

Radioactive Times

NEWSLETTER OF THE LOW LEVEL RADIATION CAMPAIGN JAN 2019

SCOTS LAW BREAKTHROUGH

A decision made last month by a Scots judge in a radiation pensions appeals case for a nuclear submariner has re-opened the issue of the legal status of evidence that will force both the Ministry of Defence, and the nuclear industry, to re-justify all nuclear operations. In 2015, the Campaign asked for help to organise the Nuclear Test Veteran Radiation Pension Appeals in the Royal Courts of Justice. You rallied round and sent us enough money to bring 4 eminent experts from Germany, the UK and Japan and for Chris Busby and colleagues to conduct the 3-week hearing in June 2016. In a disgraceful and Soviet-style final Decision, the Judge, Sir Nicholas Blake, excluded all the evidence advanced by the LLRC experts—on the basis that they were biased. This echoed the 2014 decision by Sir William Charles to exclude Chris as an expert because of “bias”. Chris promptly changed his status from “Expert” to “Representative”.

Back in the game: Your move!

Blake’s 2016 Decision was based on evidence presented by the Ministry of Defence experts only. He excluded all the evidence that the radiation risk model was faulty and ignored our witnesses. The 2016 case was intended to provide the last word on all radiation cases that followed. But new decisions by judges in England and now also Scotland have changed the situation. The Ministry of Defence has



Chris and daughter Cecilia outside the Royal Courts of Justice, June 2016

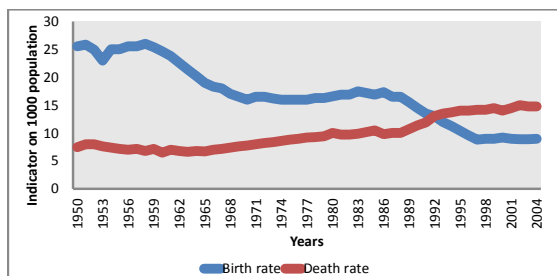
been placed on the back foot. Their lawyers have to deal with two new expert witnesses in London, and in Scotland, to justify their previous exclusion of evidence but now under Scots law. (*Full story page 3 and 4*)

Final Success is in Sight

The Low Level Radiation Campaign has fought since 1996 to overthrow the radiation risk model which has permitted the deaths of millions of people from internal radioactivity and underpins nuclear war. We are unique in the anti-nuclear movement because we take on the science. One example, which we report in this issue, is the use of alpha-track etching plastic to show that nuclear sites, like Hinkley Point release billions of radioactive particles which are inhaled by locals, leading to cancer and leukemia. We are now winning this battle and will give examples in this *Radioactive Times*.

EDITORIAL

The graph below was presented by Prof Yuri Bandashevsky at the 2009 Lesvos conference of the European Committee on Radiation Risk (ECRR). It shows clearly the effects of the Chernobyl contamination on the people of Belarus. There were increases in every kind of illness, a reduction in the birthrate and an increase in the death rate. We have since heard that those many thousands who were evacuated to Kiev have mostly died below the age of 40. The birth defect rate increased significantly in Europe. More than 20 scientific studies from many countries show such increases, and a scientific paper published by Profs. Inge Schmitz-Feuerhake, Sebastian Pflugbeil and Chris Busby in 2016 demonstrated how the current radiation model is in error by more than 1000-fold for these congenital effects. In itself, the Bandashevsky graphs are a microcosm of what has been happening in the world since the atmospheric tests rained down the Strontium-90, Plutoniums and Uraniums etc. in the 50s and 60s, followed by the nuclear site disasters and the general licensed releases from sites like Sellafield and individual nuclear power



stations like Hinkley Point. This must now stop. And LLRC can stop it. The evidence that the risk model that permitted these releases is dangerously incorrect is now unarguable. In the last 5 years we have manouvered the authorities into a corner from which they are unable to escape. We have done this using scientific studies published in the peer-review literature, though constant pressure in the courts, through the government Stakeholder dialogues, through lectures in the USA, Europe, the United Nations, Japan and Korea. There are now some very important developments which we ask you, our power-base, to help us with. This new Radioactive Times contains a selection of what it is we have done includes an account of our best achievements in the last 10 years and selected publications. We have done all this with very little money. The Campaign has not been funded by any Grant-funding body since 2009. We have soldiered on because we know, from our research, that the banning of releases of man-made radioactivity is the most important development in human history. The effects of Chernobyl in Europe are now repeating in Japan following Fukushima. The nightmare of radioactive contamination is underpinned by the false radiation risk model upon which we are forcing change. We can achieve this. We must.

PERILS OF THE DEEP

RADIATION, SCOTS LAW, AND EVIDENCE

In 2016, Chris Busby was approached by the widow of a Scottish nuclear submarine crew member, Mr Forbes who had died from non-Hodgkin Lymphoma (NHL). She had applied for a war pension on the basis that the lymphatic cancer was caused by radioactivity—he was a reactor technician and every day had to sample the reactor cooling water which he was often soaked in. The Ministry of Defence refused on the basis that (first) the disease was not caused by radiation and (second) that he could not have been exposed to radiation anyway. Mrs Forbes appealed the decision and brought in Busby’s report. This included references to scientific studies showing that NHL was indeed caused by radiation. Thus the MoD defence was dishonest.

Evidence excluded

By 2016, when the case was heard, the Edinburgh Tribunal found for the MoD and refused the pension. The judge stated that they were not permitted to look at Busby’s reports because by then he had been kicked out as an expert by the High Court in London after a motion to exclude him was brought by the MoD in 2014. The judge in that “get Busby” hearing, Sir William Charles, said Chris was “biased” and so could not act in radiation cases as an expert witness. Advised by Chris, Mrs Forbes appealed to the Scottish Upper Tier. The argument was that it was unfair and unjust to exclude evidence that might have affected the outcome of the case.



Scots Law different

The Scottish judge agreed. He allowed the appeal, but specifically on this point, of Busby’s evidence and its exclusion. In December he gave the MoD one month to frame an argument justifying the removal of Busby’s evidence but now on the basis of Scots Law, not English Law. There were seven specific questions which had to be answered by the MoD lawyers, the most interesting of which was whether the exclusion of the evidence breached the *principle of fairness*. The Secretary of State for Defence asked the judge on 9th January for an extension in time, writing: *The issues raised in this appeal are of significant and continuing importance to the Ministry of Defence. We are instructing Scottish Counsel to liaise with the Counsel who appeared for the MoD in the 2016 hearings in England.*

This opens a crack in the door which had been slammed in the faces of the Test Veterans in the 2016 case: it is a very important development for the veterans and for LLRC also.

ATOMIC VETERANS AND PANCREATIC CANCER

In 2016, there were 16 test veterans whose appeals were heard in the Royal Courts of Justice. None of the appeals succeeded for reasons already discussed, including that of Don Battersby who was represented by Chris Busby and his daughter Cecilia; the others were represented by Hogan Lovell solicitors. One of these, Trevor Butler died from pancreatic cancer after the case ended. This was not the illness he had been appealing for and Mrs Butler made a new appeal; now for pancreatic cancer. Don Battersby had also died from pancreatic cancer during the case, also two other veterans. Don was awarded a pension, but in 2016, after this, the MoD changed its position. According to their new “expert witness”, Professor Geraldine Thomas, pancreatic cancer was no longer caused by radiation.

Improbable events

Just like throwing four sixes in a row, the chance of getting 4 deaths from pancreatic cancer in 16 veterans is vanishingly unlikely, which suggests that they had all suffered the same cause. But all they had in common was being at the test sites. This was one of the pieces of evidence brought by Busby in the 2016 case. The judge dismissed it because the MoD expert had dishonestly referred to the probability of 4 pancreatic cancers among the entire 20,000 veteran population, quite a different calculation. The chances of throwing 4 sixes in 16 dice throws is small enough, given that each throw has a 1 in 6 chance. But the background rate of pancreatic cancer

death is about 1 in 50, and the probability of getting 4 in the seven veterans with cancers is utterly remote.

New case; new experts

In the new case, which Chris is organising for Mrs B, he has called an expert statistician to make this point. In addition, Chris is arguing now that the cancer was caused by a combination of chemical and radiological effects caused by internal exposure to Uranium particles. This new approach gets round the question of the radiation dose being too small, and thus avoids the precedent defined by the 2016 decision. He is calling Prof Keith Baverstock, who was a radiation advisor to the World Health Organisation.

(Continued on page 5)



CHRISTMAS ISLAND: WHAT REALLY HAPPENED

In January 2019, CNN reported a very strange development. The British locked up all the records relating to the atomic tests. They were no longer to be available to researchers or historians. No one could understand why. Chris Busby and colleagues representing the veterans in the radiation appeals have seen all of these public documents and a large number of restricted ones also. Some of these were suddenly made secret during the cases. Some secret data was asked through Freedom of Information requests and refused on the basis that they would affect Britain's



*Grapple -X.
Britain's phony
H bomb?*

relationship with other countries. What other countries? There is only one: the USA. There is another pointer. In 2006 the BBC broadcast a programme in the series "Document", producer Michael Thompson. Busby was an advisor in this; the item has since disappeared from the BBC Archive although we have a copy. According to the programme, documents released from the public records office showed that in 1957, Britain did not know how to make an H-Bomb. In order to impress the Americans (and Soviets) Britain was exploding huge A-Bombs, very dirty Uranium bombs with massive amounts of U-235. Then suddenly there was Grapple Y, clearly a H-Bomb. Hurrah! Clever old Aldermaston.

contd. from p 4

The Ministry of Defence has run out of experts. The judge gave them 90 days to respond to Busby's statement about Uranium as the cause of the cancers. But nothing was forthcoming. No Geraldine Thomas. When the case date was set for 29th November, MoD were 63 days out of time. They hastily produced a report by Dr Anne Braidwood who had been an expert in the 2013 case. But under cross examination in 2013 she had admitted under oath she was not an expert on anything. Busby promptly wrote to the judge with a copy of the transcript where she stated this, and asked the judge to exclude her evidence by the same token as his own reports had been excluded. This request is still with the judge. This puts more pressure on the MoD in the Test Veteran Chess Game. If it cannot respond with an expert, we must win the case.

The conclusion is obvious. The USA wanted an ally at the nuclear high table. The public were screaming about fallout (quite correctly). The USA McMahon Act prevented their helping the Brits. So here was a quandary. Did the USA provide the Brits with the knowledge or even the material for Grapple Y? If so, then evidence for this might be put together by those historians and scientists researching the issue. The US certainly took over the British so-called independent deterrent after the 1960s. The British bombs are all US bombs. We are the US Aircraft Carrier sitting off the coast of Europe, with our nuclear subs patrolling the deeps (and it seems, killing their crews). And maybe this is the true "special relationship" forged in 1957 with Grapple Y.

JUSTIFYING RADIATION EXPOSURES: EURATOM

In 1998, the Greens in the European Parliament had to address a new legal document about radiation exposure. This was the Euratom 1996/29 Basic Safety Standards Directive. It unified the regulation of all exposures of the public and defined the levels of radioactive contamination that might be legally released. The Greens called in the experts to advise: Alice Stewart, Rosalie Bertell, Inge Schmitz-Feuerhake, Chris Busby and Alexey Yablokov. We all met in Brussels where we were joined by the other interested parties, including Jack Valentin, the Secretary of the International Commission on Radiation Protection, (ICRP). One of the outcomes of this meeting was the formation of the new European Committee on Radiation Risk, the ECRR. But the other outcome is also very relevant.

Justification and new evidence

We pointed out that the basis for the BSS was the ICRP radiation model, and that this was unsafe for internal exposures. New evidence from Chernobyl was showing this and more would emerge. There had to be a clause which allowed for a change in the science on which the law was based. The Greens introduced one. Article 6.2 of the Council Directive 96/29/Euratom states: *Existing classes or types of practice may be reviewed as to Justification whenever new and important evidence about their efficacy or consequences is acquired*

By 2016 more than 20 peer-reviewed studies had shown that the science underpinning the BSS was false. These will be discussed on page 9.



The late Prof Alexey Yablokov of ECRR with Chris in Berlin 2016

In 2017 the Campaign started the Euratom Justification Campaign. Individuals in UK, Ireland, Sweden, Denmark, Germany and France wrote to the State radiation protection authorities and demanded that they obey EU law and set about re-justifying all exposures from radiation and radioactivity. They all refused to comply, employing different stratagems in each country. One favourite way, employed by Sweden, was to say it was up to ICRP (which it is not). In the UK they said that there was no new and important evidence (which there is). The French refused to respond altogether. The Irish wrote that they didn't expose anyone to radiation. And so forth. Nevertheless, the Euratom Justification campaign has shaken them up; and they all had to respond by law. The next stage is to report them to the EU Commission and ask for the law to be followed. Meanwhile Richard Bramhall is ramping up pressure in the UK.

SOME LLRC SUCCESSES IN THE LAST 10 YEARS

2009 International Conference of the European Committee on Radiation Risk, Lesvos, Greece brought 20 scientists from Russia, Belarus, Ukraine, UK and USA to discuss the 2003 Risk Model of the ECRR. The model was updated in 2010 as a result. Copies were sent to all the major Radiation protection authorities in Europe in 2012. A new 2019 edition is in preparation. LLRC is a supporter of the ECRR whose scientific secretary is Chris Busby (CB).

2009 CB made visiting Professor at University of Ulster, Coleraine.

2009-2012 Studies by CB and colleagues of the effects of Depleted Uranium weapons in Iraq revealed very large increases in cancer and birth defects. Excess Uranium was found in the hair of mothers of the children. CB reported the results in the peer review literature and also at the United Nations in Geneva.

2004-2010 Work by a PhD student, CB and Prof Vyvyan Howard at the University of Ulster confirmed the dangers of Uranium particles through photoelectron amplification of natural background together with the strong affinity of Uranium to DNA.

2009 CB interviews ex-ICRP secretary in Stockholm. ICRP relocates to Canada.

2012 CB and de Messieres publish study of nuclear test veteran children showing 10-fold excess of congenital effects, 8-fold in grandchildren. Sunday Mirror story.

2012- 2016 CB acts as expert witness and later representative for several nuclear test veteran cases. Six of these were successful until the Ministry of Defence collapsed the remaining cases into one hearing in 2016 at the Royal Courts of Justice after CB and

his evidence had been excluded (*but see story on p1*).

2002-2018 CB publishes more than 40 scientific papers in the peer-review literature showing that the radiation risk model of the ICRP is faulty.

2011 CB invited to Japan to speak on Fukushima effects. Attacked in Guardian by George Monbiot.

2016 CB publishes paper in the journal *Genetics* showing that the Japanese A-Bomb studies were dishonestly manipulated and their conclusions are therefore invalid.

2016 Profs Schmitz Feuerhake, Pflugbeil and CB publish a study showing that increases in birth defects in Europe after Chernobyl were significant: an error of 1000 fold in the risk model.

2017 CB gives evidence to the Swedish Court which then refuses to permit the development of the nuclear waste repository at Forsmark (*story p8*)

2012-2018 Richard Bramhall (RB) engaged with the Nuclear Stakeholder meetings with the British government ministries.

2018 RB becomes Chair of the Wales Anti Nuclear Alliance.

2018 RB opposes the dumping of radioactive dredged mud from Hinkley Point to Cardiff on the Welsh Coast.

2019 RB persuades the British Government to engage in further work discussing the failures of the radiation model (*story p 13*).

SELLAFIELD AND HINKLEY HOT PARTICLES

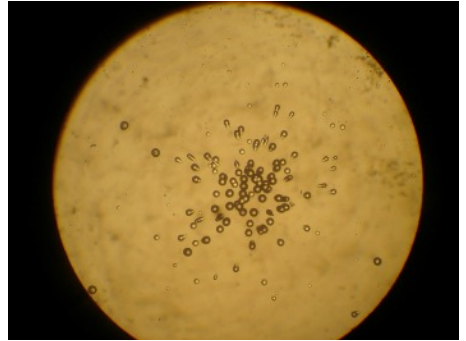
ALARMING DISCOVERY

The photo opposite shows the alpha particle tracks from a uranium particle discovered by Green Audit in January 2019 in an engine filter from a car based 3km from Hinkley Point nuclear site. The existence of this and other smaller (2-10 micron) particles in the filter shows clearly that releases from the plant directly or by sea to land transfer can be inhaled by people living there. The imaging used a 2 month exposure of pieces of the filter to the alpha detecting CR39 material. The technique was developed by Green Audit to look at DU particles in Kosovo and the Lebanon.

This alarming finding shows clearly that the 2012 concerns about high levels of Uranium, reported near the site, but denied by the authorities, were justified. The inhalation of these Uranium particles we believe to be the cause of the cancer and infant mortality found downwind in Burnham-on-Sea.

Also Sellafield

Green Audit previously found hotter microparticles in samples and filters from near Sellafield. The famous child leukemia cluster there, dismissed by the authorities, is almost certainly the product of exposure by inhalation to such material. The argument that the “dose is too low” dilutes all the radioactivity into the whole body, and makes no concession to the very high real local doses and Uranium concentrations near particles like that in the photo. In the case of Sellafield the sediment particles were of Plutonium and Americium-241.



Welsh mud dumping

For these reasons, the stirring up of sediment at Hinkley Point and its removal to be dumped in the sea near Cardiff is a very dangerous project. None of the government agencies, including those that measure radioactivity, look for hot particles, or Uranium particles as small as those seen using the CR39 technique. These are airborne, invisible and can pass directly through the lung into the body. Richard Bramhall has brought these results to the Welsh Assembly government, as he explains on page 13. It is truly astonishing that no-one has previously carried out such research. Instead, the releases of particles at Hinkley Point were consistently denied in 2012-2014. The authorities at Sellafield have designed and use special vehicles, at enormous cost, to look for hot particles. But these cannot see such microscopic alpha-emitting particles; they can only detect very large and highly gamma radioactive ones, which in any case could not be inhaled.

SCIENTIFIC PAPERS IN PEER REVIEW JOURNALS

Science is supposed by all to be the test of truth. Western government state that their laws relating to radiation are based on science. By this they mean scientific studies of the health effects of radiation, published in the peer review literature, in Scientific Journals. But all the evidence in scientific journals that is relied upon and incorporated into laws, were written by scientists funded by the same States that require nuclear energy and nuclear power to run their war machines and make nuclear weapons. The true effects of exposures to internal radionuclides have never been cited or discussed in the publications that underpin current laws on exposure limits. The latest risk model of the International Commission on Radiation Protection (ICRP) does not refer to or cite any research on the effects of Chernobyl. When interviewed by Busby in Stockholm in 2009, the retiring Scientific Secretary of the ICRP, Dr Jack Valentin, editor of the ICRP2007 admitted that this was wrong but that he had to do what he was told. The interview was videoed and can be found on YouTube at <https://youtu.be/k2JFxnAkTW4>

The problem has always been that the Green and anti-nuclear movement has had few qualified scientists examining the health effects of ionizing radiation, and those that there were had huge difficulty getting their studies published in the peer-review literature. The late Dr Alice Stewart told RaT that her paper showing the Japanese A-Bomb studies to be faulty was rejected by 9 journals. This was in 1997. But in the period of internet expansion, from 2005, paper journals began to be threatened by web publication in what was known as “open access” journals. This situation forced the traditional paper journals to have to compete by producing their own “open access” journals. So instead of getting money by selling paper journals to university libraries, the charge is made to the authors. Often there is also a charge to those wanting to download the paper from the web.

All of this expansion in journals has led to a huge opportunity for open science. The traditional journals would have referees who kept out what was seen as dissident science. A good example is *The Lancet*. This journal published on the anniversary of Chernobyl in 2016, an astonishingly dishonest compendium account of radiation and health, whose authors were all well-known nuclear industry apologists and in some cases (Dr Richard Wakeford) ex nuclear industry employees. A number of independent scientists complained and asked for a small space to publish a letter saying that the health effects of Chernobyl were significant and that the Lancet paper questionable. The editor refused to publish anything. Busby, Yablokov and Schmitz-Feuerhake wrote on behalf of the Geneva-Based Independent WHO to the editor of *The Lancet* and sent it by email and post recorded delivery. It was ignored.

But the scientific literature box is now open and the control of science ended. Busby is now a reviewer for several journals, can reject bad studies (and does) and has published more than 40 scientific studies. (*Continued on p 10*)

SCIENTIFIC PAPERS and BOOKS from LLRC

From p9)

The scientific literature is the second new arena (the other being the courts) where the nuclear industry science can be questioned or shown to be false. In time, these two routes will win us the loss of further radioactive pollution, the banning of Uranium weapons and the realisation that a nuclear war will be the end of life on earth. Studies carried out by Busby and other members of the European Committee on Radiation Risk have destroyed the status of the current ICRP model. The most recent examples of evidence which is fatal to the ICRP are (1) the review analysis of congenital malformations in children after Chernobyl published in *Environmental Health and Toxicology* in 2016 and (2) the 2016 invited letter to the prestigious US journal *Genetics* which showed that the Japanese A-Bomb study, which forms the entire basis of the ICRP model, was dishonestly manipulated half way through, in 1973, when the unexposed control group was removed. These two studies were advanced in Europe as *New and Important Evidence* forcing a legal re-Justification of all exposures under the European EURATOM Directive.

A list of the more important scientific papers follows. These can mostly be found on the web, but for those who want copies, LLRC can print off copies and post them if requested by email to: lowradcampaign@gmail.com or a letter to the office. We will charge £5 for this, payable by cheque or to the paypal account shown on the back page.

Scientific papers

- Busby Christopher (2018) A risk coefficient for radiation-induced dementia. *Advances in Alzheimers Disease*. [7 \(2\) 13-35, June 2018](#)
- Busby C (2017) Radiochemical Genotoxicity Risk and Absorbed Dose. *Res Rep Toxi*. Vol.1 No.1:1
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- Busby C (2017) Childhood leukemia, atmospheric test fallout and high voltage power distribution lines. *Pediatric Dimensions*. DOI 10.15761/PD.100156
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- Busby Christopher. Is There Evidence of Adverse Health Effects Near US Nuclear Installations? Infant Mortality in Coastal Communities near The Diablo Canyon Nuclear Power Station in California, 1989-2012. *JJ Epidemiol Prevent*. 2016, 2(3): 030

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From p10)

- Sacks Bill, Mayerson Gregory, Siegel Jeffrey A (2016) Epidemiology without Biology: False Paradigms, Unfounded Assumptions and Specious Statistics in Radiation Science (with commentaries by Inge Schmitz-Feuerhake and Christopher Busby, and a reply by the authors). *Biol Theory*. 2016; 11: 69–101
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- Busby, Christopher, de Messieres, Mireille (2015) Cancer near Trawsfynydd Nuclear Power Station in Wales, UK: A Cross Sectional Cohort Study. *Jacobs Journal of Epidemiology and Preventive Medicine* 1(1)- 08
- Busby C and de Messieres M (2014) Miscarriages and congenital conditions in offspring of the British Nuclear Atmospheric Test Program. *Epidemiology (Sunnyvale)* 2014, 4:4
- Mangano J, Sherman J, Busby C (2013) Changes in confirmed plus borderline cases of congenital hyperthyroidism in California as a function of environmental fallout from the Fukushima nuclear meltdown. *Open Journal of Pediatrics* 3: 370-376
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- Alaani Samira Tafash Muhammed, Busby Christopher*, Hamdan, Malak and Blaurock-Busch Eleonore (2011) Uranium and other contaminants in hair from the parents of children with congenital anomalies in Fallujah, Iraq *Conflict Health* 5, 1-15

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From p11)

- Busby, Chris*; Hamdan, Malak; Ariabi, Entesar. (2010) Cancer, Infant Mortality and Birth Sex-Ratio in Fallujah, Iraq 2005–2009. *Int. J. Environ. Res. Public Health* 7, no. 7: 2828-2837.
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- Busby C and Fucic A (2006) Ionizing Radiation and children's health: PINCHE conclusions *Acta Paediatrica* S 453 81-86
- Busby C (2017) Childhood leukemia, atmospheric test fallout and high voltage power distribution lines. *Pediatric Dimensions*. DOI 10.15761/PD.100156
- Busby Chris and Bramhall Richard (2005) Is there an excess of childhood cancer in North Wales on the Menai Strait, Gwynedd? Concerns about the accuracy of analyses carried out by the Wales Cancer Intelligence Unit and those using its data. *European J. Biology and Bioelectromagnetics*. 1(3) 504-526
- Busby Chris and Morgan Saoirse (2005) Routine monitoring of air filters at the Atomic Weapons Establishment Aldermaston, UK show increases in Uranium from Gulf War 2 operations. *European J. Biology and Bioelectromagnetics* 1(4) 650-668

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The Cardiff Mud Dump goes to Westminster

By Richard Bramhall



Building the new reactor at Hinkley Point requires Electricité de France (EdF) to dredge 300,000 tons of sediment, clay and rock from the bed of the Severn Estuary. This is to allow construction of sea-water inlet and outfall pipes and a harbour. In 2014 the Welsh environment agency Natural Resources Wales (NRW) gave EdF a licence to dump all the material on Cardiff Grounds, a submerged sandbank a mile and a half from the Welsh capital. Cardiff Grounds has long been used as a dispersal site for silt dredged for navigational

purposes. Few people knew about this plan until late 2017 when marine expert Dr. Tim Deere-Jones found the licence buried in thousands of pages of EdF documentation together with a report from the Westminster government's laboratory CEFAS on the levels of radioactivity in the mud. His sons' skill with social media ensured that within a few weeks most of south Wales and southwest England knew all about the plan and it was reported by UK national media. Online petitions attracted thousands of signatures. An official Welsh Assembly petition started by Deere-Jones himself became the largest and fastest-growing in the Assembly's history.

LLRC contributed a review of our own research on official cancer data showing that populations near the sea have elevated cancer rates. At the same time we applied to CEFAS for the data behind their report. Chris Busby was able to open and understand the computer files CEFAS supplied and wrote a second report showing that there were many knowledge gaps and assumptions. Too few samples had been taken and only the top two inches had been sampled; the tests

CEFAS used were incapable of detecting particles of Plutonium and Uranium which are known to be present in the estuary and which can be resuspended, blown inland and inhaled.

At the instigation of the Welsh Government's Petitions Committee, NRW asked EdF to take further samples but EdF refused. Through all the months of protest and debate EdF and NRW insisted that the radiological hazard was trivial. Protestors replied that this claim was unreliable because there was no information on particles. The Welsh Government's Environment Secretary Lesley Griffiths accused them of lying and scaremongering.

In June 2018, as LLRC's Secretary, I wrote to NRW pointing out that, in addition to their failure to establish the presence or absence of Plutonium and Uranium particles, they could not rely on the scientific advice they were getting from officials. The science was questionable.

Contd on p14

Contd from p13

The point about these particles is that the science of radiation risk is in crisis because of over-simplification. It took a wrong turn in 1943. In the dash to develop nuclear weapons America forced the adoption of an average energy model. It treats the alpha decays of inhaled or ingested Uranium as if they affected the whole body. In fact they pack a huge punch to a tiny volume of cells. You can't treat this as a whole body dose any more than you can say there's not much heat in a cigarette end so it's ok to stub it out in a baby's eye.

EdF sent a glossy briefing to all the members of the Welsh Assembly claiming that the public radiation dose from the mud would be equivalent to eating 20 bananas. This *Banana Equivalent Dose* is junk and no real scientist would mention it except as a joke but the sad thing is that people were using it to belittle the protests. My letter to NRW took the form of a detailed critique of arguments made by the Westminster Government's Department of Business, Energy and Industrial Strategy (BEIS). In 2016 we applied to BEIS for a review of the justification of the proposed new Hinkley Point reactor. Justification is a simple cost benefit analysis. The costs are measured in terms of health detriment. We presented incontrovertible evidence that Uranium fallout from the Chernobyl disaster caused a sharp increase in congenital malformations thousands of times greater than predicted by the official risk model. BEIS responded with misdirection, evasion, and pretended incomprehension. There is a clearly a crisis of competence.



I pointed out to NRW that Chernobyl is relevant to the mud dump because Uranium particles are common to both. The dispute represents an *uncertainty* in the terms of a Welsh law — the Environment (Wales) Act of 2016 — that requires special care to be taken.

The bad news is that NRW is just as dodgy as BEIS. They claimed that they had to follow protocols of the International Atomic Energy Agency which is simply untrue. The one sensible thing NRW wrote was that I should take the scientific debate back to BEIS. I've done that.

I represent LLRC and the Welsh Anti-Nuclear Alliance in a regular Forum where NGOs meet civil servants from BEIS. Last October I reported to BEIS that the Welsh Government had told me they had confidence in NRW and that NRW's advice was to reopen the issues in Westminster. BEIS offered me a separate meeting. There I and Peter Wilkinson presented the idea of Joint Fact-Finding. We were asked to make a formal proposal for the next Forum. That happened on January 24th and discussions are continuing.

All documents at www.llrc.org

AN APOLOGY AND PLEA FROM CHRIS BUSBY

Photo shows Profs John Goldsmith, Ed Radford, Ernest Sternglass in Germany in 1998. They are all dead now, as are Rosalie Bertell, Alice Stewart, John Gofman, Karl Morgan, Alexey Yablokov. There are no scientists left attacking the nuclear risk model but me. By now, evidence that it is madly wrong and has killed more than 60 million is increasingly apparent everywhere.



WHAT HOPE IS THERE?

Anyone reading this *Radioactive Times* must feel like jumping off a cliff. What can be done to save future generations from this mad science, driven by jobs and money and military power? The answer is we need young scientists to work in the area. We need to do the research and publish it in the scientific literature. I am getting old. I am sorry that this RaT looks like the Busby show. But there is only me, Prof Inge Schmitz Feuerhake, Prof Shoji Sawada, a few other oldies left. But we are winning and if we stay alive and can do our research, we can win. Hope: the current state of radioactive pollution, if stabilised with no new releases, will mostly decay away by 2100. The genomic damage in humans will decay away in twenty generations. Lifespans will shorten and fertility reduce. We know all this from experimental and epidemiological studies. But the alternative is much worse.

If you or you loved ones had cancer

The cancer rate increase in the last 30 years is alarming. By 2020 one in two will have been diagnosed. You have all been touched by this. It is most likely that these cancers were caused by the weapon test

fallout, Chernobyl fallout, beach particles and other sources. We now know that all diseases are increased by radiation, not just cancer.

What I want; what I can do.

I want to set up an Institute. An ECRR centre for alternative research into radiation, from radioactivity and from electromagnetic sources. This would be a building with an address and with laboratories. It would attract young scientists and carry on the work if or when I lose my marbles. It would be a focus for a revolution in the current tired and dangerous science. I can get one in Riga and run it for 5 years for a few million Euros. In the past, we have been left some money in the Will of a supporter. You might consider doing the same. After all, it is through your money that we have survived for 25 years and kept up our research and our fight for the children and grandchildren. On the back page we will put down what we need to do next and how much we want for it. Please help with whatever you can afford. Thank you!

Success in Sweden



FORSMARK Professor Christopher Busby, till vänster, har genomfört studier i närområdet till kärnkraftverk i flera länder och kunnat påvisa lokal ökad förekomst av olika cancerformer samt dödfödda barn. Han är kritisk till den riskmodell från 1952 som fortfarande används internationellt för ra-

dioaktiv strålning eftersom den, menar han, ger felaktiga värden. Miles Gokstic, till höger, från Miljörelsens kärnavfallssekreteriat, Milkas, bjöd in Christopher Busby som, menar de, tillför andra perspektiv än de föreläsare som deltog vid Kärnavfallsrådets seminarium i tisdags. >>4

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In September 2017, Chris gave a whole day's evidence to the Swedish Environmental Court which legally advises the Swedish government about the proposed high level nuclear waste plant to be built 500m under the Baltic Sea at Forsmark. He pointed out that the risk model, upon which the proposal rested was wrong. In January 2018, the Court published its findings. It advised that permission should be refused the billion pound project to be permitted. This success failed to be reported in any major newspaper.

Photo Osthhammer Nyheter

WHAT DO WE IMMEDIATELY NEED MONEY FOR?

- The Test Veteran and Submarine Veteran court cases, bringing witnesses and travelling to London and Scotland (see stories on p 1 and 3). £5000
- Funding the preparation and printing of the 2019 new edition of the Risk Model of the European Committee on Radiation Risk (ECRR). £5000
- Open Access Scientific Peer Review publication of 6 new studies supporting the scientific arguments, including work on Uranium genotoxicity, child leukemia, dose response relationships, hormesis. £8000
- Laboratory measurements of samples from Hinkley Point. £4000
- Travel £2000

And general survival. This Radioactive Times should show you that we are the only NGO working on the science, and making real advances in the project to stop nuclear energy and the use of nuclear weapons, including Uranium.

You can send us a cheque “Low Level Radiation Campaign” pay with paypal: as “Low Level Radiation Campaign” or make a standing order or a BACS payment to our bank account:

HSBC sort code 40 30 05 Account 51384007 Low level Radiation Campaign

Thank you,

Richard Bramhall

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