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From: RulemakingComments Resource
Sent: Monday, November 23, 2015 4:37 PM
To: Rulemaking1CEm Resource
Subject: Comment on PRM-20-28, PRM-20-29, and PRM-20-30
Attachments: NRC-2015-0057-DRAFT-0549.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: 11/19/15

TITLE: Linear No-Threshold Model and Standards for Protection Against Radiation

COMMENT#: 564

Hearing Identifier: Secy_RuleMaking_comments_Public
Email Number: 1373

Mail Envelope Properties (557b105d97514a5f92f7434804ab6a33)

Subject: Comment on PRM-20-28, PRM-20-29, and PRM-20-30
Sent Date: 11/23/2015 4:37:23 PM
Received Date: 11/23/2015 4:37:25 PM
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	298	11/23/2015 4:37:25 PM
NRC-2015-0057-DRAFT-0549.pdf		70801

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

As of: 11/23/15 2:27 PM
Received: November 19, 2015
Status: Pending_Post
Tracking No. 1jz-8mcf-34lb
Comments Due: November 19, 2015
Submission Type: Web

PUBLIC SUBMISSION

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-0549

Comment on FR Doc # 2015-20722

Submitter Information

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General Comment

Invest in studies on the effects of low dose radiation!

I'd like to start with a quote from Stuart Brand, one of the founding fathers of the environmental movement, who in turn quotes Kistiakowsky.

[In his 1976 book, A Scientist at the White House, George Kistiakowsky, President Eisenhower's Science Advisor, told what he wrote in his diary in 1960 on being exposed to the idea of LNT by the Federal Radiation Council:

"It is a rather appalling document which takes 140 pages to state the simple fact that since we know virtually nothing about the dangers of low-intensity radiation, we might as well agree that the average population dose from man-made radiation should be no greater than that which the population already receives from natural causes; and that any individual in that population shouldn't be exposed to more than three times that amount, the latter figure being, of course, totally arbitrary."

Later in the book, Kistiakowsky, who was a nuclear expert and veteran of the Manhattan Project, wrote: "...A linear relation between dose and effect... I still believe is entirely unnecessary for the definition of the current radiation guidelines, since they are pulled out of thin air without any knowledge on which to base them.]"

Now, half a century after the LNT guideline was 'pulled out of thin air', we know that the theoretical reasoning underlying the LNT guideline is invalid. The proposed physiological model of LNT is inconsistent with our current understanding of the pathology of cancer.

Yet the continued use of the LNT guideline, after having been firmly established for over half a century in

regulations for radiation safety, is often interpreted as a confirmation of there being objective dangers of low level radiation. The very meaning of there being 'no threshold' has led to LNT functioning as a cost driver that also has 'no threshold', leading to billions of dollars spend on the prevention of imagined deaths.

LNT has become a major obstacle in the public acceptance of nuclear power, effectively blocking its potentially major contribution to both climate change mitigation and reduction of energy poverty.

However, the debate can only be settled through rigorous empirical studies on the effects of low dose radiation on human health. Such studies, if their outcomes will be adequately applied to updates in the radiation safety regulations, will prove to be a very cost effective way of improving the cost competitiveness of nuclear power. It is of paramount importance that the US invest in low-level radiation research, and that policies, regulations, and public risk perceptions be based on scientific evidence.

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