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Energy Prices, the Climate and the Nuclear Bubble

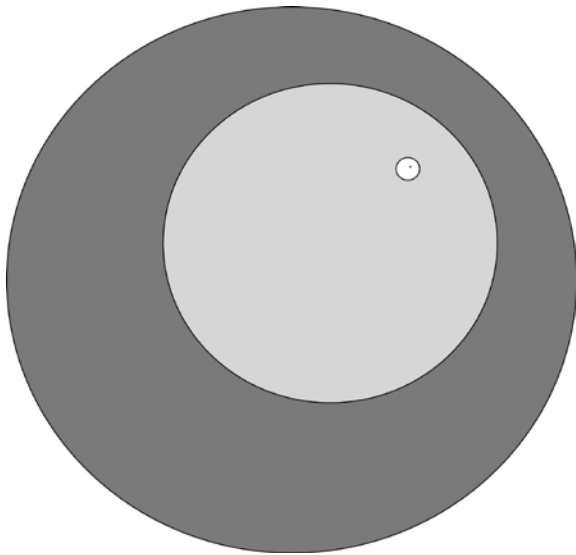
You pay extra for what you insist on – and the more you insist, the more you pay. That is the law of the street and it applies to the safety of nuclear radiation. For more than 60 years people around the world have demanded that any public exposure to radiation should be kept As Low As Reasonably Achievable (ALARA). This is because nuclear radiation is unjustifiably seen as quite exceptionally dangerous and *terrible* in a way that applies to no other risk – and claimed nuclear costs have risen as this demand has become more strident.

But is that right? Or has the world been taken in by political propaganda and too many science fiction movies? Radiation has been a feature of the natural world for 1000 million years and life grew up alongside it. In fact life has evolved an extraordinary degree of natural protection for simple cells, plants, animals and humans too. So there is no scientific justification for the primitive fear of radiation that pervades much public opinion today -- and what happened at Fukushima is a good illustration. There has been no casualty from the radiation and will be none in future. But the world is still frightened and calls it a tragedy – imagine, Hamlet with no injury! The maximum value 7 given to the International Nuclear Event Scale (INES) for Fukushima has no objective basis – this scale is just a measure of political and media alarm which has no parallel for much more serious accidents with hydro-electric dams, coal mines, gas explosions or oil wells. Just the fear of radiation and the unnecessary measures taken have caused over 1000 deaths, and the effect on the Japanese economy and the environment have been very serious – for no benefit whatever. And the radiation released at Fukushima (or Chernobyl) is the same as that used in every major hospital to cure cancer, not cause it!

In 1987, when a discarded cancer therapy source in Goiania, Brazil, was picked up, broken open and spread around several homes, 249 people were significantly contaminated, 50 internally, by doses up to 10,000 times the highest contamination recorded at Fukushima. What happened as a result? You might expect that with such large doses the cancer cases should be obvious without any fancy statistics. Well, four people did die of acute radiation poisoning within a few weeks, but, even after 25 years, there has been no case of cancer that can be connected with the radiation. Two women, one who was already pregnant at the time, had normal deliveries of healthy children.

Marie Curie who worked with radiation all her life said “*Nothing in life is to be feared. It is to be understood.*” Fear stops thought, locks in misconceptions and prevents people taking initiatives and solving problems. On the other side there are always those ready to make good money out of other people's fear. It is a rich source of employment, and international political power too. But such a bubble of activity built on superstition is unstable -- and expensive too. Adam Smith said “*Science is the great antidote to the poison of enthusiasm and superstition.*” In a world of 7000 million people this unscientific bubble endangers the environment.

Those who would attack nuclear in the name of the environment use inverted arguments – nuclear waste is very small, captured, solid, does not spread and causes no casualties. Compare this to human waste or fossil emissions, discharged into the environment with acknowledged death tolls measured in millions. In the 1950s worldwide public fears of radiation were fanned by threats of WMD – this led to ALARA. This policy, sanctioned by the United Nations, attempts to appease public fear by recommending farcically low radiation levels – today in Japan you would have to eat 5 tonnes of “contaminated” food in 3 months to get as much radiation as a single CT scan, itself 100 times lower than a life-giving radiotherapy treatment.



Comparison of monthly doses shown as areas

Dark circle, treatment to cancer tumour (40,000mSv);

Light circle, recoverable dose to healthy tissue (20,000mSv);

Small circle, conservative and safe (100mSv a month);

Tiny dot, safety recommended by ALARA (0.08mSv a month or 1mSv a year)

So how safe is nuclear radiation? About a 1000 times safer than regulations suggest. This is pictured in the diagram. Within a couple of weeks of the Fukushima accident everybody who had been evacuated should have been encouraged to return home. Instead of stricter radiation regulations the population should have been educated about radiation -- as they were about earthquakes and tsunamis.

The real threats to life on planet Earth are no mystery – population, social and economic stability, water, food, environmental change. Radiation has no place on this list and, unless IPCC are completely mistaken, nuclear is an essential part of the answer. But can you afford the electricity bills? These are inflated artificially by the safety industry on the back of popular fear – and the fossil fuel industries are very happy about that. So is the Russian bear. And this hike? 30-40% perhaps. Whoever dares to prick this bubble should scoop the future energy market and make a great stride in competitiveness.



The narrow obsession with nuclear safety has distorted the market and is now hitting consumer prices and the environment to the benefit of nobody except the fossil fuel industries.

It takes too long to build nuclear power stations? The Chinese build them in under 5 years. It depends on whether you think energy supply is an urgent problem. Newer designs of nuclear plants may bring some improvements but the IPCC conclusions do not suggest that waiting is a sensible option.

The IAEA should withdraw support for ALARA (and for LNT, Linear No-Threshold, the scientifically unsupported argument that accompanies it). Released from the nuclear Zeitgeist of the Cold War, our children and grandchildren should receive explanatory education for their future, firmly based on trust and science, not blame and fear.