

## RulemakingComments Resource

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**From:** Gene Nelson, Ph.D. <c0030180@airmail.net>  
**Sent:** Tuesday, June 23, 2015 8:06 AM  
**To:** RulemakingComments Resource  
**Subject:** [External\_Sender] RE: Docket ID NRC-2015-0057  
**Attachments:** Absurd Radiation Limits are a Trillion Dollar Waste - Conca 07 13 14.pdf

RE: Linear No-Threshold Model and Standards for Protection Against Radiation, Docket ID NRC-2015-0057

Hello, NRC Rulemaking Committee:

I heartily support the three petitions for rulemaking to end ALARA and reliance on LNT that have been submitted to the NRC by qualified radiation professionals Carol Marcus, Mark Miller, and Mohan Doss with additional signatories from Scientists for Accurate Radiation Information. While the LNT hypothesis helped to motivate the end of above-ground nuclear testing, it is not supported by experimental data.

I note for example the absence of the predicted statistically-significant increase in mortality or disease caused by higher levels of background radiation in locations in Brazil or India. Furthermore, life most likely evolved for about the past two billion years under higher levels of background radiation than are now present, as the Earth was formed with sufficient naturally radioactive materials to insure that Earth's core remains liquid as a consequence of a natural reactor deep within the Earth. Further evidence of higher background radiation in earlier times comes from the abundant reserves of Helium within the Earth's crust. All of that Helium was the product of radioactive decay, as primordial Helium from ~4 billion years ago would have already diffused out from the crust and floated into space.

I'm also attaching Jim Conca, Ph.D.'s 13 July 2014 Forbes blog post, "Absurd Radiation Limits are a Trillion Dollar Waste" for inclusion in the record.

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ENERGY 7/13/2014 @ 6:37PM | 10,727 views

## Absurd Radiation Limits Are A Trillion Dollar Waste

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There are some easy decisions to make that will save us a trillion dollars and they could be made soon by the Environmental Protection Agency. EPA could raise the absurdly low radiation levels considered to be a threat to the public across the regulatory spectrum.

These radiation limits would go from between 4 to 25 mrem (40 to 250 microSv) to more reasonable levels, like 500 to 5,000 mrem, depending upon the regulation and the particular office in EPA.

We have a patchwork of radiation-related statutes from those that apply to routine operation of nuclear power plants, and other fuel cycle facilities like nuclear waste repositories, found in 40 CFR 190 ([Atomic Insights](#)) to those in the EPA Protective Action Guides ([Reason](#)) that provide threat levels for evacuations in the case of a nuclear disaster like Fukushima or a dirty bomb attack. A dirty bomb, or radiation dispersal device, is radioactive material dispersed in a populated area using ordinary explosives like a car bomb.

These possible regulatory changes have been triggered by the real threat of nuclear terrorism, and by the unnecessary evacuation of tens of thousands of Japanese after [Fukushima](#), and hundreds of thousands of Belarusians after Chernobyl ([Belarus Repopulating](#)).

Unless you, the reader, are in a boat out in the middle of the Pacific Ocean, you're getting a radiation dose between 200 and 1,000 mrem/year in the United States, just from background sources such as rock, dirt, potatoes and cosmic rays ([EPA Rad Limits](#)). Some places in the world have background doses ten times higher than us. There have never been any observable health effects from these doses. Ever. Anywhere.

However, for reasons historic and political, the present radiation threat level established in 1977 by EPA was 25 mrem, well below background in any part of the world, except for said middle-of-the-ocean. These levels are not even as high as that in our food.

For a nuclear waste repository like Yucca Mt, it's even more absurd. We have to make sure the dose to a distant drinking water well won't exceed 4 mrem in the year 4000 A.D.

Keep in mind that we radworkers can get 5,000 mrem/year and think nothing of it. We've never had problems with these levels. Emergency responders can get up to 25,000 mrem to save human lives and property. I would take 50,000 mrem just to save my cat.

Therefore, using 25 mrem to force-evacuate New York City seems overly cautious.

This wouldn't be bad if it didn't have really serious social and economic side-effects, like pathological fear, significant deaths during any forced evacuation, not getting medical procedures you should have, shutting down nuclear power plants to fire up fossil fuel plants, and a trillion-dollar price tag trying to clean-up to levels even Mother Nature doesn't care about ([WSJ](#); [Heartland](#)).

Keeping to these present ultralow levels, and similar levels promulgated throughout our regulatory arena ([Atomic Insights](#)), has cost the United States about \$500 billion since 1970, and will cost us a lot more in the years to come ([Low-Level rad Summit](#)).

Take a national nuclear waste repository like Yucca Mt. To make sure that dose to a distant drinking water well won't exceed 4 mrem in the next 100,000 years, will cost about \$180 billion over 60 years, and that's if it goes without a hitch. Lots of other costs are not covered in that \$180 billion, like the cost to prepare the waste to go there, one task being to turn 57 million gallons of waste up at Hanford, [Washington](#) into glass. The vitrification plant being built to do this, and the 40 years to operate it, will cost another \$90 billion, and has had nothing but hitches. If more science-driven decisions were made, these costs would drop by seventy to eighty percent ([Reason](#)).

Fortunately, the EPA is now considering 5 rem (5000 mrem) as a more reasonable radiation threat level for evacuation, based on historical events, previous regulations and knowledge from nuclear experts ([NYTimes](#)). This particular change will be for only one of the regulations governing radiation, the one-time dose from an attack or an explosion, but will have a huge effect on all the other regulatory guidelines as well ([Washington Energy Report](#)).

These other regulations are also being reconsidered ([EPA 40 CFR 190](#)) and acceptable radiation levels for these regulations may increase more than ten-fold. These regs cover situations like finding a national nuclear waste disposal

site ([Where?](#)) and clean-up of radiologically-contaminated sites. EPA is just walking away from some of these sites since they know we can't clean-up to these ridiculously low levels ([Florida Clean-Up](#)).

This latest step by the EPA to revise the radiation threat levels seems to be driven by none other than the Government Accounting Office itself ([GAO Wants Action](#)). More and more reports indicate that the forced evacuation in Fukushima was not necessary ([Fukushima 2.25](#)). The panicked Japanese authorities were following old American plans under the ALARA policy (As Low As Reasonably Achievable) that has always been misinterpreted to mean any and all radiation is dangerous no matter what level. It's led to our present absurdly low threat level of 25 mrem (250 microSv).

The GAO rightly considers these low radiation levels as a vulnerability in themselves because the most dangerous effect of something like a dirty bomb is the panic, fed by these low limits (GAO Report on [Nuclear Terrorism](#)). No one has ever been affected by such low levels so causing panic over it just harms more people than it could help.

This latest action by EPA is the next logical step in addressing this century-old conundrum. The Obama Administration took the previous step last year to allow risk-based decisions to guide responses to radiological events like a nuclear accident, and not to treat it like a superfund site ([Obama Makes A Rad Decision](#)). This is very important because, in such events, the response can be worse than the event itself for many of those affected.

While experts in the nuclear field have long known the present radiation limits to be too low, this proposed EPA action will surely be met with resistance from those ideologically opposed to anything nuclear or from those who live in fear of even background radiation. But we can't keep pretending to control radiation to levels below what Nature throws at us every day.

We just can't afford it.