

**Response to Public Comments on Draft Regulatory Guide (DG)-8033**  
**“Operating Philosophy for Maintaining Occupational Radiation Exposures**  
**As Low As Is Reasonably Achievable”**  
**Proposed Revision 2 of Regulatory Guide (RG) 8.10**  
(Public comments have been edited for clarity)

On December 24, 2015, the NRC published a notice in the *Federal Register* (80 FR 80395) that Draft Regulatory Guide, DG-8033 (Proposed Revision 2 of RG 8.10), was available for public comment. The Public Comment period ended on February 22, 2016. The NRC received comments from the organizations listed below. The NRC has set forth the comments and NRC staff responses thereto in the following table:

Comments were received from the following:

Dr. Carol S. Marcus, < <a href="mailto:csmnarcus@ucla.edu">csmnarcus@ucla.edu</a> > Department of Nuclear Medicine and Radiological Sciences, David Geffen School of Medicine, UCLA 1877 Comstock Ave, Los Angeles, CA 90025-5014 ADAMS Accession Number ML16008A971	Mr. Andrew O’Connor < <a href="mailto:andrew.jp.oconnor@outlook.com">andrew.jp.oconnor@outlook.com</a> > 1683 Wood Pl Longview, TX 75601 Dated: January 6, 2016 ADMAN Accession Number ML16015A323.	Ms. Nima Ashkeboussi < <a href="mailto:nxa@nei.org">nxa@nei.org</a> > 1201 F Street, NW, Suite 1100 Washington, DC 20004. Dated: February 22, 2016 Accession Number ML16063A146.
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Commenter	Section of DG-8033	Specific Comments	NRC Resolution
Dr. Carol Marcus	General Comment	<p>“I do not find the philosophy of the NRC staff acceptable. I do not find the concept of ALARA acceptable at levels below 5 rem/y.”</p> <p>Dr. Marcus asserts that the ALARA concept relies upon the “flawed” linear no-threshold (LNT) hypothesis; LNT is flawed as is does not account for radiation repair. In this regard, Dr. Marcus states that research shows that over 150 genes repair damage to the body from noxious agents, including ionizing radiation. Dr. Marcus refers to her February 9, 2015</p>	<p>The NRC disagrees with the comment. The NRC acknowledges that the basis for the ALARA requirement (i.e., that the stochastic effects of radiation do not have a lower dose threshold) is not accepted by all persons who have an interest or involvement in radiation protection. The NRC’s longstanding position, however, is that the LNT hypothesis is scientifically valid. The NRC uses the linear, non-threshold hypothesis as a basis for its regulatory approach, a position that is in accord with the views of national and international expert guidance and is</p>

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		petition for rulemaking, PRM-20-28 for further support (the NRC published the docketing notice for Dr. Marcus' petition in the <i>Federal Register</i> on June 23, 2015 (80 FR 35870). Resolution of Dr. Marcus' petition is pending.	<p>consistent with the current understanding of the radiogenic effects of radiation exposure in humans.</p> <p>For the purpose of issuing this regulatory guide, the NRC position remains that the ALARA concept is an appropriate radiation protection model.</p> <p>The NRC is currently evaluating Dr. Marcus' petition for rulemaking (docketed at PRM-20-28). In the event that the NRC changes its regulatory position on the LNT hypothesis, this regulatory guide will be revised accordingly.</p>
Andrew O'Connor	General comment	"I urge the Commission to reject the unproven and even injurious ALARA principles based on a faulty assumption of LNT model of biological radiation effects."	The NRC disagrees with the comment. The NRC acknowledges that the basis for the ALARA requirement (i.e., that the stochastic effects of radiation do not have a lower dose threshold) is not accepted by all persons who have an interest or involvement in radiation protection. The NRC's longstanding position, however, is that the LNT hypothesis is scientifically valid. The NRC uses the linear, non-threshold hypothesis as a basis for its regulatory approach, a position that is in accord with the views of national and international expert guidance and is consistent with the current understanding of the radiogenic effects of radiation exposure in humans.
Nima Ashkeboussi	Clarification for Section titled, "Harmonization with International Standards."	"...suggest that the entire Section be deleted. If the Section remains, we recommend that the sentence 'The NRC encourages licensees to consult these international documents and implement the best practices, where applicable' be deleted."	The NRC agrees with the comment in part: The Section remains, but the specific sentence "The NRC encourages licensees to consult these international documents and implement the best practices, where applicable" has been deleted entirely. In addition, the NRC has deleted the reference to ICRP 103 given that the NRC staff has recommended to the Commission that the Part 20 rulemaking effort to adopt certain recommendations of

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			ICRP 103 be discontinued. The reference to the IAEA Safety Standards has also been deleted as certain aspects of that document conflict with 10 CFR Part 20 provisions.
Nima Ashkeboussi	Recommendation for Section C.1	“...recommend that the Section C.1. sixth bullet be deleted.” The sixth bullet of DG-8033, Section C.1., recommended that the licensee conduct a formal audit to determine how exposures could be lowered. Ms. Ashkeboussi notes that there is no regulatory requirement for such an audit.	The NRC agrees with the comment. The specific bullet content has been deleted.
Nima Ashkeboussi	Clarification for Section C.2.	“On Page 6, Section C.2, the fourth bullet “Requires an annual review of a portion of the radiation protection program so that all phases of the radiation protection program will be reviewed on a 2-3 year review cycle.” 10 CFR 20.1101(c) requires an annual program review. Does the guidance change the regulations to 2-3 years to complete the program review?”	The NRC agrees with the comment. Modifications were made in the specific Section. The “2-3 year review cycle” language was removed.
Nima Ashkeboussi	Clarification for Section C.3.	“Section C.3, the first bullet, the words ‘Be responsible for being’ is redundant. We suggest deleting the word ‘Be’.”	The NRC agrees with the comment. The language has been revised accordingly.
Nima Ashkeboussi	Clarification for Section C.3.	“Section C.3, third bullet, replace “practicable” with “practical.”	The NRC agrees with the comment. The language has been revised accordingly.