July 25, 2016

Docket numbers EPA-HQ-OAR-2007-0268
FRL-9947-55-OW
Draft Protective Action Guideline (PAG) for Drinking Water After a Radiological Incident
June 10, 2016
P 37589-37592 (4 pg)

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The EPA Draft Water PAG 6/2016 is a document that will allow responsible parties for drinking water systems to avoid compliance with the Safe Drinking Water Act (SDWA) in the event of just about any radiological event and for unlimited time. This Guidance relaxes the standards before the United States (NRC, Congress, EPA) has taken actions to reduce the likelihood of events from spills to catastrophic meltdowns. It adapts radiation contamination of our precious drinking water before taking steps that would prevent the preventable and is therefore an example of regulatory failure. This document lets industry off the hook. These guidelines are not protective but allow exposures 125x higher than current drinking water standards allow (much higher for individual radionuclides only 3 of which have been published here. For I131 the draft PAG allows levels in water to exceed 3000x current SWDA levels without requiring any action). These are not protective levels. In addition, other failures in this document include:

1) Time public is exposed to higher levels of radionuclides in drinking water is open ended and each occurrence can last for years increasing cancer risks. Increased time exposed increases cancer rate. Localities may choose to keep PAG in place if it is cheaper than remedial action even if the exposure to these PAG levels exceed one year, two years, etc. The document states, "EPA expects that the responsible party for any drinking water system adversely impacted during a radiation incident will take action to return to compliance with Safe Drinking Water Act (SDWA) maximum contaminant levels as soon as practicable."
5.0, p 10. It also states, "regardless of the cause of an incident, EPA expects that the responsible party for any drinking water system impacted during a radiation incident will take action to return to compliance with the NPDWR levels by the earliest feasible time." June 2016 draft Water PAG. Nothing in the language here requires the responsible party to take action if a locality keeps PAG in effect for 3 years or 40 years. This is a voluntary guidance that some officials may interpret as permission to pollute and cause cancer. A one in one thousand risk becomes a 3 in 1000 risk after 3 years exposure.

2) Multiple exposure routes increase cancer risks. While water and food pathways are allowed to expose public to 1 rem a year of cancer causing radiation, the public is likely getting airborne and ground shine exposure as well leading to even more cancers. The EPA states, "the full PAG Manual addresses all of the other pathways (plume inhalation, immersion, ground shine, skin and thyroid doses in particular, long term exposure to contamination, reentry and return to complete cleanup work, etc.)" p. 6, June 2016 Draft Water PAG. Ground contamination in the first 3 years could be up to 3 rem before relocation is required http://www.remm.nlm.gov/pag.htm#intermediate. Add 3 rem for 3 years of water and food pags, we now have a population exposed to 6 rem = 6 x .0016 =.01 or 1 chance in 100 of getting otherwise preventable cancer.

3) Multiple episodes in a lifetime increase risk of cancers with each episode that triggers abandoning SDWA for x125 more lenient PAG, anything from a spill of radioisotope at hospital to a spill of tons of radioactive waste, to fracking wastewater that gets into drinking water to explosion or meltdown at a nuclear power plant. Each of these events could trigger abandoning Safe Drinking Water Act. Too much leeway in what qualifies means more people exposed to radioactive water for too many events because the bar for relaxing standards is so low, ie "a radiological incident that affects drinking water sources." 1.0 p.4. June 2016 draft Water PAG

4) Notification of the public within 30 days is too long and in the case of exposure to radioactive iodine is useless for protecting the public against thyroid cancer. Delay will lead to increased risk of cancers. Exposures in the first few days are likely to be the highest and an informed public can take action to reduce exposures "if compliance monitoring indicates that contamination levels exceed the MCL for any radionuclide, water systems are required to issue public notice on a “Tier 2” time frame (i.e., as soon as practical, but no later than 30 days after the system learns of the violation).” 6.2 p. 14 June 2016 Draft Water PAG. People need to have accurate information as soon as possible after an event of radioactive contamination of their drinking water especially if the EPA is going to take what many feel is too little action to protect the public.

5) Errors in the calculated DRL will lead to increased risks of cancer and are too easy for officials to make especially with calculations for multiple radionuclides. This would cause exposures even higher than the PAGS recommend and greater risks of cancer. We know what happened in Flint Michigan when officials made erroneous decisions with drinking water despite EPA involvement. Officials throughout the country will have varying degrees of education, experience and intelligence and errors they make will lead to public morbidity and mortality.
6) Levels for dose conversion factor does not distinguish male from female exposed and will lead to greater than predicted risks of cancer in females. Dose Conversion Factor PAG document makes no distinction between males and females though we know females are more susceptible to health effects from them. 7.4 Table 3. p 22. June 2016 Draft Water PAG

7) EPA guidelines allows radioactive pollution PAG to protect industry even when EPA has almost no authority to regulate and this may be interpreted by industry as a license to pollute leading to greater risk of cancer. "EPA does not have authority to regulate [hydraulic fracturing] wastewaters as they are generated," said an EPA representative in a statement. http://www.sciencemag.org/news/2015/04/study-raises-questions-about-measuring-radioactivity-fracking-wastewater. Yet radioactivity of wastewater can be significant. "The radioactivity levels in produced waters from unconventional drilling can be significant and the volumes are large." https://www.epa.gov/radiation/tenorm-oil-and-gas-production-wastes. "The average radium concentration in scale has been estimated to be 480 picocuries per gram (pCi/g). It can be much higher (as high as 400,000 pCi/g) or lower depending on regional geology. Scale in gas wells and equipment can also contain the radon progeny lead-210 (Pb-210) and polonium-210 (Po-210)." Ibid. The World Nuclear Association reports that, "TENORM (technologically enhanced naturally occurring radioactive material) from produced waters in the Marcellus Shale may be "300 times the Nuclear Regulatory Commission limits for industrial wastewater discharge." I Ibid. Despite having almost no role in regulating radioactive contamination of drinking water from fracking wastewater, this PAG draft may be used by a locality to accept levels of radionuclide pollution that greatly exceed Safe Drinking Water Act Standards and give a pass to industry to pollute.

FEMA entrusted EPA with mitigating exposure and not just adapting to exposure. That is, "guidance for state and local governments on implementing PAGs, including recommendations on protective actions which can be taken to mitigate the potential radiation dose to the population." (44 CFR 351.22(b). One can interpret “mitigate” as doing more than closing off intake valves after the contamination has occurred but passing regulations that make such an event less likely and thus protecting the commons, our access to safe water. After the Fukushima disaster, the NRC put together a task force to evaluate lessons learned from Fukushima. According to the Union Of Concerned Scientists, which is not anti-nuclear, just anti unsafe nuclear, the NRC rejected recommendations of its own staff. The task force’s top priority was overhauling what it called a “patchwork” of NRC regulations and industry voluntary guidelines for “beyond-design-basis” events that plants aren’t intended to withstand. That would give both regulators and plant owners coherent standards to protect against severe events like Fukushima and provide a framework for implementing the task force’s other recommendations. After several years of deliberation, the NRC rejected this fundamental recommendation, asserting that its regulatory framework did not need fixing." http://www.ucsusa.org/news/press_release/post-fukushima-reforms-report-0678#.V4_W3HD3aK0

"Once again, the NRC is ignoring a key lesson of the Fukushima accident: Emergency plans are not worth the paper they are printed on unless they are rigorously developed, maintained,
periodically tested, and subject to NRC inspection and enforcement,” said Lyman. “When it comes to many critical safety measures, the NRC is allowing the industry to regulate itself.” (same reference).

The EPA could be recommending to NRC that it support these recommendations and actually learn lessons from the Fukushima disaster. EPA could be looking into ways to recommend regulations controlling radioactive wastes from unconventional drilling (fracking). Instead, EPA is rushing to ease regulations on radiation getting into the drinking water through acts of man and not regulating how long water systems can skirt the Safe Drinking Water Act. It can give industry a free pass and allow otherwise preventable excess cancer to afflict the public. This is bad policy and serves public health poorly. These guidelines need to be much lower and should be implemented after regulations are put in place as suggested above, that reduce the likelihood of nuclear power plant accidents, leaks, mishaps transporting waste, and control wastewater from unconventional drilling. We have a right to expect better of our regulatory bodies than this!