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From: RulemakingComments Resource
Sent: Wednesday, November 25, 2015 8:45 AM
To: Rulemaking1CEm Resource
Subject: Comment on PRM-20-28, PRM-20-29, and PRM-20-30
Attachments: NRC-2015-0057-DRAFT-0542.pdf

DOCKETED BY USNRC—OFFICE OF THE SECRETARY

SECY-067
PR#: PRM-20-28, PRM-20-29, and PRM-20-30
FRN#: 80FR35870
NRC DOCKET#: NRC-2015-0057
SECY DOCKET DATE: 11/18/15
TITLE: Linear No-Threshold Model and Standards for Protection Against Radiation
COMMENT#: 593

Hearing Identifier: Secy_RuleMaking_comments_Public
Email Number: 1402

Mail Envelope Properties (a8b9d4b337f143d5b4301b22cfef6360)

Subject: Comment on PRM-20-28, PRM-20-29, and PRM-20-30
Sent Date: 11/25/2015 8:44:41 AM
Received Date: 11/25/2015 8:44:43 AM
From: RulemakingComments Resource

Created By: RulemakingComments.Resource@nrc.gov

Recipients:
"Rulemaking1CEm Resource" <Rulemaking1CEm.Resource@nrc.gov>
Tracking Status: None

Post Office: HQPWMSMRS02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	288	11/25/2015 8:44:43 AM
NRC-2015-0057-DRAFT-0542.pdf	67675	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

PUBLIC SUBMISSION

As of: 11/23/15 2:14 PM
Received: November 18, 2015
Status: Pending_Post
Tracking No. 1jz-8mbz-ruqc
Comments Due: November 19, 2015
Submission Type: Web

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

Comment On: NRC-2015-0057-0086
Linear No-Threshold Model and Standards for Protection Against Radiation; Extension of Comment Period

Document: NRC-2015-0057-DRAFT-0542
Comment on FR Doc # 2015-20722

Submitter Information

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General Comment

A review of the scientific literature reveals no compelling evidence in support of the LNT thesis. The theoretical model proposed to explain how a single ionizing ray or particle can cause cancer is not consistent with our current understanding of carcinogenesis. One DNA double strand break is not enough to cause cancer even if it occurs in a "so-called" oncogene. Cancer is a consequence of significant amounts of damage to a variety of genes.

Some have observed that we evolved in a radioactive environment and developed DNA repair mechanisms to compensate. The fact is that we experience far more DNA double strand breaks during mitotic cell division than we do from exposure to background radiation. The biological mechanisms deployed to repair DNA damage caused by mitotic cell division are well documented. Thus, the rate of DNA damage that we can accommodate is also documented. That rate of damage is substantially greater than zero. Thus the LNT model cannot be correct.

There are regions of the world where background radiation levels are many fold higher than average. Studies of large cohorts of subjects living in these higher radiation zones reveal no excess cancer or any other disease.

The evidence that the relationship between radiation exposure and excess cancer is linear cannot be demonstrated below a particular threshold because no cohort large enough that has been exposed to this threshold has been studied. Large cohort studies are needed to provide the statistical power required to arrive at any conclusions.

More research is required. I suggest that there have been enough nuclear workers in the US to establish a large enough cohort to test the validity of LNT.

All research costs money to carry out; however, if such research reveals that there is a threshold below which no damage accrues there will be savings associated with nuclear waste management that will more than compensate for the cost of finally ending this controversy.