, people would be forced to get the radiation equivalent of a chest X-ray 5 days a week, 50 weeks a year, for up to several years, with no medical benefit or informed consent, just from drinking water. This is immoral," D'Arrigo said.

—Take action, and write to the EPA. The public has until July 25 to comment on the PAGs. See nirs.org, or nukewatchinfo.org for details.

Locals "Shouldn't Fear" Waste from Wisconsin Isotope Factory

On February 25, 2016, the US Nuclear Regulatory Commission granted a construction permit to SHINE Medical Technologies for a $100 million factory in Janesville, Wisconsin to produce molybdenum-99 (moly-99).

Press coverage of the permit caught our attention because the firm's promotional materials promise that its production method "generates less waste" than other methods.

Moly-99 decays to "technetium-99m," which is used in medical scans to identify the stages of certain cancers, to diagnose heart disease, and in other diagnostic procedures. SHINE, headquartered in Madison, expects to produce over one quarter of the global demand for moly-99, and the Janesville factory will provide a US source of the medical isotope. Such a source will help avoid supply problems like the current suspension of imports from Canada and The Netherlands, which have both shut down production reactors because of leaks and other safety violations.

SHINE's public information says the company's process involves the use of neither a nuclear reactor nor highly enriched uranium (HEU)—used in most current production methods—eliminating the risk of diversion or theft of weapons usable nuclear materials. Notwithstanding these benefits, there appears to be little advantage over current methods of production in terms of liquid, post-reprocessing radioactive waste.

SHINEmed.com says the firm "was founded to deploy a safe, cost-effective and environmentally friendly technology to produce medical isotopes." It boasts a "patented, proprietary manufacturing process" that it says "uses less electricity [and] generates less waste" than conventional production methods. Additional radioactive materials produced by SHINE will include iodine-131, iodine-125, and xenon-133.

While SHINE's production of moly-99 will employ low-enriched uranium (LEU), its radioactive waste materials mostly are the same, along with attendant risks of accidents along transportation routes. Low Enriched Uranium will arrive at the southern Wisconsin facility and SHINE's new system will produce moly-99 using an "ion-beam" or "gas target neutron generator." The neutrons will be used to fission uranium atoms, producing a host of "fission products" (broken bits of uranium atoms) including moly-99, iodine-131, and xenon-133.

The Janesville *Gazette's* editorial board said on the opinion page that, "Residents shouldn't fear the small amounts of uranium waste." But according to Dr. Gordon Edwards, President of the Canadian Coalition for Nuclear Responsibility, additional radioactive wastes from the process include cesium-137, strontium-90, plutonium-239, and the radioactive varieties of krypton and argon gas. Neither the radioactive or toxic character of the generated waste, nor its volume, is explained on SHINE's website.

SHINE's factory will be across Highway 51 from the Southern Wisconsin Regional Airport, according to the *Gazette*. "Isotopes disintegrate quickly—thus SHINE's desire to build across from the airport so it could speed its product to market," the paper reported.

SHINE declined to answer Nukewatch's questions about the source of its LEU and the nature and volume of its radioactive waste. Spokesperson Katrina Pitas wrote in an email, "It appears our two organizations have directly opposing goals. Because of this, we respectfully decline to provide comment for your article."

SHINE has benefited from generous funding from the federal government including $15 million from the Department of Energy's National Nuclear Security Administration to produce radioisotopes without weapons-grade highly enriched uranium. The City Council of Janesville approved a $9 million incentive package for SHINE in 2012.

SHINE hopes to open its factory in three years pending NRC approval of an operating permit. There are other methods for producing medical isotopes that do not require the use of uranium at all, whether LEU or HEU and that do not produce highly radioactive waste containing fission products.

—Canadian Coalition for Nuclear Responsibility emails June 14, 7, & May 25; SHINE Medical Technologies, email, June 2; Janesville *Gazette*, Mar. 2; Minneapolis *StarTribune*, Feb. 26; & SHINE press release, Feb. 25, 2016; Milwaukee *Journal Sentinel,* Oct. 26, 2015, & Mar. 28, 2010. ***—KL & JL***

Editorial

North Korea Pledges No-First-Use of Nuclear Weapons, Following China and India—So Could Obama

North Korea's May 7 declaration that it would not be first to use nuclear weapons was met with official derision instead of relief and applause. Not one report of the announcement I could find noted that the United States has never made such a no-first-use pledge. None of three dozen news accounts even mentioned that North Korea doesn't have one usable nuclear warhead. The *New York Times* did admit, "US and South Korean officials doubted that North Korea has developed a reliable intercontinental ballistic missile that would deliver a nuclear payload to the continental United States."

Nuclear "first use" means either a nuclear sneak attack or the escalation from conventional mass destruction to the use of nuclear warheads, and US presidents have threatened it as many as 15 times. In the build-up to the 1991 Persian Gulf bombing, US officials including then Def. Sec. Dick Cheney and Sec. of State James Baker publicly and repeatedly hinted that the US might use nuclear weapons. In the midst of the bombardment, Rep. Dan Burton, R-Ind., and syndicated columnist Cal Thomas both explicitly promoted nuclear war on Iraq.

In April 1996, President Bill Clinton's deputy Defense Secretary Herald Smith publicly threatened to use nuclear weapons against non-nuclear Libya—which was a party to the Nuclear Nonproliferation Treaty—for allegedly building a secret weapons plant. When Clinton's Defense Secretary William J. Perry was questioned about this threat he repeated it, saying, "[W]e would not forswear that possibility." (The Nonproliferation Treaty forbids a nuclear attack on other state parties.)

In "Presidential Policy Directive 60" (PD 60) of November 1997, Clinton made public the nuclear first use intentions of his war planners. US H-bombs were now being aimed at nations identified by the State Department to be "rogues." PD 60 alarmingly lowered the threshold against nuclear attack possibilities. The Clinton doctrine "would allow the US to launch nuclear weapons in response to the use of chemical or biological weapons," the *Los Angeles Times* and *New York Times* reported. (Arguing that we need H-bombs to deter chemical attacks is like saying we need nuclear reactors to boil water.) Throwing deterrence policy under the bus, Clinton then "ordered that the military … reserve the right to use nuclear arms first, even before the detonation of an enemy warhead."

Clinton's order was an imperious rebuke to the National Academy of Sciences (NAS)—the nation's highest scientific advisory group—which recommended six months earlier, on June 18, 1997, that the US, "declare that it will not be the first to use nuclear weapons in war or crisis." In April 1998, Clinton's US Embassy reps in Moscow coldly refused to rule out the use of nuclear weapons against Iraq, saying, "…we do not rule out in advance any capability available to us."

Again, in January and February 2003, Secretary of State Colin Powell and White House Press Secretary Ari Fleischer declined to explicitly exclude nuclear weapons as an option in a war on Iraq, saying US policy was not to rule anything out, Wade Boese of the Arms Control Association reported. Additionally, Def. Sec. Donald Rumsfeld said at a Feb. 13 Senate Armed Services Committee hearing that official policy dictated that the US, "…not foreclose the possible use of nuclear weapons if attacked."

Putting an end to these ultimate bomb scares would bring US action in line with Presidential rhetoric, which has regularly denounced "nuclear terrorism." An international agreement on "non-nuclear immunity," adopted by five nuclear-armed states May 11, 1995, has not quelled charges of hypocrisy made against them. The pact is full of exceptions—including PD 60—and is nonbinding. Only China has made this unequivocal pledge: "At no time and under no circumstances will China be the first to use nuclear weapons and [China] undertakes unconditionally not to use or threaten to use nuclear weapons against non-nuclear countries and nuclear-free zones." India has made a similar no-first-use promise.

A formal US renunciation of first use would let cooler heads prevail by ending the debate over so-called "threshold" use of the Bomb. It would also end the blatant public duplicity of proclaiming that nuclear weapons are only for deterrence while preparing for attacks before the detonation of an enemy warhead.

Pledging "no first use" would save billions of dollars in research, development and production, as well as the cost of maintaining first-strike systems like B61 gravity bombs, Trident submarine warheads, Cruise and land-based missile warheads.

Significantly, nuclear war planners who have used their first-strike "master card" believe they were successful—the way a robber can get a bag of cash using a loaded gun but without pulling the trigger. They want to keep their ghastly "ace" up their sleeve, and they have manufactured a heavy stigma against formally renouncing nuclear first use, since to do so might further call into question the official "winning" reasons for having tested radiation bombs on Hiroshima and Nagasaki in 1945.

The US should embrace China's unambiguous language and promise never to use nuclear weapons first or against non-nuclear states.

If President Obama wants to ease world tensions before leaving office, he should do as the United States demands of other states, and replace Clinton's presidential directive with his own declaration that the US will never again be the first to go nuclear. ***—JL***