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Subject: Comments on Docket ID NRC-2009-0279, RIN 3150-AJ29, 10CFR Part 20, Radiation Protection
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To: U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

From: Allen Brodsky, Sc.D., CHP, CIH, DABR
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Subject: My personal comments on Docket ID-NRC-2009-0279, 10 CFR20 ANPR

In this memo, I first want to support, as good science and judgments, the statements in the letter from Dr Jeffrey Seigel and his co-signers on this docket ANPR. I will soon send some more detailed comments, and answers to some of the questions in this ANPR, likely within about one week.

My review of the ANPR, together with my experiences in government and the private sector, does lead me to conclude that there is NO SAFETY BENEFIT at all, and much further burden to the already overburdened and unsupported nuclear energy and radioactive byproduct industries, to making further changes in 10 CFR 20. Some of the changes made in ICRP and NCRP "RECOMMENDATIONS" might be considered for non-binding regulatory guidance, but the nuclear energy and radiation-users are already as safe or safer than any other industries -- despite media reports, and further changes in binding NRC regulations are not needed in the interest of safety, for workers or the public.

I wrote the ALARA document for medical institutions while at NRC. The acronym ALARA stands for "As low as REASONABLY ACHIEVABLE", considering economic and other health benefits as well as level of radiation risks. Under the then-applicable LNT assumptions and its simplifying management advantages at the time, I also wrote ALARA regulatory guidance. In 1965, long before the ICRP recommended, I published a paper in the American Journal of Public Health, utilizing concepts of justification, limitation, and ALARA. I showed, using the simplest arithmetic series, how a successive series of proposed products using small amounts of radioactive material could be considered by an agency like the NRC for general licensing and public distribution, optimizing benefit/risk ratios for each successive product licensed, and still meeting the three justification, limitation, and ALARA goals.

THUS, WORKING WITHIN REGULATORY AGENCIES, AND THEN IN PRIVATE ORGANIZATIONS REQUIRING ME TO MEET SOME OF THE REGULATIONS I HAD PROMOTED, I FOUND IT VERY FEASIBLE, UNDER THE 1961 REGULATIONS, AND CERTAINLY UNDER THE 1991 REGULATIONS TO KEEP ANY HEALTH EFFECTS TO WORKERS OR THE PUBLIC TO NEGLIGIBLE LEVELS. .

In the early 1990s, I was approached by research laboratory of the Department of Defense to provide a comprehensive document that would inform managers about the history of radiation protection and dose limiting recommendations, a summary of and commentary on available literature on hormetic effects, a summary of the statistical methods of retrospective likelihood of radiation causation, and a review of the feasibility of verification and the benefit/cost ratio of an additional decontamination of a depleted uranium arsenal, which would cost millions more dollars. The Army research lab did not publish my report, but gave me approval to publish if as, "Review of Radiation Risks and Uranium Toxicity, with Applications to Decommissioning..." It can be located on my website BrodskyBooks.com.

The literature review of hormesis that this project required convinced me of the reality of hormetic processes at a low range of doses, supporting some of my suspicions from research on my doctoral

dissertation stochastic model of cancer induction and other observations and literature I had read. Last year, I applied for admission to the SARI (Scientists for Accurate Radiation Information), was admitted, and have been trying to make peace among those who at least know our regulatory program has produced safe industries under LNT and need to advertise it, and those who believe that the lower levels to which we have limited our citizens to also could be expected to produce health benefits.

Meanwhile, while I find time to answer some of the questions of the ANPR on proposed regulatory changes and possibilities of inducing more reporting from State programs, I provide some of my credentials relevant to this ANPR below:

Education: Bachelor in Chemical Engineering, Johns Hopkins, 1949; Atomic Energy Commission Radiological Physics Fellow, Oak Ridge National Laboratory, 1949-50; Master in Physics, Johns Hopkins, 1960 (including completion with high grades of all required courses in physics and math for the Ph.D. and a published master's thesis TID-13705, 1961 (AEC Report)); Doctor of Science (in biostatistics and radiation health, including radiation biology and epidemiology), GSPH, University of Pittsburgh, 1966; Certifications by the American Board of Health Physics, 1960, American Board of Industrial Hygiene, 1966, American Board of Radiology (Therapeutic Radiological Physics), 1975.

Experience: Over 65 years active in the radiation protection profession, including:

- Several positions as Radiation Safety Officer in AEC or NRC licensee institutions, hospitals and universities;
 - Academic experience teaching radiation dosimetry, radiation biology, risk evaluation, biostatistics, epidemiology and radiation management practice, in the following institutions: tenured Adjunct Professor of Health Physics, University of Pittsburgh, 1966-71; Adjunct Research Professor, School of Pharmacy, Duquesne University, 1971-75, while jointly Radiation Physicist in oncology and RSO, Mercy Hospital, Pittsburgh; Adjunct Professor of Radiation Science, Georgetown University, 1986 to present; teaching this term. I have instructed in class over 200 graduate students and some undergraduate, served as major advisor or committee member for many dozens of master or doctoral candidates. SOME OF MY BEST STUDENTS NOW WORK AT THE NRC.
 - Lead staff member for resolving 180 public comments and resolving many staff comments on the 10CFR20 published in 1960, to be effective in 1961;
 - Lead staff member on the 1991 10CFR20 comment resolution, reviewing over 800 comments, until retiring in 1986.
 - Author and lead staff member, under Robert E. Alexander on many of the 8 series Regulatory Guides and NUREG reports related to practices in Materials Licensed facilities, during the 1975-1986 era -- Bob Alexander said at my retirement something indicating that I had produced more pages describing considerations and rationale for comment resolutions than he had ever seen;
 - Reviewer of radiation physics and radiation biology research proposals on committees for four Federal Agencies; and
- co-investigator of the AEC Health and Mortality Study at the University of Pittsburgh from 1964-1972.

More details on my background are available from a 2006 CV that someone posted on Google, including my national awards for teaching, research, and service.

This summary should indicate my credentials from viewpoints as a regulator and from needing to meet regulatory requirements in the private sector.

Sincerely,

Allen Brodsky, Sc.D.