

PUBLIC SUBMISSION

As of: 8/20/15 2:38 PM
Received: August 12, 2015
Status: Pending_Post
Tracking No. 1jz-8kii-wdp6
Comments Due: September 08, 2015
Submission Type: API

Docket: NRC-2015-0057

Linear No-Threshold Model and Standards for Protection Against Radiation

Comment On: NRC-2015-0057-0010

Linear No-Threshold Model and Standards for Protection Against Radiation; Notice of Docketing and Request for Comment

Document: NRC-2015-0057-DRAFT-0119

Comment on FR Doc # 2015-15441

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General Comment

The destructive power of increased radioisotopes in the world has been long-established over decades. LNT has been proven repeatedly; hormesis is a disproven theory. To ignore the evidence is irresponsible and increases lethal results.

I have attached a letter with references that illustrates some of the many decades of research that has proven that radioisotopes are lethal to life and that low level exposure unravels the stuff of life itself.

Nuclear energy is destructive of all life and should be banned outright -- it destroys the genetic stability of all life. As Dr. Rosalie Bertell (2010) made clear:

"When you are talking about constant low radiation exposure, what you are doing is introducing mistakes into the gene-pool. And those mistakes will eventually turn up by killing that line, that cell line, that species line. The amount of damage determines whether this happens in two generations or in seven generations or 10 generations. So what we are doing by introducing more mistakes into the DNA or the gene pool is we are shortening the number of generations that will be viable on the planet.

We have shortened the number of generations that will follow us. We have shortened that already. So we reduced the viability of living systems on this planet, whether it can recover or not. We don't have any outside source to get new DNA. So we have the DNA we have, whoever will live on this

planet in the future is present right now in the DNA. So if we damage it, we dont have another place to get it."

Sincerely,
Marushka France

Attachments

Nuclear is Omnicide_Letter to World Leaders

21 January 2015

World Leaders, Heads of State, Religious Leaders
Address
Planet Earth

Re: Nuclear Power destroys life_Omnicide

Nuclear power damages RNA and DNA – destroys cellular structure, destroys genes. It is poison. Anthropogenic (human-made) radioisotopes destroy all life at the Atomic level: destroys genetic stability, causes disease and death, accelerating aging, infertility, children born without the organs to procreate. Reference materials included.

We have, over the last several decades, propelled ourselves and our world to the brink of utter annihilation. The choices we make now are simple and profound. Do we stubbornly perpetuate delusions of grandeur over life and death while committing Omnicide? Do we share the delusion that there is infinite natural resources, infinite trees, plants, animals to take for our use – needed and wastefully unnecessary? or are we aware of how precious the gift of life is? Does our wisdom show us that all life on the planet in which we live is interdependent, rising as a part of an interdependent creation? Whether you view Creation as God-given or Evolution – both agree that humans arrived last the air, water, plants and creatures came first, after which Homo sapiens arrived. This should be a template for how we also behave – all others are considered first in our thoughts and actions. All else of creation is my 'elder', thus deserving of respect, all else of Creation is necessary to sustain my kind, my species – the whole must be preserved harmoniously – clean air, water and soils – so that we may also live.

Do we honor the beauty and sacredness by choosing carefully how we act? Do we choose to squander and thus destroy existence or do we nurture and protect all life? – for the future rises from how we respond in the present moment. Do we only think of ourselves and take without regard for all? or do we demonstrate true vision, reason, wisdom and compassion?

We are a part of a grand web of life. Gaze beyond our daily lives and realize that each of us is necessary to act kindly, compassionately for the good of all. By preserving the present, providing what is needed, not wanted, but needed to preserve life, and the preservation also of future generations.

In the natural world, when we harvest crops, do we take all of it, consume all of it? No. No, of course not! In the harvest are the seeds of future harvests, so we choose a portion of the best and preserve it as the literal seeds of future harvests. In the wild world, we do not take all the herbs available for medicines, we only take what is necessary and we leave the rest so that there will be herbs and medicines for the future. Disconnected from the natural world, from plowing fields, nurturing healthy soils and forests, we behave ever more recklessly and foolishly. We plunder country after country, peoples after peoples. The rights of ownership are repeatedly violated, the perceived necessity and lack of respect for others, finds our species plundering what belongs to another, using up without concern or care for other people, lands, other species, nor preserving the healthy integrity of clean air, soils, water and other species for a whole and harmonious future.

The way of a devout person of any creed or religion, the way of a reasonable person, the way of wisdom, is to sow the seeds of the future in the present. This is literally true in every day we live as it is for one season of growth to the next. Just as a wise farmer preserves the seeds of future harvests in the seeds of the present, so also does humanity also need to recognize that we do not preserve life when we fail to preserve, but instead pollute our world.

This is the only planet we have available to us to live. This air is all the air; these waters are all the

waters; the soil is all soil.... all life is Sacred as such, should be treated as Sacred as it is what sustains precious Life... so also we must recognize, as Dr. Rosalie Bertell wisely pointed out:

*"We always have to remember that the future generations on this planet are not nebulous, we are right now carrying them in our bodies, they don't come from out of space! They come from the sperm and the ovum that are right now living in the bodies of people living on this planet. If we destroy that, we have no way of putting it back together again."*¹

Every chemical made, every pharmaceutical created, every nuclear emission, every bomb, every uranium weapon now also exists in all the world and in our bodies – destroying the very DNA of the sperm and ovum.... of all species. The world is increasingly desolate... rainforests felled, rivers and oceans polluted, chemicals sprayed into the air, manipulation of weather, poison of man-made radioisotopes (nuclear), petroleum and its products.... destroying the planet, all species, ourselves.

There are two most urgent reasons to motivate the world to step out of delusional world and into reality: nuclear proliferation and climate change are competing for first place in destroying all life as we've known it for eons. Nuclear is a huge part of having destroyed climate, weather patterns, ocean, soil and atmosphere, the ability of the oceans to produce oxygen... it is the most heinous example of the human capacity to reject life – omnicide. (See IIIA)

I have provided a list of what I consider to be the most informative on the subject of how lethal – for all generations – the proliferation of nuclear is NOT just bombs, but every nuclear power plant, toxic emissions, nuclear waste, 'nuclear medicine' which is actually an oxymoron - is a death industry.

It is a wise person who realizes that we are only truly free and alive when we act to elevate others. In living life as a gift, in service to others, we all rise together. If we are to respect and honor the sacred in life, we must act to maintain harmony, take only what is necessary, do so in a sacred manner, and express our gratitude. This is the way of Compassionate Action.

We do not have to have nuclear war, we are doing it with nuclear and we are doing it with human activities that are disrupting the ability of our entire planet to sustain life. Will nuclear or 'climate change' denial kill us all first?

What matters is we have to change collectively and immediately... or we will find out quite soon.

"... there is no amount of radiation so small that it has no ill effects at all on anybody. There is actually no such thing as a minimum permissible dose. ...

Radiation, in its simplest terms - figuratively, literally and chemically - is poison."²

~~~ John F. Kennedy (35<sup>th</sup> US President) 1960

Sincerely,

Marushka France, Grandmother

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1 Bertell, Rosalie. *No immediate danger? Prognosis for a radioactive earth.*

<https://www.facebook.com/notes/marushka-france/no-immediate-danger-rosalie-bertell-excerpts/10152639743601649>

2 Speech April 2, 1960 [http://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/Milwaukee-VI\\_19600402-Wisconsin-Assoc-of-Student-Councils.aspx](http://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/Milwaukee-VI_19600402-Wisconsin-Assoc-of-Student-Councils.aspx)

## REFERENCES

**I. Herman Joseph Muller** (I link photo with a list of resources to expand understanding... Muller's paper, published in 1927; Muller won the Nobel in 1946, demonstrating that radiation exposure causes genetic mutation.)

[https://www.facebook.com/marushka.france/media\\_set?set=a.10152352350829533.1073741831.761364532&type=3](https://www.facebook.com/marushka.france/media_set?set=a.10152352350829533.1073741831.761364532&type=3)

### **II. John F. Kennedy, 35<sup>th</sup> US President, 1960:**

"... there is no amount of radiation so small that it has no ill effects at all on anybody. There is actually no such thing as a minimum permissible dose. Perhaps we are talking about only a very small number of individual tragedies - the number of atomic age children with cancer, the new victims of leukemia, the damage to skin tissues here and reproductive systems there - perhaps these are too small to measure with statistics. But they nevertheless loom very large indeed in human and moral terms.

Radiation, in its simplest terms - figuratively, literally and chemically - is poison. Nuclear explosions in the atmosphere are slowly but progressively poisoning our air, our earth, our water and our food. And it falls, let us remember, on both sides of the Iron Curtain, on all peoples of all lands, regardless of their political ideology, their way of life, their religion or the color of their skin. Beneath this bombardment of radiation which man has created, all men are indeed equal."

[http://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/Milwaukee-WI\\_19600402-Wisconsin-Assoc-of-Student-Councils.aspx](http://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/Milwaukee-WI_19600402-Wisconsin-Assoc-of-Student-Councils.aspx)

**III. Sister Dr. Rosalie Bertell** (1929-2012) Grey Nun of the Sacred Heart, epidemiologist, extensive work on effects of man-made, ionizing radiation.

**A. Anti-Nuclear Nun** [Dr. Rosalie Bertell](http://www.ratical.org/radiation/RBanNun.html), a Grey Nun for half a century, is an internationally recognized expert in the field of radiation by Donna Jean MacKinnon, *Toronto Star*, Staff Reporter, May 3, 1998

<http://www.ratical.org/radiation/RBanNun.html>

*on the same website*

### **"Omnicide: The Stark Reality of Species Death**

The acceptance of the fact of one's personal death is mitigated by the experienced continuity with both the past and the future. For adults this continuity is most obviously linked with biological parenting, but it also occurs because of human memory, culture, literature and scientific endeavours. One can continue to affect history even after one's death. Parents survive through the cherishing memories of their children. Personal death is natural, although it may be premature as Jimmy's was, or violent as in war.

The concept of species annihilation, on the other hand, means a relatively swift (on the scale of civilization), deliberately induced end to history, culture, science, biological reproduction and memory. It is the ultimate human rejection of the gift of life, an act which requires a new word to describe it, namely omnicide. (The term omnicide was first used by John Somerville in 'Human Rights and Nuclear War', *The Churchman*, 196: 10-12, January 1982.) It is more akin to suicide or murder than to a natural death process. It is very difficult to comprehend omnicide, but it may be possible to discern the preparations for omnicide and prevent its happening.

... Should the public discover the true health cost of nuclear pollution, a cry would rise from all parts of the world and people would refuse to cooperate passively with their own death.

-- from the Introduction of ["No Immediate Danger ? Prognosis for a Radioactive Earth"](#) by Dr. Rosalie Bertell, © 1985 by The Book Publishing Company, Summertown, Tennessee 38483

<http://www.ratical.org/radiation/inetSeries/RB89.html>

#### **B. 16 Million Radiation Deaths and Counting**

<https://www.facebook.com/photo.php?fbid=10151938207834533&set=a.10150995519169533.449286.761364532&type=3&theater>

Why should we continue to destroy ourselves by this kind of mentality and this kind of process? Dr. Rosalie Bertell speaking at an event in Los Angeles put on by Women's Action for Nuclear Disarmament (WAND) and Women's Strike for Peace (WSP) March 11, 1989  
<http://www.ratical.org/radiation/inetSeries/RB89.html>

#### **C. Dose Limits And Epidemiology**

Workshop Report by Prof. Wolfgang Kohnlein, Dr. Alice Stewart and Dr. Rosalie Bertell  
(Dr. Alice Stewart (Naish) 1906-2002, U.K. physician, epidemiologist, specialising in social medicine)  
<http://www.ratical.org/radiation/WorldUraniumHearing/DoseLimits.txt>

#### **D. Mrs. Cassini Addenda**

[http://www.animatedsoftware.com/cassini/cass2004/MRS\\_CASSINI\\_ADDENDA.htm](http://www.animatedsoftware.com/cassini/cass2004/MRS_CASSINI_ADDENDA.htm)

“Rosalie Bertell has shown the expected numbers of cancer cases from exposure to ionising radiation. She calculated the risk to the world’s population from radiation-induced cancers. Her figures were based on official radiation risk estimates of the ICRP (International Commission on Radiological Protection), and UNSCEAR (the United Nations Scientific Committee on the Effects of Atomic radiation.) She came up with the following numbers of cancers induced:

**From bomb production and testing: 385 million;**

**From bomb and plant accidents: 9.7 million;**

**Routine discharges from power plant: 6.6 million; 5 million of these in nearby populations);**

**Total fatalities: 175 million.**

**We can add to these 235 million with genetic damage, causing a range of diseases, and 588 million children born with malformations.”**

#### **E. Health Effects of Tritium\_\_ December 1, 2006 \_Dr. Rosalie Bertell**

[https://www.facebook.com/notes/marushka-france/health-effects-of-tritium\\_\\_december-1-2006-\\_dr-rosalie-bertell/10152713374441649](https://www.facebook.com/notes/marushka-france/health-effects-of-tritium__december-1-2006-_dr-rosalie-bertell/10152713374441649)

#### **F. Quietly Eating Radioactivity**

**Dr. Rosalie Bertell, August 1992...** "I first heard segments from [the following speech by Dr. Rosalie Bertell](#) in a tape produced by *The Other America's Radio* in 1986. Dr. Bertell is President of the [International Institute of Concern for Public Health](#), in Toronto, Canada. She is a Doctor of Biometrics, and a researcher on cancer, leukemia and mortality among people exposed to nuclear power plants. The recording affected me deeply from that time forward. I recently obtained the (virtually) complete recording and include the transcription of it below the following excerpts. As Dr. Bertell states, "this is our future. And somehow or other there has to be communication between the scientists and the farmers and the activists and the ordinary people who see these things and the rest of the community because this is an alarm system for survival. This is something everybody needs to know if we're going to survive."  
<http://www.ratical.org/radiation/inetSeries/RB86.html>

#### **G. "Slowing Wrecking Our Planet" 2010 by Sister Dr. Rosalie Bertell**

"It seems quite clear to me that experimentation with one's life support system, the earth itself, is an experiment which fits this definition and requires informed consent!



#### **IV. Genomic Instability Induced by Ionizing Radiation**

*Radiation Research*© 1996, [Radiation Research Society](#), Volume 146, No 3 (1996) pp 247-258

Abstract:

Genomic instability is characterized by the increased rate of acquisition of alterations in the mammalian genome. These changes encompass a diverse set of biological end points including karyotypic abnormalities, gene mutation and amplification, cellular transformation, clonal heterogeneity and delayed reproductive cell death. The loss of stability of the genome is becoming accepted as one of the most important aspects of carcinogenesis, and the numerous genetic changes associated with the cancer cell implicate genomic stability as contributing to the neoplastic phenotype. Multiple metabolic pathways govern the accurate duplication and distribution of DNA to progeny cells; other pathways maintain the integrity of the information encoded by DNA and regulate the expression of genes during growth and development. For each of these functions, there is a normal baseline frequency at which errors occur, leading to spontaneous mutations and other genomic anomalies. This review summarizes the current status of knowledge about radiation-induced genomic instability. Those events and processes likely to be involved in the initiation and perpetuation of the unstable phenotype, the potential role of epigenetic factors in influencing the onset of genomic instability, and the delayed effects of cellular exposure to ionizing radiation are discussed.

<http://www.jstor.org/discover/10.2307/3579454?sid=21105527412693&uid=4&uid=3739560&uid=2&uid=3739256>

#### **V. “Chernobyl: Consequences of the Catastrophe for People and the Environment”**

by Alexey Yablokov, Vasily Nesterenko and Alexey Nesterenko

NY Academy of Sciences, Volume 1181, 2009.

5,000 Slavic language studies reviews, over 1,400 cited.

[http://www.strahlentelex.de/Yablokov\\_Chernobyl\\_book.pdf](http://www.strahlentelex.de/Yablokov_Chernobyl_book.pdf)

hard copy now available at Greko Printing P:734.453.0341;

email:orders@grekoprinting.com

Japanese version available at Amazon.jp – Section 4 (chapters 12-15) have not been included, 'too long'.

#### **VI. WHERE DOES FUKUSHIMA GO - Pacific and Atmosphere**

<https://www.facebook.com/notes/marushka-france/where-does-fukushima-go-upon-entering-the-pacific-ocean/10151889492501649>

#### **VII. IRSN (France)**

Among their many reports and videos, which are excellent, this one: Fukushima fallout over France was on par with the fallout in 50's-60s atmospheric atomic bomb tests

<http://www.irsn.fr/EN/publications/thematic-safety/fukushima/Pages/2-fukushima-understanding-environment.aspx>

#### **VIII. Radioisotopes cause organs, whole biological systems to "simply fall apart"**

“The evidence from the Chernobyl affected territories reveals the real-world consequences of a

simple and terrible new discovery: that the effects of low dose internal irradiation cause subtle changes in the genome that result in an increase in the general mutation rate. ... first seen in cells in the laboratory. The Chernobyl evidence, shows that this seems to be true for all species, for plants and animals and humans. It has profound implications that go beyond radiation protection and risk models.

“Krysanov ...find that mice living in the high irradiation zone, 22 generations after the initial exposure, are MORE radiosensitive than mice living in lower exposure areas. The same effect is reported for plants by Grodzhinsky who wryly points out that plants cannot exhibit the ‘radiophobia’ that many of the Chernobyl effects have been blamed on. This flies in the face of current ideas about genetic selection.

“The effects of genomic instability are apparent in the evidence of massive harm to the organs and systems of living creatures at low doses of internal exposure, resulting in a kind of radiation ageing associated with random mutations in all cells. At the higher doses in the ‘liquidators’, after some years, their bodies seem to simply fall apart. In an astonishing statement we hear from Yablokov that in Moscow 100% of the liquidators are sick, in Leningrad 85%. These are men that ran like hares into the radiation fields with improvised lead waistcoats cut from roofs and who, by stabilising the situation at the reactor, saved Europe from a nuclear explosion equivalent to 50 Hiroshima Bombs - an outcome that would have made most of it uninhabitable. They are forgotten.

“**WHOLE BIOLOGICAL SYSTEMS COLLAPSE**; at the cell level, at the tissue level and at the population level. Burlakova and Nazarov describe these subtle effects at lower doses of internal irradiation in laboratory cell systems and also people, Grodzhinsky shows the effects in plants, - higher for internal exposures than external, Krysanov shows the effects in wild animals and Yablokov and the Nesterenkos in the children and adults living and continuing to live in the contaminated territories. The effects clearly operate at what are presently thought to be vanishingly low doses.”

pg 2, "ECRR Chernobyl: 20 Years On"

ECRR = European Committee on Radiation Risk

Dr. Chris Busby, Scientific Secretary wrote Introduction.

book, 2006, was co-edited with Dr. Alexey Yablokov

“ECRR Chernobyl: 20 Years On”

the book!! <http://life-upgrade.com/DATA/chernobylebook.pdf>

Spanish [http://ciaramc.org/ciar/boletines/cr\\_bol226.htm](http://ciaramc.org/ciar/boletines/cr_bol226.htm)

**IX from a Business perspective: "Jeremy Rifkin Nuclear is Dead"**

<https://www.youtube.com/watch?v=V-jeOTodAdI>

**Business Analysis: Nuclear is Dead**

**(synopsis of Rifkin's 4 points:**

“#1 nuclear power was dead in the water in 1980's, post TMI (Three Mile Island)

– Climate change, “no CO2”... Nuclear power is 6% total in the world

scientists tell us that if it were to have an impact, would have to be 20% to have a MINIMUM impact would have to replace all existing nuclear plants and build 1600 more... that would mean building 3 nuclear plants EVERY 30 DAYS for 40 YEARS... by then, Climate Change will have run its course.

He would be surprised if 1 or 2 are replaced.



#2 --- 70 years in and there is no solution for Nuclear Waste. No underground solution is plausible. Any geologist will tell you we live on tectonic plates; underground cannot be secure.

#3 – we run into Uranium Deficits, just with the existing 400 plants. Prices go up. We could recycle for plutonium.. in an age of uncertainty and terrorism. NOT

#4 – and finally, the big one, the one most people do not realize. We don't have the water. Nuclear consumes vast amounts of water to operate. France uses 50% of their water for nuclear. on a coastal region, salt water, risk another Fukushima. It does not fit new technology, decentralized. Japan, Italy and Germany are out. I'd be surprised if nuclear has any life left." [Rifkin's point that from a business perspective, the nuclear industry has 'no life' in it.]

## **X. Paths of Sustainable Change**

**A. Sustainability:** we must change our collective mind and act with decisiveness and with respect and compassion for all life, as a species in harmony with the planet, as a part of the web of life. change or perish...

"....the great discovery of the modern era is not how to make nuclear fire, or alter our genes, or communicate at the speed of light but, rather, the discovery of our interconnectedness and implicatedness in the web of life. What Thomas Berry calls the "Great Work" of the 21st century will be to comprehend what that awareness means in every area of life in order to calibrate human demands with what the Earth can sustain. Broadly speaking, the transition to sustainability poses four challenges.... " <http://www.ratical.org/radiation/inetSeries/RB89.html>

Four Challenges of Sustainability

David W. Orr

School of Natural Resources - The University of Vermont

author of Ecological Literacy and Earth in Mind

<http://ratical.com/co-globalize/4CofS.pdf>

**B. Cradle to Cradle Design** <https://www.youtube.com/watch?v=IoRiz8iTVoo>

"Green-minded architect and designer William McDonough asks what our buildings and products would look like if designers took into account "all children, all species, for all time."

**C. Renewable Energy Infrastructure is enough to fulfill our needs – for all.**

Stanford Report, January 26, 2011

"The world can be powered by alternative energy, using today's technology, in 20-40 years, says Stanford researcher Mark Z. Jacobson A new study – co-authored by Stanford researcher Mark Z. Jacobson and UC-Davis researcher Mark A. Delucchi – analyzing what is needed to convert the world's energy supplies to clean and sustainable sources says that it can be done with today's technology at costs roughly comparable to conventional energy. But converting will be a massive undertaking on the scale of the moon landings. What is needed most is the societal and political will to make it happen. "

<http://news.stanford.edu/news/2011/january/jacobson-world-energy-012611.html>

Stanford Professor Mark Jacobson at Pathways to 100% Renewable Energy Conference  
last 100 years, 100 million died too soon!

[http://www.youtube.com/watch?v=\\_XCyICF3QuQ](http://www.youtube.com/watch?v=_XCyICF3QuQ) 13mins

w/ Mark A. Ruffalo, Marco Krapels, and Mark Z. Jacobson

[http://www.youtube.com/watch?v=N\\_sLt5gNAQs](http://www.youtube.com/watch?v=N_sLt5gNAQs) 1hour

[thesolutionsproject.org](https://thesolutionsproject.org)

***May all Beings Benefit!***