



Together Against Sizewell C

TASC observations in respect of ExA's denial of our wish to have low level radiation discussed as an ISH topic.

TASC's IP no: 20026424.

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TASC is extremely disappointed that the ExA did not feel that the issue of low level radiation was a matter for discussion under the heading of community impacts at ISH 12 on the 15th September. TASC has read the ExA's explanation for this in its electronic response to our question about the absence on the agenda of this important issue which says that there will be effective enforcement in this area by the relevant licensing and permitting regimes. We point out that this body is Public Health England (PHE) which follows the guidance and recommendations of the International Commission on Radiological Protection (ICRP). The report referred to in TASC's written representations [REP2-481 L] and [REP6-076] carries a link to the preliminary report funded by the charity Children with Cancer which clearly traces the development of the authorisation regime for exposure to ionising radiation, pointing out the areas which need to be explored in order to shed light on anomalies in the dose/risk relationship which confound the linear-no-threshold principle. Such anomalies include the 10-fold increase in the cases of childhood leukaemia in Seascale and the 1.6 – 2 times increase in the same disease within 5 kilometres of all nuclear plants in Germany, a finding identified in a German government funded report known as KiKK, which, in tandem with the catastrophic events at Fukushima, precipitated the closure of all German nuclear plants.

Exposure rates and their effect on health and the environment are derived from the evidence produced by the survivors of the atomic bombs dropped on Hiroshima and Nagasaki in 1945. That evidence produced a crude rule of thumb for the dose received and the risk associated with that dose which is called the LNT assumption – Linear No Threshold, or the higher the dose, greater the risk. But LNT, by definition, also assumes that even a low dose carries a risk. It is the source and the nature of that low dose concern which underpinned the suspicion that the 1983 case of a ten-fold higher than average number of leukaemia cases in children in the village of Seascale just south of the Sellafield reprocessing plant had some connection to the 2 million gallons of contaminated effluent discharged every day from Sellafield to the Irish Sea. That effluent contained minute particles of alpha-emitting plutonium and uranium which would accumulate around the outfall on the seabed. It was shown that some of that material was being driven ashore, dried by the sun and suspended in the atmosphere by the wind. It can also be re-suspended by the spume created on the crest of waves reaching the shore. The effect of inhalation and ingestion of alpha emitting particles is

poorly understood, yet every nuclear plant discharges these materials into the commons of the air and the sea.

While TASC has no option but to accept the ExA's wish to pass the responsibility for this issue to the relevant licensing and permitting agencies for 'proper enforcement', it points out that the weight of evidence suggesting that the dose/risk model is insufficient protection for the workforce or the public is increasing, that regulatory authorities are often wrong, that breathing asbestos dust and smoking were once considered perfectly harmless to the body and that the recommended legal exposure limit for radiation workers and the public has been reduced steadily over the decades.

TASC maintains that the issue is of significant importance to the inquiry into SZC and the grave concerns which attend the low level radiation issue are deserving of being aired and examined for the benefit of both the ExA and IPs. TASC contends that doubt over the accuracy of calculating the impact on health from exposures to ionising radiation – a central and continual feature of the consequences of granting planning permission for SZC to be built – is something the ExA should take into account *on its own behalf* as it will unavoidably have an impact on future generations. In all likelihood, by the time SZC is operational, should it ever be so, the greater will be the level of uncertainty as to the 'safe' level of exposure to ionising radiation. Twenty years ago, one in four people could expect to suffer from cancer at some point in their life. Now that figure is one in two. Cancer is an epidemic.

There is one cause of cancer which is not contested: exposure to ionising radiation, such as that produced by nuclear power plants. It is universally agreed that there is no safe dose of such radiation. Every exposure, no matter how small, presents a risk of tissue damage to the recipient, the potential corruption of cells and the development of cancer.

Gamma radiation is highly penetrative, stopped only by thick concrete, beta can be stopped by a layer of clothing and alpha radiation with a weak but persistent ray of energy caused by its decay can be stopped by the thickness of a sheet of paper. The impact of exposure to these types of radiation outside the body is thought to be reasonable well understood, although many would demur from that conclusion.

The radioactive discharge from nuclear plants to the air and to sea are based on levels which are thought to be safe. But 'safe' – as we see from the agreement that there is no safe dose of radiation – is a moot point. So the industry uses a measure of as low as reasonably achievable (ALARA), based on what the industry considers achievable to reduce risk to the public at a cost it considers reasonable. If the numbers of cancers resulting from a nuclear activity are, for argument's sake, 100 a year, is it 'reasonable' to expect the industry to halve that number to 50 if the cost of installing technology to make that reduction is, say, £10 million? So the safety of the public in respect of the levels of ionising radiation the industry, government and the regulatory bodies expect it to tolerate for the so-called benefits of nuclear power is a science based on assumptions and on arbitrary cost/benefit calculations made by those who weigh up the possible health effects on an unknown number of individuals against the interests of the industry.

The world is awash with uranium and other alpha-emitting elements released from over 2000 nuclear weapons tests, some in the atmosphere, some from the Hiroshima and Nagasaki bombs and some from nuclear accidents, particularly Chernobyl and Fukushima. Our rivers are polluted, our fish stocks reduced, some to unsustainable levels, wildflower meadows 97% reduced, the air is particulated, the seas are plasticated and we have so much more to learn about about the safety or otherwise of ingested or inhaled microscopic alpha emitting materials which nuclear facilities emit. There can be no more centrally located planning issue than low level radiation if we are to plan our way out of the impoverished future we are constructing for our future generations.

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