From: Mark M Giese
Sent: Wednesday, October 28, 2015 12:59 PM
To: Hanlon, Edward <Hanlon.Edward@epa.gov>
Subject: protect the vulnerable from radioactivity

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Please protect the vulnerable from radioactivity.

If EPA ORIA does decide to update the 1977 radiation exposure standards, there are at least Five key issues on which RAC should advise EPA so that EPA may be better able to protect the public, particularly pregnancy and early childhood life stages, from exposure to radioactivity.

1. The RAC should help EPA use existing frameworks to establish regulations that fully protect for vulnerable life stages, despite remaining uncertainties of radiation's impact on early human development.

2. Since the RAC's charge is to advise ORIA on this potential rewrite of radiation standards, RAC should make a special effort to emphasize protection against unique impacts on early life stages. To this end, RAC might want to consult with, or offer committee memberships to, pregnancy and/or child health and development experts who are familiar with impacts of toxic chemicals or radioactive isotopes on these vulnerable stages. Greater representation of scientific disciplines such as genetics, evolutionary biology, and ecology might also provide a benefit to this committee as it aids EPA ORIA in its charge.

3. If EPA decides to integrate ICRP recommendation into new exposure standards, the RAC should aid EPA in overcoming the deficits in ICRP assumptions. Not only does ICRP fail to specifically account for some unique vulnerabilities that occur during developmental life stages which could result in non---cancer diseases, but studies of childhood cancer risks indicate that current ICRP exposure limits for the in utero life stage are not protective enough overall.

4. RAC should help guide EPA to protect for genetic impacts of radiation exposure past the second generation since the ICRP model doesn't extend that far. EPA should not assume that, although cancer may carry the greatest impact most immediately, genetic and epigenetic impacts won't surpass this risk in a few generations.

5. RAC should point to concrete ways EPA can combat the "magical thinking" that believes dose estimation is much more reliable than it actually is. This belief remains steadfast—even if radiation---associated diseases increase in a population, unreliable dose estimates are used to

claim radiation is not responsible. These dose estimations have often been based on averaged radiation releases measured by industry. Measurement of these releases has been fraught with secrecy and improper measurement technique, resulting in unrealistic exposure scenarios that are then relied upon for health impact assessments.

Thank you.