

# PUBLIC SUBMISSION

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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

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## Submitter Information

**Name:** concerned citizen

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## General Comment

Please do NOT change the radiation threshold. Ionizing radiation absorbed by human tissue has enough energy to remove electrons from the atoms that make up molecules of the tissue. When the electron that was shared by the two atoms to form a molecular bond is dislodged by ionizing radiation, the bond is broken and thus, the molecule falls apart. Damage to a cells DNA in either of these ways can have several consequences. A single-strand DNA break is usually repaired appropriately by the cell with no subsequent deleterious sequelae. However, a break affecting both strands of DNA allows the potential for abnormal reconnection of the strands, which likely accounts for all the adverse biological effects ionizing radiation has on humans. First, DNA may rejoin itself incorrectly, rendering the cell nonviable with cell death taking place. Second, it may rejoin as a symmetrical translocation with the potential expression of an oncogene during division (and development of subsequent malignancy) or with abnormal division in gonads, giving rise to future hereditary disorders.