

August 2, 2022

Marcia McNutt, Ph.D.  
President, National Academy of Sciences  
500 Fifth Street NW  
Washington DC 20001

Dear Dr. McNutt

### **Need for ethical radiation health science at National Academy of Sciences**

I have just read the paper by Drs. Edward Calabrese and James Giordano in the Health Physics Journal.<sup>1</sup> This is another of many papers by Prof. Calabrese, since 2009, that lists evidence of scientific misconduct by the NAS. I recommend acknowledgement of the evidence and retraction of the 1956 NAS Report to the Public.

In addition, I urge the NAS to revoke the policy that it adopted in the mid-1950s of ignoring the beneficial effects of nuclear radiations and X-rays on humans and mammals. Enormous amounts of scientific and medical evidence and important therapeutic applications of radiation have been discovered. This information is published in many thousands of journal articles, from 1895 until the present time. It is time to stop linking any dose of radiation to a risk of mutations or cancer because there are many important applications of low doses of ionizing radiation in medicine.<sup>2</sup>

This NAS misconduct began in 1955 after the Atoms for Peace Speech to the United Nations on December 8, 1953, in which President Eisenhower proposed to “lead this world out of fear and into peace” by creating the UN International Atomic Energy Agency (IAEA).<sup>3</sup> “Experts would be mobilized to apply atomic energy to the needs of agriculture, medicine, and other peaceful activities. A special purpose would be to provide abundant electrical energy in the power-starved areas of the world.” The Rockefeller Foundation (RF), the powerful oil energy patron, wrote to Eisenhower on February 23, 1955, and suggested that the NAS carry out a study on radiation effects “with particular attention to the possible danger to the genetic heritage of man.” He responded favorably.<sup>3</sup>

This NAS study, funded and managed by the RF, recommended in 1956 that the linear no-threshold (LNT) dose-response model be used to assess the risk of radiation-induced genetic mutations instead of the threshold model.<sup>4</sup> It created a false radiation health scare that would block the peaceful application of nuclear energy. The threshold had been the basis for the safe “tolerance dose” rate limit that the radiologists had adopted for their protection, 30 years ago.<sup>5</sup> The NAS LNT recommendation was based on flawed fruit-fly research. It contradicted the 10-year study of 76,626 pregnancies terminated in Hiroshima and Nagasaki. This study showed no evidence of hereditary damage caused by radiation.<sup>6</sup> It was scientific misconduct by the NAS to disregard this important human evidence in the performance of its study.

The RF also supported a study on leukemia incidence among the atomic bomb survivors. The study, published in 1957, suggested a link between radiation and a risk of cancer, by fitting the LNT model to the data.<sup>7</sup> However, there was scientific misconduct. The author had combined the data in Zone D with the data in Zone E, which concealed the 1.1 Gy radiation dose threshold for the onset of inducing leukemia. The 1.1 Gy threshold is shown in Fig 1. The exposures of the 32,692 survivors in Zone D were below the dose threshold for the onset of leukemia, and these survivors had a lower incidence of leukemia than the controls in Zone E. This demonstrates that the LNT model is not valid.

Since blood-forming stem cells in bone marrow are exceptionally radiation-sensitive, we can expect the dose threshold for inducing cancer in a cell type that is less sensitive to radiation to be higher than the 1.1 Gy threshold for leukemia. Moreover, the very low number of cases in the very high radiation areas, Zones A and B, for a cancer that is commonly linked to radiation (only 48 cases in 10,051 survivors) suggests that radiation is not a significant cause of cancer.

In conclusion, I urge the NAS to change and adopt evidence-based radiation health science.

Sincerely



Jerry M. Cuttler, D.Sc.  
Cuttler & Associates  
1104-11 Townsgate Drive  
Vaughan, ON, L4J8G4, Canada  
[jerrycuttler@rogers.com](mailto:jerrycuttler@rogers.com)

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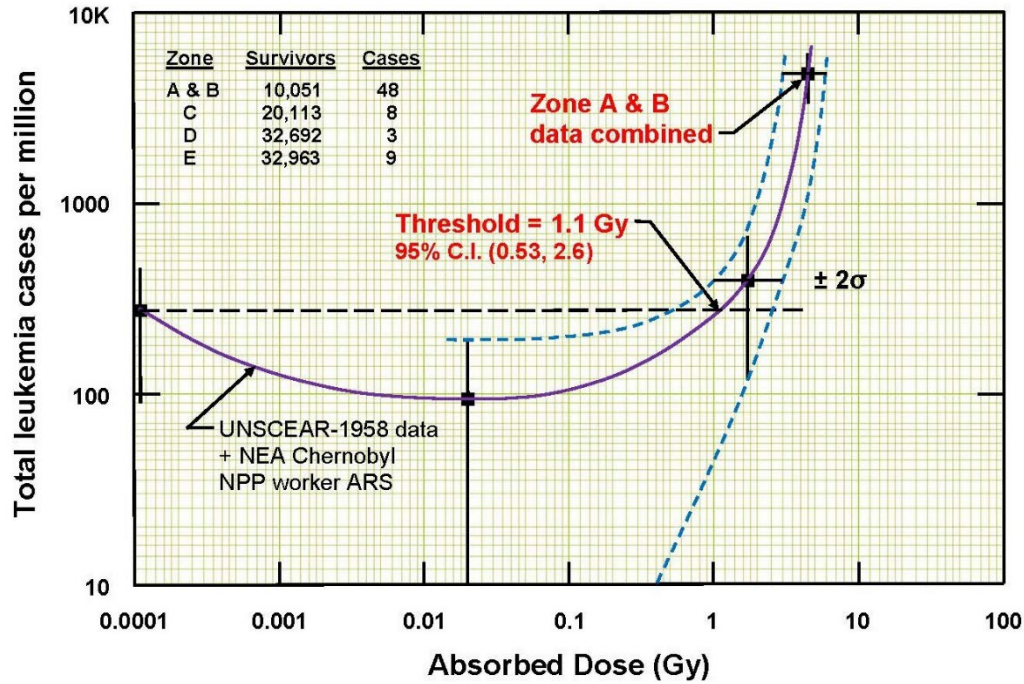


Fig. 1. Evidence of a dose threshold at 1.1 Gy for radiation-induced leukemia from analyses of the 1950–1957 data of 95,819 Hiroshima atomic bomb survivors.<sup>3</sup>