Rulemaking1CEm Resource

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FRN#: 80FR35870
NRC DOCKET#: NRC-2015-0057
SECY DOCKET DATE: 11/19/15
TITLE: Linear No-Threshold Model and Standards for Protection Against Radiation
COMMENT#: 550

From: Vic Macks [mailto:vicmacks3@gmail.com]
Sent: Thursday, November 19, 2015 9:13 PM
To: RulemakingComments Resource <RulemakingComments.Resource@nrc.gov>
Subject: [External_Sender] Docket ID NRC-2015-0057.

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vicmacks3@gmail.com November, 19, 2015

US Nuclear Regulatory Commission (NRC): Consultation
https://www.federalregister.gov/articles/2015/06/23/2015-15441/linear-no-threshold-model-and- standards-for-protection-against-radiation

These comments address the the proposals listed below.

The Petitioners, Carol Marcus, Mark Miller and Mohan Doss are asking NRC to do the following:
CAROL MARCUS: https://www.federalregister.gov/articles/2015/06/23/2015-15441/linear-no-threshold-model-and-standards-for-protection-against-radiation#p-34
The petitioner recommends the following changes to 10 CFR part 20:Show citation box
(1) Worker doses should remain at present levels, with allowance of up to 100 mSv (10 rem) effective dose per year if the doses are chronic.
(2) ALARA should be removed entirely from the regulations. The petitioner argues that "it makes no sense to decrease radiation doses that are not only harmless but may be hormetic."
(3) Public doses should be raised to worker doses. The petitioner notes that "these low doses may be hormetic. The petitioner goes on to ask, "why deprive the public of the benefits of low dose radiation?"
(4) End differential doses to pregnant women, embryos and fetuses, and children under 18 years of age.

MARK MILLER: https://www.federalregister.gov/articles/2015/06/23/2015-15441/linear-no-threshold-model-and-standards-for-protection-against-radiation#p-34

(1) Worker doses should remain at present levels, with allowance of up to 100 mSv (10 rem) effective dose per year if the doses are chronic.Show citation box
(2) ALARA should be removed entirely from the regulations. The petitioner argues that "it makes no sense to decrease radiation doses that are not only harmless but may be hormetic."
(3) Public doses should be raised to worker doses. The petitioner notes that "these low doses may be hormetic. The petitioner states, "[l]ow-dose limits for the public perpetuates radiophobia."

MOHAN DOSS: (Scientists for Accurate Radiation Information)
https://www.federalregister.gov/articles/2015/06/23/2015-15441/linear-no-threshold-model-and-standards-for-protection-against-radiation#p-36
… This petitioner provides additional information suggesting that "low-dose radiation reduces cancer risk" (i.e., has a hormetic [beneficial] effect) and suggests that the "LNT model is no longer justifiable." The petitioner further states that the use of the LNT hypothesis in the NRC's regulations has "had a major detrimental effect on public health, since they have prevented the study of LDR [low-dose radiation] for controlling aging-related diseases such as cancer, Alzheimer's disease, Parkinson's disease, etc. in spite of studies showing the promise of LDR for the diseases." The petitioner suggests that "urgency of action on this petition" is necessary because "any potential future accident involving release of radioactive materials in the USA would likely result in panic evacuation because of the LNT—model-based cancer fears and concerns, resulting in considerable casualties and economic damage such as have occurred in Fukushima." The petitioner further suggests that the "recognition of a threshold dose by NRC would obviate the need for such panic evacuations, associated casualties, and economic harm" when radiation is released in the environment.

These proposals, by Carol Marcus, Mark Miller and Mohan Doss, if implemented, would be an assault on all life forms from humans to plants, would produce more broad spectrum illness, morbidity and genetic mutations, and further the poisoning the human gene pool.
The public is deprived of real time measurement of radiation releases from uranium mining, nuclear reactor operation and accidents, nuclear weapons production and use, and burdened with the legacy of the ever increasing volume of man-made radionuclides ionizing into all future generations with no solution or plan for shielding and monitoring forever. The petitioners proposals would add to that immoral burden.

Quoting from Dr Ian Fairlie
Consultant on Radioactivity in the Environment LONDON
United Kingdom www.ianfairlie.org http://www.ianfairlie.org/wp-content/uploads/2015/08/US-NRC-Consultation-4-1.pdf
"Hormesis advocates typically argue that although radiation attacks DNA and causes mutations, DNA repair mechanisms quickly correct these. These mechanisms are certainly numerous and busy – it is estimated over 15,000 repairs per hour are carried out in each cell – but from the sheer number of repairs, many misrepairs occur and it is the misrepairs that cause the damage.
But even if the existence of hormesis were accepted, the question remains – what relevance would it have for radiation protection? The answer- as stated repeatedly in official reports by UNSCEAR and BEIR etc - is zero. For example, do we give "tickle" doses to people about to undergo radiation therapy, or to nuclear workers? Of course, we don't.
And what about background radiation? All of us receive small "tickle" doses of radiation – about 3 mSv per year of which about 1 mSv is from external gamma radiation. Do these somehow protect us from subsequent radiation? How would we notice? And if it did, so what? That is, what relevance would it have for radiation protection, eg setting radiation standards? The answer is again ....none. Indeed, as we show below, increasing evidence exists that even background radiation itself is harmful.

Does the available epidemiological evidence show risks declining linearly with dose at low doses? Yes, recent epidemiology studies do indeed show this, and the important new points are that these are (a) very large studies with good confidence intervals, and (b) at very low doses, even down to background levels."

Source: http://www.thelancet.com/journals/lanhae/article/PIIS2352- 3026%2815%2900094-0/fulltext

"Two interesting things about this study are that 5 of the 13 authors are from US scientific institutes, including the Centers for Disease Control and Prevention, the National Institute for Occupational Safety and Health, the Department of Health and Human Services, University of North Carolina, and Drexel University School of Public Health. Also that the study was funded by many international agencies, including the US Centers for Disease Control and Prevention, US National Institute for Occupational Safety and Health, US Department of Energy, and the US Department of Health and Human Service.
It is legitimate to ask whether the NRC is in contact with these official US agencies about its consultation."

"…. the Zablotska study after Chernobyl. Graph 2 below, reproduced from Zablotska et al (2012), shows statistically significant risks for all leukemias and for chronic lymphocytic leukemia (CLL) in over 110,000 Chernobyl cleanup workers."

"Third is the very recent cohort study of radiation exposures from medical CT scans in the UK by Pearce et al (2012). 74 out of 178,604 patients diagnosed with leukaemia and 135 out of 176,587 patients diagnosed with brain tumours were analyzed….. the authors noted a positive association between radiation doses from CT scans and leukaemia and brain tumours….with a 95% confidence…."

"….the risks from background radiation – yes, even from background radiation. Kendall et al in 2012 conducted a large UK record-based case–control study testing associations between childhood cancer and natural background radiation with over 27,000 cases and 37,000 controls. Surprisingly, they observed an elevated risk of childhood leukaemia with cumulative red bone marrow dose from natural background gamma radiation. See the similar findings in a very recent study by Spycher et al (2015) …."

"….final analysis of the UK National Registry for Radiation Workers (NRRW). This study of observed 11,000 cancer cases and 8,000 cancer deaths in 175,000 UK radiation workers with an average individual cumulative dose of 25 mSv and an average follow-up of 22 years….the results from the US BEIR VII report for comparison – the two are very similar…."(supports the linear no threshold risk for cancer).

"….the meta-analysis of 13 European studies in 9 EU countries on indoor radon exposure risks by Darby et al (2005). This examined lung cancer risks at measured residential Rn concentrations with over 7,000 cases of lung cancer and 14,000 controls. The action level for indoor radon in most EU countries is 200 Bq per m3, corresponding to about 10 mSv per year. (This is derived from a UNSCEAR (2000) reference value of 9 nSv per Bq·h/m3. This means that people living 2/3rds of their time indoors (5,780 h/year) at a Rn concentration of 200 Bq/m3 would receive an effective dose of ~10 mSv/year….the study shows elevated risks at concentrations well below this level."

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