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EDWARD J. MARKEY
7TH DISTRICT, MASSACHUSETTS

Congress of the United States
House of Representatives
Washington, DC 20515–2107

2108 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–2107
(202) 225–2836

DISTRICT OFFICES:

5 HIGH STREET, SUITE 101
MEDFORD, MA 02155
(781) 396–2900

188 CONCORD STREET, SUITE 102
FRAMINGHAM, MA 01702
(508) 875–2900

http://markey.house.gov

October 27, 2009

The Honorable Lisa Jackson
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Jackson:

I write out of concern about reports that the Environmental Protection Agency (EPA) may be considering a series of actions that could weaken radiation standards and protective guidance, ignoring sound scientific recommendations and dismantling decades of EPA policies for protection of the public from ionizing radiation. If the EPA chooses to proceed with these actions, it could put public health at risk and threatens to undermine the public's confidence in the regulator that is meant to protect it.

The Obama Administration has vowed to put an end the previous Administration's politicization of science, however there are several disturbing initiatives that commenced during the prior Administration that are still pending before EPA. It is imperative that the way in which EPA proceeds with respect to these initiatives and the decisions and guidelines it makes regarding radiation standards be based on sound science and objective evaluation of risks to human health.

In 2006, the National Academy of Sciences (NAS) and National Research Council (NRC) issued its report on the Biological Effects of Ionizing Radiation (BEIR VII: Health Risks from Exposure to Low Levels of Ionizing Radiation) partly sponsored by EPA.[1] The report represented a 5-year effort to examine all available information related to the health effects associated with exposure to low levels of radiation. BEIR VII found that radiation was about a third more dangerous in producing cancers than previously assumed and that even the "smallest dose has the potential to cause a small increase in risk to humans."

[1] http://www.nap.edu/openbook.php?isbn=030909156X

I have been informed that historically, the BEIR reports have formed the underpinning for the EPA's so-called "Blue Book", which in turn drives the basis for radiation protection regulations through Federal Guidance Reports (FGR) made by EPA. However, in December 2008, the EPA Office of Radiation and Indoor Air (ORIA) released a draft "Blue Book" entitled "EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population" that proposed to disregard almost every risk figure reported in BEIR VII. In fact, in the great majority of cases ORIA proposed to use a lower risk figure than that recommended by BEIR VII. Adopting these lower risk figures, would result in relaxed regulations and a concomitant increase in public exposures to radiation and potential radiation-induced cancers relative to the adoption of the BEIR VII risk values. This has significant ramifications for all of EPA's regulatory activities even outside of ORIA, including those under the responsibility of Office of Solid Waste and Emergency Response (OSWER) and the Office of Water (OW).

As the Chairman of the House Energy and Commerce Committee's Subcommittee on Energy and the Environment, which has jurisdiction over nuclear energy and waste, regulation of solid and hazardous waste and protection of drinking water, I am concerned about the potential health risks imposed by EPA's radiation guidance and standards. To assist the Subcommittee in the oversight of these issues, and of the EPA's administration of the laws and regulations relating to radiation protection, please respond to the following questions:

1. What is the status of ORIA's proposed Blue Book that acts to reduce the radiation risk estimates from what was recommended by the NAS in the BEIR VII report?
2. Why did ORIA title the White Paper "Modifying EPA Radiation Risk Models Based on BEIR VII", when in fact the revisions made to the risk models ignored BEIR VII findings? Why were the revisions that were made almost all in the direction of increasing permissible exposures compared to the guidance that would have resulted had the Academies' findings been adhered to?
3. Who was responsible for making the decision to reduce the risk estimates? Please provide all correspondence, including emails, letters, and memos that relate to the decision to ignore the BEIR VII findings.
4. EPA bases its evaluation of compliance with most of its regulations limiting dose to the general public on the "Reference Man" standard--a hypothetical Caucasian healthy young adult male occupationally exposed to radiation. This compliance assessment method is scientifically inappropriate because the vast majority of people, including women and children, fall outside the definition. The EPA has published a guidance report, FGR 13, that enables dose calculation by age.
    a. Would you agree that, using FGR 13 published by the EPA itself, children get higher doses of radiation in some cases from the same environmental conditions as an adult male even when lower intakes are taken into account? Why or Why not?
    b. Why is the EPA not enforcing regulations to protect all individuals, including children? For instance, why is the EPA allowing compliance with the Clean Air Act to be demonstrated by calculating doses only for Reference Man just for the sake of "consistency" with past practice?

c. Do you believe that calculations of exposure doses and compliance should be based on the most exposed individual, thereby increasing public protection? Please explain.
d. If the EPA agrees that children should be protected along with the rest of the population, when is the EPA going to begin enforcing existing annual dose limits to require the calculation of dose to the most exposed individual, regardless of age?

5. It is my understanding that some EPA Guidance documents, like FGR 11 and 12 rely on Reference Man, while FGR 13 contains age specific data that is averaged for males and females.
   a. For internal dose, why does the EPA still allow the use of the older FGR 11, which is based on Reference Man, when it has the updated FGR 13, which enables calculation of dose by age?
   b. When does the EPA plan on updating FGR 12 using gender and age specific dose conversion factors? Please provide a detailed timeline.
   c. When does the EPA plan to revise FGR 13 to include separate dose conversion and risk factors for males and females by age? Please provide a proposed timeline.
   d. Does the EPA have plans to develop and publish fetal dose conversion factors? Why or Why not?
6. BEIR VII stated that there is mounting evidence that X-rays and low-energy betas like tritium are more dangerous than previously thought (producing more cancers per unit dose than the standard risk estimates), concluding: "It may be desirable to increase risk estimates in this report by a factor of 2 or 3 for the purpose of estimating risks from low-dose X-ray exposure." However, the Radiation Advisory Committee, in reviewing the draft Blue Book, recommended that EPA not upgrade the risk estimates at this time but rather study the matter further, in what could be a long, drawn-out process. Members of the Science Advisory Board questioned this recommendation, asking why EPA should continue using values it knows are wrong and too low.
   a. Is the EPA going to act on the BEIR VII scientific findings by tightening prior exposure and environmental concentration limits for tritium and X-rays by at least a factor of 2? Why or Why not?
   b. As I understand, to compare the biological risk of different types of radiation it is customary to calculate the relative biological effectiveness (RBE) using X-rays as the reference standard. Does the EPA believe it is ethical to continue to use a RBE factor of one for X-rays, when in fact it is known that the RBE is greater than 1? Please explain, particularly in light of the very large collective X-ray doses being received by the U.S. population due to widespread use of CT scans in medicine.
   c. Is there evidence that the RBE factors for X -rays and low energy beta radiation to fetuses are higher than the range of 2 to 3? If there is such evidence, what is the EPA going to do to better protect pregnant women from these sources?

In the last days of the Bush Administration, the EPA's highly controversial revisions to its Protective Action Guides (PAGs), which would apply to all radiological incidents (defined as "an event or a series of events, whether deliberate or accidental, leading to the release or potential release into the environment of radioactive materials in sufficient quantity to warrant consideration of protective actions"), were transmitted to the Federal Register for publication. These PAGs essentially describe a standard of what would be considered acceptable and safe concentrations of radiation exposure in the early, intermediate, and long-term periods following a radioactive release, levels below which no protective actions for the public would be required.

The proposed PAG revisions would permit radioactivity concentrations in drinking water during the intermediate phase (for 1-2 years after the release) that are orders of magnitude higher than EPA's long-held drinking water standards and suggests that government officials need not provide clean water until groundwater radioactivity is thousands of times higher than traditional Superfund guidance. Furthermore, the PAGs propose applying a long-term cleanup approach known as "optimization" to incidents in which radiological contamination has occurred. This process of "optimization" allows cleanup standards far outside EPA's traditional acceptable risk range, so high that they could result in public exposures that are the equivalent of approximately 50,000 chest X-rays, with a cancer risk that EPA itself estimates at a remarkable 1 in 4.

My understanding is that in the first days of office, the Obama Administration prevented these revisions from being published in the Federal Register pending further review by the EPA. I urgently call for your attention in this matter, to assure that the PAGs do not get issued with these serious flaws.

Please respond to the following questions related to the PAGs:

1. What is the status of the PAGs review by the new EPA leadership? Please provide a detailed timeline and any preliminary conclusions.
2. Will you decline to approve the ORIA proposal increasing permissible concentrations of radioactivity in drinking water after a radioactive release by factors of thousands, or more, compared to longstanding EPA maximum contaminant levels (MCLs)?
3. Who was responsible for producing the calculations for the proposed water concentrations? How were these calculations reached? Please provide documentation supporting the method used and all correspondence leading to the decision to adopt this methodology.
4. How could EPA possibly abandon its longstanding cleanup standards and acceptable risk range and propose adopting an "optimization" process whereby long-term cleanup standards could be as high as 10 rem per year, a 1 in 4 cancer risk over 30 years of exposure - orders of magnitude higher than EPA's longstanding acceptable risk range of 1 in 10,000 to one in a million? Why should people who have been subject to a nuclear incident be further subjected to a relaxation of the standards EPA has previously deemed safe?

5. Is the EPA concerned that the "optimization" plans could set a precedent that would lead to less protective standards being applied to a broad range of scenarios, thereby causing an erosion of EPA public health protection standards. Please explain.
6. Will EPA withdraw its support for the use of optimization in other types of events, e.g., the controversial "dirty bomb" guidance issued during the previous Administration by a taskforce including EPA and the Department of Homeland Security, and EPA-DHS recent draft guidance for bioterrorism events? Why or Why not?
7. In September 2009, EPA issued new guidance on optimization following a radiological incident[2]. Why would EPA do this, when this controversial approach from the prior Administration was supposed to be under review by the new Administration?

Thank you very much for your prompt attention to this important matter. Please provide your response no later than Tuesday November 17, 2009. If you have any questions or concerns, please have your staff contact Dr. Avenel Joseph or Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,

Edward J. Markey

Edward J. Markey
Chairman
Subcommittee on Energy and Environment

Cc: Honorable Henry Waxman
Chairman
Energy and Commerce Committee

Honorable Joe Barton
Ranking Member
Energy and Commerce Committee

Honorable Fred Upton
Ranking Member
Subcommittee on Energy and Environment

[2]See footnote 17, GAO testimony, http://www.gao.gov/new.items/d09996t.pdf