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Review of [“NUCLEAR IS FOR LIFE - A Cultural Revolution”](#), Wade Allison MA DPhil

In 2009, at a time of rising concern over changing global weather patterns, Professor Allison published **“Radiation and Reason”**. This was an endeavour to allay public anxiety about radiation and replace misguided superstition, based on ignorance nurtured by cold war propaganda, with science. It is hard to imagine an author with more appropriate credentials. Formal qualification and research experience in physics, followed by a lifetime working with the medical applications and safety of ionising radiation, allows him to speak with authority to physicists, radiation biologists and doctors. And it behoves all of us, whatever our background or interests, to listen.

“Nuclear is for Life”, published in December 2015, is not a sequel to “Radiation and Reason”. It reviews some of the same basic material but is more an expansion of the ideas Professor Allison presented in 2009. Importantly it follows the tragic natural and political disasters following the earthquake and tsunami which hit the Fukushima Daiichi nuclear power station in March 2011. Despite significant radiation release following the accident, there were no deaths from radiation at the time, and none are likely to occur in the future. Sadly the misconceptions of the media and their emotive reporting of events continue to describe this as a “nuclear disaster” - thereby providing important lessons for us all. Indeed one of Professor Allison’s messages is that any educated person, even if bemused by the mathematics, can easily understand the concepts of radiation safety. He explains how regulatory authorities, following the guidance of the ICRP (International Commission on Radiological Protection), have continued to promote the LNT (Linear No Threshold) hypothesis, despite its scientific inaccuracy, and why this is so harmful. He points out that education and understanding are much better ways of calming public safety concerns than any number of bureaucratic regulations, particularly if these are more a reflection of historical politics than current science.

As with “Radiation and Reason” Professor Allison develops his arguments logically and illustrates them well with simple analogies. He covers the basic physics of ionising radiation, explains how it affects living tissue and the protection offered both by physical principles and our evolutionary development, bathed as we are by background radiation. He discusses the question of trust in society and describes how science so easily becomes obscured by

politicians responding to public concern with inappropriate over-regulation. In turn this increases rather than decreases public fear.

At a time of increasing pressure on the earth's climate, accentuated by ongoing pollution and the needs of a still increasing population, a stable reliable clean way of generating electricity is one of mankind's most critical needs. Nuclear power is unequivocally the answer. Professor Allison describes in detail how needless regulation hugely increases the costs of nuclear electricity generation and pleads eloquently for more rational thinking by regulators. His concerns lead, I feel, to some needless repetition in the later chapters but there is no denying the importance of the topic. I'm disappointed also that he hasn't seen fit to include a chapter on modern nuclear power plant design; as with all other technologies, developments over the last few decades offer vast improvements in efficiency and safety, often at lower cost. The potential offered by thorium and liquid fluoride based molten salt reactors is also worthy of discussion but perhaps this is beyond the scope of the book.

Professor Allison is not the only well qualified academic pleading for greater public awareness of the facts about radiation safety but he is one who can present his arguments lucidly and clearly. I particularly enjoyed the aptness of the quotations with which he introduces each chapter and one from Marie Curie, which he doesn't quote here, provides an excellent summary of his aims:

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more so that we may fear less."

It is critically important for us all that his message be heard. If you can read and think, especially if you are an educator or regulator, you should read this book.

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