



Civilian Effects Panel

Good Afternoon. My name is Richard David, known to my friends as „Nibby.“ I feel very honored to be invited to address this important conference.

I first became involved specifically in the DU issue as a seemingly impossible victim, associated with Gulf War veterans. I've quietly been in the background, as I didn't quite fit in to any standard victim category. I was last employed in the UK military aerospace industry assembling components for virtually every NATO fighter aircraft built between 1985 and 1995.

In May, 1993, I was elected to local government, which later was the backdrop to opening doors and assisting in getting the DU message across within Europe.

I fell sick on 1st July, 1995, aged 40, never to return to any employment. I missed the social friendship and interaction with colleagues. I quickly developed an untreatable form of pneumonia, coupled with arthritis, after suffering 10 years of flu-like symptoms. My recorded injuries, diseases and conditions consist of: short-term memory loss, long-term anxiety, fatigue and depression, a growth of bone on my forehead, balance problems. All senses and emotions have been altered; I simply am not the

same person I was prior to 1985. I've suffered upper respiratory, nasal and throat pain for approaching 19 years, since being exposed to a wide variety of chemical substances. I've been diagnosed following surgery of fibrosing alveolitis (sp?), an untreatable lung/immune system disease with permanent lung scarring proven in 1995, which gave a life expectancy of months to 20 years maximum.

Shoulders, elbows, knees, hands, feet are all incredibly painful. My forearms have developed masses, which coupled with wrist and joint and bone pain restrict wrist rotation. My muscles are weak, and I tire very quickly. All joints on fingers are very painful despite medication. I also developed blisters on my hands and feet. My skin has changed to an oily synthetic silicone-like substance making it impossible to open polyethylene bags, etc.

I have internal pain, plus bouts of irritable bowel syndrome, and rectal bleeding. Excessive urination since 1995 is now linked to a rare chronic potassium-wasting condition needing daily medication. This condition alone is life threatening, and was diagnosed in 2002 as Gitelman's Syndrome. All body fluids – blood plasma, sweat, tears, urine, and semen – seem very acidic. My body leaves an oily imprint on bed linen.

„Nibby“ Richard David, GB



During October of [2002] I thought I was going to die from what is best described as sulfuric acid, which leaked from skin pores, causing eye, ear and skin burning wherever this liquid touched, plus bacterial and fungal infections of eyes and ears. Skin pores in my groin area leaked the same clear acid, soaking my underwear and burning my genitals, causing a vicious circle of irritation, burning and more leakage from open sores. It took months to dry up. This coincided with a flare-up of the lung condition, making me hypersensitive to any inhaled irritant.

Burning semen syndrome affects my wife mainly, and fear of harming her causes me great anxiety. The risk of fathering a damaged child is too great to consider, which affects our human rights.

I've lost many colleagues and friends through cancer deaths. Their loved-ones not knowing that their deaths could have been caused by the very toxic and radioactive exposures in the work place. On the 6th of February, 1999, the NGVFA invited its members -- which I happen to be a member of the Gulf War Veterans Association -- to a public meeting in Portsmouth, Hampshire, which several speakers contributed to what could have been the cause of Gulf War Disease. All made very valid medical and scientific points. An address was presented by Dr. Duracovic of UMRC. It was clear from his background that this man is an authority on radiation issues. I would imagine that this was the first that many UK Gulf War veterans -- certainly myself -- had ever heard of depleted uranium. I asked many questions, and was included in the urine testing program, which Dr. Duracovic carried out at his own expense.

The idea that I had had any contact with DU seemed totally impossible. The Doctor thought that my lung injuries, and the industry in which I was employed, may have been significant.

There were some postal problems in getting my medical records to UMRC. So, in early August of 1999, I managed to get to Heathrow airport just as Dr. Duracovic was changing planes returning to Canada. We had a 10-minute meeting, where he promised to look through my medical record on the long fight back home. I'm not sure who was more surprised: me, at recognizing the doctor in a crowded airport; or Dr. Duracovic amazed that a disabled patient went to so much trouble of travelling three hours on the chance of bumping into him.

I felt as though something very mystical was evolving. I had confounded doctors by still being alive, and had only days before lost my mother to cancer. It was like a dream, as though God was controlling

events. A power much greater than coincidence had mapped out my life and guided me -- the most unlikely of victims -- to Dr. Duracovic.

Four years on many cannot believe how Fate has steered me towards the Gulf War Veterans, UMRC, the World DU Center in Germany, etc. I feel as though I have been chosen, not just as a victim, but to actually tell this story, and given just enough health and strength to battle on for ex-colleagues and now military friends tragically no longer with us or very sick indeed from DU contamination.

In March 2000 came the shocked results that I was one of those tested and proven positive for DU contamination, and that I was to be included in the peer-reviewed studies along with the US, Canadian, and British Gulf War veterans. Being a UK civilian I immediately set up a civil legal personal injuries claim based on my DU results.

Having some useful political contacts has put Gulf veterans and UMRC-gathered results in the right arena, and the serious nature of what my contamination meant to unaware engineers. I involved the Health and Safety Executive in investigating my ex-work place; plus the local TV company took up the story, covering and investigating DU used in aircraft. They produced an excellent documentary and a file, which can be used as my evidence.

I also applied for social security disability pension under the rules for industrial injuries called „prescribed diseases.“ Listed injuries include the result of excessive exposure to magnetic or ionizing radiation. The law is in place, but has never been challenged outside of injuries caused by medical radiation for cancer treatments.

During September, 2000, UMRC were in the process of presenting their work to peer scientists in Europe. I arranged for the very first such presentation of the unfolding horror of DU using my results and the Gulf veterans' results to MEP's at the Strassburg EU Parliament on the 25th of October, 2000. Two British Gulf veterans and myself represented the study group. UMRC and Damacio Lopez of IDUST represented the scientific world. Invisible War -- Damacio's film -- was shown for the first time, and we caused a lot of interest among the French media. Within one month I was invited to the Manchester CADU Conference.

As with everyone involved with the subject of DU, I've also had many obstacles to finding the truth placed in my path. Not exactly death threats, but I was frozen out of local politics for asking too many sensitive questions involving environmental pollution. My ex-employer has done everything

to discredit my DU injury claims. I've also had a negative experience of authorities – which I used to believe were set up to look after public on health and safety issues. And I've denied any disabled benefit, despite of being disabled for almost eight years. But when health allows, and with some lucky breaks, I have built some bridges among areas of expertise; I've learned a lot, and I've helped to bring the DU debate further than an individual victim could believe possible.

During the last two years I've had a very rare gene mutation disease diagnosed, confirmed through DNA testing in Holland, revealing two types of cell mutation. This was paid for by the UK National Health Service. In December 2001 about 12 British Gulf War veterans, plus myself, traveled to Berlin to undergo chromosomal aberration testing, which meant another positive scientific result showing excessive chromosomal damage due to internal contamination to alpha-emitting radioactive particles.

My legal claim was funded on a „no-win, no-fee“ insurance policy. It was set in court by the end of February, 2003. Lawyers insisted that my evidence was very good; but the defendants intended to fight me in court, which I knew would happen because no legal precedent regarding DU has ever been established in any court of law, and such claims are not priced to allow for a trial. The cost of setting up a legal precedent, personal injuries claim caused by DU against a global military supplier is phenomenal. A barrister could only seek advice from the barrister employed by government to advise Gulf War veterans. The advice suggested that to win a claim on DU injuries was unlikely, as not enough research had been done to establish the dangers.

I am continuing the legal fight without the aid of a barrister or a solicitor because of the following facts. In the knowledge that I have tried every legal avenue, and have to present this in court as my own counsel – I cannot mention too much for fear of prejudicing my case:

- I was given advice that was irrelevant to my claim. I was not a Gulf War veteran, nor given any vaccines; but I do have the relevant diseases and conditions known to other uranium victims, plus have three totally independent, scientifically proven results of radiation-induced disease, which puts me in a small group of positive DU victims tested and named in peer-reviewed medical literature.

- All the other positive UMRC DU patients in the peer studies were military. They cannot take individual legal action against their employer.

- Military aircraft are weapons, so I was in the defense industry.

- UMRC have no record of any other patient with supporting DNA, chromosomal aberration and path-lab reports prepared to UK civil legal standards. My scientific results are unique.

- I've got ample evidence to prove that the defendant is liable, and they knew it.

- The Social Security Benefits Agency Appeal Tribunal caused the Secretary of State to intervene, and rule that DU is used in aircraft, and that aerospace industries should now be included in the Prescribed Disease occupations to injuries caused by ionizing radiation.

Conference Delegates – you need to know that the aerospace industry has used DU for at least 40 years! The workers have never been told that the metal is radioactive, and that it doesn't comply with any safety regulations. Indeed, one of the largest mass multiple-chemical sensitivity disease-based legal personal injury claims involved the world's biggest aerospace company. Depleted uranium was not mentioned to the injured workforce, yet, that particular manufacturer of aircraft has probably installed far more DU in its planes over many decades than has been deployed in any war.

Has anyone studied life-insurance policy terms and conditions recently? Please read the small print under „exclusions.“ Among the list permanently excluded prior to any legal precedent being set is depleted uranium exposure, but without naming it. Anyone diagnosed as suffering „magnetic or ionizing radiation injuries“ is automatically exempt from insurance cover. If you just check on your life insurance policies, it's in there.

I can today give the Conference a little optimism, in that the World's only known personal injury legal claim against DU is currently going through the UK civil court procedure.

I believe the most pragmatic way to stop DU proliferation is through enforcing each country's Prescribed Disease and Control of Substance Harmful to Health laws, which have been routinely breached by secretly building DU into aerospace equipment. No new laws need ratifying. The enforcement of what is already in place will quickly cause all manufacturers to review their working practices. DU could disappear as quietly and as secretly as it appeared. It has no market value in any industry, and it cannot comply to international health and safety legislation.

Thank you for listening to me.

The Medical Investigation into the Bijlmermeer Aviation Disaster and depleted uranium

The risks of depleted uranium (DU) are primarily determined by its presence in finely sized dust particles. This is the case when DU weapons

At the beginning of February 1999 the public hearings lead to unrest among the fire and police personnel and other rescue workers about the health risks. But also among employees of KLM NV who worked for many years in the vicinity of the aircraft wreckage hangar 8 at Schiphol East, the place where the presence of DU dust was proved in 1999. The starting point is the recommendation of the Parliamentary Enquiry Commission is: to launch a study among the residents and helpers by a team of specialists, to make an extensive examination into all health symptoms which those involved attribute to the

Henk van der Keur, NL

have been used on the battlefield and when pieces of DU metal are burned under certain conditions. This last scenario happens when a plane with DU counterweights or balance weights crashes. A kerosene fire can easily reach temperatures up to 1200 degrees centigrade and bars of DU counterweights burn at temperatures from 500 degrees centigrade. Micro particles dispersed in smoke plumes can be inhaled or ingested by bystanders and lead to internal contamination. Target organs are the lung, the kidney and finally the bones. DU poisoning can cause a whole fan of ailments, including a disturbed immune system, autoimmune diseases, and tumours.

On October 4, 1992, an El Al Boeing 747 crashed in Amsterdam's Southeast district Bijlmermeer. During the nineties questions remained about the cause of the crash, health problems among citizens and rescue workers, the exact cargo, DU counterweights, and other issues.

At the beginning of 1999 a Parliamentary Inquiry Commission was started to resolve these questions. One of the Bijlmer crash issues was the presence of DU in the plane. According to Boeing and El Al a total of 282 kilograms was constructed in the plane's tail wings.

Laka made the presence of DU public in October 1993 after which a discussion started on the potential burning of the DU aboard and the risks for citizens and rescue workers.

In 1998 Laka forced the researchers of the Energy Research Centre (ECN), based on literature from US Army research, to admit that the still missing 152kg of DU could have been burnt.

Bijlmer disaster. The study has to lead to a treatment recommendation for those involved and their relevant family doctors or specialists. At the insistence of the fire service works council, the City of Amsterdam also agrees to a scientific study among its staff. The Minister of Health then joins in, so that there will also be a scientific study among the residents.

The Medical Investigation into the Bijlmermeer Aviation Disaster (MOVB) is a fact. It consists of three parts: an Individual Medical Examination, an Epidemiological Study of Helpers and an Epidemiological Study of Residents. At a later stage the Effects Study is added. The health, safety and environment organisation KLM Arbo Services develops the study protocols, including the protocol for the medical investigation into DU poisoning.

There are four principals: the Ministry of Health, the City of Amsterdam, the District Amsterdam Southeast and KLM.

The Free University Medical Centre, the Catholic hospital OLVG, the EMGO Institute for Extramural Medical Study and the Leiden University Medical Centre are carrying out the execution. The first participant is examined on January 3rd 2000. Meanwhile it became clear that the protocol for medical tests on DU show a lot of shortcomings. Valuable advises from independent experts were not included.

For example KLM Arbo Services refuses to carry out an isotope analysis. And they were not aware that analysing only urine- and blood samples is by far not enough to prove internal contamination with DU dust particles after more than six years of exposure.

the strict scientific requirements of the Institute for Extramural Medical Study of the Free University of Amsterdam. The actual participation of residents was relatively high. But given the norm requirements necessary to arrive at a valid scientific conclusion, the participation of residents is insufficiently representative. However, resident organisations and others have serious doubts about the efforts of the Board in finding sufficient proper participants for the control group. After the cancelling of the Epidemiological Study for the residents the Health minister stated that the residents have to wait for the



Within the framework of the Individual Medical Examination more than 5000 people had announced themselves for the examination. Beside it at least 4000 people should be examined within the framework of the epidemiological study. The voluntary participants were asked to fill in some questionnaires. There should be taken off samples of blood and urine and there should be done an examination of the lung function. On 26 June 2001, the residents were horrified by the announcement of the Administrative Board of the district Southeast, along with Minister of Health, that the epidemiological study among the residents had to be stopped. According to the Administrative Board the numbers were insufficient, especially in the control group, to meet



Angelika Claußen, IPPNW, FRG

publication of the Epidemiological Study among the Care Providers and that they could take warning from this outcome. Later this statement was denied. Alongside an Individual Medical Examination, research was needed into any possible link between the health complaints and the disaster. Thus the Epidemiological Study of Care Providers was carried out. It could be completed, because in this case there were sufficient participants.

The cancelling of the epidemiological study among the residents means also the cancelling of the medical investigation into the possible DU poisoning among the residents. In April 2002 the Minister of Health introduces the so-called FISH test as a screening for internal DU contamination for all the victims of the disaster. In fact this is only meant to keep the residents quiet. The FISH test is able to determine deformities in the genes, however these possible deformities haven't to be caused necessarily by DU. Besides DU a lot of other toxic substances were involved, which haven't been subjected to toxicological investigation as well. Some of them have also the ability to cause genetic mutations. It would be better to replace this test by more accurate tests. Just like the tests for other toxic substance involved. Finally the ten most ill care providers and ten residents should be tested with the FISH technique. So far it didn't take place. Just like an in-depth examination into internal contamination with DU and an isotope analysis.

Despaired by the cancelling of the Epidemiological Study many residents with illnesses for which they want to be treated visit private laboratories in order to know what kind of toxic substances they have in their bodies. This has led to tragic incidents among the mostly low-income residents. Residents, who have tried to find the

proof of their illnesses, undergo tests at laboratories, which are not recognised by the Dutch health insurance companies and do not reimburse the high costs. Another sad happening is to make the things worse than they already are. This is the case in the debate about the infection with pathogen mycoplasmas (something between a virus and a bacterium). In January 1999 a team of residents visits the Medical Institute for Molecular Medicine in Los Angeles from Prof. Dr. Garth Nicolson. Afterwards they tell everyone that there was an infection with a genetic manipulated mycoplasma, which was involved in the plane crash. However, there is not a single study known which substantiates this claim. It's clear that the Dutch government has made many mistakes in the aftermath of the plane crash and that they are not interested to carry out a proper health investigation. However, the way of acting from some people who claim to represent the residents do not deserve a prize.

Finally on 21 June 2002, the Individual Examination on Bijlmer disaster, along with the Epidemiological Study of Care Providers was completed. The results were made public on 19 February 2003 in the Amsterdam City Hall. Between January 2000 and March 2002 a total of 4806 residents and care providers involved in the aviation disaster have been examined. The conclusion about the Epidemiological Study sounds: "Some of the care providers involved in the Bijlmer aviation disaster still exhibit more physical and psychological problems than those who were not involved. However no indications have been found that they have suffered more physical harm as a result of exposure to harmful substances." The last sentence is remarkable, because there hasn't been any in-depth toxicological research to support this statement. The toxicologist dr.ir. Gerrit de Mik, Sector-Chief of the Dutch State Institute on Health and Environment (RIVM) and the involved expert on DU is asked in a text on the website of the MOVb: "What is the treatment of people who are exposed to DU?." His answer is: "They are not treated. DU behaves the same as natural uranium in the body. Depending of the compound in which uranium is taken up, it leaves after a short or long period the body via the urine or faeces and the isotope ratio becomes the same again as that of natural uranium."

Many stories of residents about the individual health examinations and their subsequent examination by the family doctor present remarkable insights. For example, Mrs. A.W. appeared to have a lung cancer four months after her examination by the physicians of the MOVb and died six months after the discovery of her terminal

illness. The written statement of the MOVb is that searching for cancer was not involved in the protocol. So, it is no wonder that the victims of the Amsterdam plane crash do not have much trust in the intentions of scientists who have carried out the Medical Investigation into the Bijlmermeer Aviation Disaster.

Over 20 per cent of the participants were advised to have their family doctor refer them to the Bijlmermeer Aviation Disaster Aftercare Advisory and Treatment Centre (ABC), which specialises particularly in Unexplained Physical Symptoms (UPS) and Post-Traumatic Stress Syndrome (PTSS). Residents could also visit this centre for the restriction of and how to deal with UPS.

Considering the continuing statements of physicians and medical researchers in the Netherlands to ascribe all the symptoms of illnesses among the victims to PTSS and other psychic disorders, the figure of PTSS seems rather low. Possible links with poisoning by toxic substances are consequently ignored. The KLM employees who have worked in hangar 8 show similar symptoms as the residents and the care providers, however they were not involved in the plane crash. Surprisingly they score high on PTSS.

Around 2,500 people (staff of the fire department, police and Hangar 8) took part in the Epidemiological Study. Participants in the Epidemiological Study of Care Providers included care providers from the Amsterdam fire department, from the Amsterdam police, and the hangar 8 staff. Complaints investigated included chronic coughs, skin complaints, fatigue and concentration problems. According to the medical investigators other (volunteer) care providers could not be included in the study, because "it is impossible to assemble a comparison group, which had not experienced the disaster."

Following intensive recruitment procedures the data could be processed from 528 fire department employees from Amsterdam's professional fire brigade, 1468 police employees from the Amsterdam regional force, and 503 hangar staff. The Epidemiological Study showed that some seven years after the disaster, a selection of those participants involved demonstrated more physical and psychological symptoms than those not involved. Examples of these complaints are: skin rashes, joint problems, low back pain, fatigue, chronic coughing, shortness of breath, concentration problems, a disturbed immune system, and depression. Hence at group level an association has been demonstrated between these com-

plaints and the disaster. No increased levels of substances such as carnitine and uranium were found in the blood and urine. No mycoplasma was detected in the blood of any of the participants.

Afterwards it appeared that carnitine and pathogen mycoplasmas were found in blood samples from residents and hangar 8 workers which were taken by private laboratories. Other laboratories proved a significant increase in the presence of heavy metals, such as lead and palladium in the bodies of ill residents. Also the investigators mention nothing about the possible relationship between the rise in autoimmune diseases and the possible contamination with DU. During the hearings of the Parliamentary Inquiry professor Weenink made clear this relationship and the Inquiry Commission wrote in their conclusions on the health problems: "The Commission can't rule out that the large number of cases of – possibly – autoimmune diseases are connected with the disaster."

The Effect Study among the employees of the Amsterdam police, firebrigade and hangar 8 is still going on and is expected to appear around April 2004.

The story of the victims of the Amsterdam plane crash is very similar to the stories of the Gulf War Veterans and the Veterans of the Balkan Wars. Their illnesses are not recognised by the governmental institutions and serious medical investigations are not forthcoming. A depressing situation, because they have no medical treatment. The situation of the Iraqi citizens is much worse. Many of them are living daily in the toxic and radioactive rubble, without any chance to escape.

In the aftermath of the Iraq War from spring 2003 many new victims of DU will come up: many Iraqi civilians have had to pay their lives for the freedom, which president Bush promises; and a next generation of veterans with illnesses will return to their homelands. In order to prevent more victims in the future, a moratorium on the military use of DU is urgent.

*Henk van der Keur,
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*Ed Steur, victim and researcher of
the Amsterdam Plane Crash*

Pauline Rigby, Australia

SESSION 3 Civilian Effects Panel PAULINE RIGBY

'We got up in the morning from the tent, everyone had red eyes. Right here the smoke caught us, it came over us. Us lot, we tried to open our eyes in the morning, but we couldn't open them. We had red eyes and tongues and our coughing was getting worse.'

Angelina Wonga

These words, spoken by indigenous Australian, Angelina Wonga, describe this day, fifty years ago. The day after Totem1, Atomic test at Emu Junction on 15 October 1953. What happened in central Australia in the 50s and 60s, relates to the uranium weapons of today. Professor John Keane has noted that

The technique of developing 'low yield', 'tactical' or 'battlefield' nuclear weapons, in effect their miniaturisation, was first dreamt up at Maralinga in what were known as the 'Minor Trials' (Keane: 2003)

What happened to civilians? Indigenous Australians suffered the indignity of nuclear testing on 'their' land. Land considered 'vacant' and a good distance from the city. But it was the country of the Maralinga, Pitjantjatjara and Kokatha people. Many were forcibly removed, some were found camped in bomb craters. Today the people are still

suffering and on the website of the irati wanti, is the the statement 'you haven't got one healthy child nowadays' And their suffering will continue as the Federal Government has just designated this land as Australia's nuclear waste dump.

20,000 Australian and British service personnel were involved in the British tests at Maralinga, their suffering and use as human guinea pigs to test the effects of radiation, is well documented by Sue Rabbitt Roff from Scotland's Dundee University. They had partners in the civilian world, who suffered from still births, miscarriages and birth defects. Civilian partners who have watched there loved ones suffer and die prematurely. And still, all those affected are struggling to get acknowledgement and compensation.

Gulf War 1 veterans in Australia are told that they were not contaminated. I witnessed in July 2003, an Australian veteran compare his rash with a US veterans. The latter had been diagnosed with depleted uranium contamination. I listened to an Australian veteran say 'my little boy has the same rash'. And all these 'discounted' casualties, have extended family in the civilian world, who watch them suffer and be constantly labelled as just 'mentally ill'.

And now we have 'Sea Swap' in Western Australia. The new agreement between the US Navy and the Australian Government. A de facto United States Naval Base situated in the south west of Western Australia. Australians were never consulted about this agreement and few are aware of it. Sea Swap allows for the rotation of US Navy crews in the Port of Fremantle, West Australia, without the vessels having to return to the US. The \$200 million Australian Marine Complex, being constructed 13 km south of the Port of Fremantle, incorporates the third largest military corporation in the world, the US Raytheon Company. The complex is shaping up as a de facto US Naval base. The latest in a string of 'warm bases' or 'lily-pads' that have been established by the United States since September 11. Bases providing service facilities and storage, into which thousands of US service personnel can be flown at short notice and deployed immediately to a combat zone.





The West Australian Coast was bombed for five days in January 2003, by jets from the USS Abraham Lincoln. Following this attack, the aircraft carrier sailed from the Port of Fremantle in West Australia to participate in the invasion of Iraq. With the closure of the US bombing range at Vieques Porto Rico, the Lancelin Defence Training Area is an alternative ship to shore bombardment range. It is situated 140 kilometres north of Perth, the capitol of West Australia. A further US practice attack took place in July. The Australian Government denies having/using 'depleted uranium' weapons. The US is known to have used these weapons in Vieques and Okinawa, with no regard for the local civilian populations.

The town of Lancelin is only 8 kilometres from the boundary of the bombing range. Who cares about the civilians of Lancelin? Residents were told that the attack in January, consisted of non-exploding smoke bombs. These 'non exploding' smoke bombs started two bushfires and an F/A-18 overshot the runway at the nearby Royal Australian Air Force Base at Pearce and came to rest in bushland, close to houses. (www.seaswap.org)

Australians have gone from the mushroom clouds of Maralinga, to being kept like mushrooms in the dark, but things are going to change. Hundreds of thousands of Australians marched in the

streets in February 2003, in a desperate attempt to stop the second major invasion of Iraq, in just over a decade. Then DUSK Australia was formed. This group brought Doug Rokke to Australia to raise the consciousness of Australians to the effects of 'depleted uranium'. The challenges that we face need a positive civilian response.

Once there was the saying 'act locally, think globally'. However, to be effective agents of change, we need to 'act, think and LINK, locally and globally AT THE SAME TIME. DUSK is an Australian civilian initiative, seeking out Gulf War veterans, together with the Atomic Veterans and indigenous Australians, listening to their stories and linking them in with the Peace and anti nuclear movement. We are here to listen and learn. How can we support you? And we ask you, please, focus on Australia. We are now a major base for the United States, well placed for pre emptive strikes in the middle east. Please, help us to stop the Sea Swap in Western Australia. Keane, John. 2003 "Maralinga's Afterlife " in THE AGE Melbourne Australia May 11 Wonga, Angelina. 2003

www.iratiwanti.org

Leuren Moret, USA

Hibakusha

By Sydney Vilen

*Young mother, beautiful baby
Shadows burned in sidewalk
...nothing more.*

*What is it to live in a land of death?
Tell, if you can
...Hibakusha.*

*I do not know which to honor more
The Hibakusha who teaches me what I know
...or the blackbird.*

*People who live in grass houses
Should not set fires.*

*A flock of meadowlarks
Flying at ground zero
...vanished.*

*What kind of morning was it
August 6th in Hiroshima?
Another Summer's day
With kittens and flowers
...like Wichita, Kansas?*

*Did you kiss your husband goodbye
In the morning
...Hibakusha?*

*Leaving your mother to the flames
Pinned beneath the archway
What did you feel
...Hibakusha?*

*sometimes
in a watermelon land
i dream of your kiss
and pray
for the troubles of this land
With gentle love, gentle peace, gentle light.*

[“Hibakusha” is a Japanese term for radiation survivors of the Hiroshima and Nagasaki Atomic bombs.]

DEPLETED URANIUM WEAPONS THE WAR AGAINST THE EARTH

World Depleted Uranium Weapons Conference
The Trojan Horse of Nuclear War
Hamburg, Germany
October 16-19, 2003

INTRODUCTION:

Some would say that uranium, formed in star processes, is the “fairy dust” of the universe. A radioactive component of stars, planets, meteors and star dust, it is scattered throughout the universe. The abundance of uranium in the earth’s crust is only 2.4 parts per million (ppm)¹, yet the heat from its radioactive decay has accumulated inside the earth for 4.5 billion years, the age of the earth. The accumulation over deep time of tiny amounts of heat, has created a sometimes molten or plastic interior. It has played an essential role in the formation of the earth and earth processes such as plate tectonics, the earth’s magnetic field, and volcanism. It has also played an essential role in the creation and evolution of all living things.

Life too has evolved on this earth over 4.5 billion years. Living systems have developed mechanisms to survive exposures to natural background radiation entering the atmosphere from the sun, deep space, and other environmental sources. Radioactivity naturally occurs on the earth, primarily in rocks and minerals. Natural background radiation forms the basis for evolution by causing mutations in all forms of life, a necessary genetic chaos allowing for variation, change and adaptation to changing conditions on earth.

Natural background levels can be defined as those existing prior to 1905². Since 1905, man has introduced increasing and accumulating levels



of man-made radiation (nuclear weapons testing, nuclear power plants, and their trash – depleted uranium) threatening the very future of humanity and other living systems. For this reason, I have written this report as a context for depleted uranium weaponry (first introduced on the Persian Gulf battlefield by the US in 1991) and a source of information for those not familiar with the recent history of man-made radiation over the past one hundred years.

It is also important to be familiar with the early knowledge, published in 1927, about the known mutagenic and other effects of ionizing radiation on biological systems. The deception and secrecy surrounding the nuclear weapons and nuclear power projects, and the new use of depleted uranium weaponry - all contaminating the atmospheric and global environment - has created a worldwide community of Hibakusha and exposed all living things. The health of the environment connects all species.

1927: Ionizing Radiation and H.J. Muller - *Drosophila melanogaster*

Following eight years of research, in 1927 the geneticist H.J. Muller published a landmark research paper³ from his discovery that genetic changes could be induced in the common fruit fly *Drosophila melanogaster* by exposure to X-rays (ionizing radiation). Being impatient with the “sluggish” rate of natural mutations which were few and far between (10^{-5} – 10^{-6} per generation⁴), he wanted to accelerate this slow rate in order to carry out studies on genetics which biologists believed were the chief basis for evolution. Because the life-cycle of *Drosophila* is very short, he was able to study the effects of a single exposure to X-rays on the next 40,000 generations. [Only about 1000 generations of humans have passed since the Ice Age in Europe.]

Muller determined from published reports that X or radium rays could induce germinal (sperm and egg) changes, presumably mutations. Similar published claims had been made involving other agents such as chemicals (alcohol, lead, antibodies, etc.) and temperature (heat accelerates chemical reactions)³. However, ionizing radiation in the form of X-rays, causes mutations

at a rate much greater than by natural or other artificial methods such as exposure to chemicals or temperature. Because genetic mutations in individual cells of developed organisms would be nearly impossible to find and are not passed on (inherited), he selected the male *Drosophila* germ cells (one-celled sperm), to expose to X-rays.

By inducing mutations in the one-celled sperm or egg, every cell in the adult organism growing from the damaged germ cell will carry the mutant gene. Treatment of unfertilized females resulted in mutations in the eggs similar to those in the sperm of males, as well as extended periods of infertility after exposure. In mature eggs that survived exposure, and in unexposed new eggs formed in exposed tissue, a high proportion of mutant genes were discovered³.

He found an increase in mutations of fifteen thousand percent by comparing mutation rates in untreated germ cells to mutation rates in exposed germ cells³. By studying dominant or “visible” mutants and recessive or “invisible” mutants, he was able to determine that the “invisible” mutations in genes reduce viability or fertility.

He reported that X-rays (ionizing radiation) occasionally produce cancer, and linked it to their action in producing mutations which undergo repeated cell divisions (abnormal mitoses), also observed in embryonic and epidermal tissues³.

Muller mentioned that effects were unknown for varied doses of X-rays, and the timing of exposure in the life cycle and under varied conditions might also be important. His preliminary findings of the number of recessive lethal mutations produced were that they vary, not directly proportional to the X-ray dose, but with the square root of the X-ray energy absorbed. He believed that perhaps other influences such as physico-chemical must be taken into consideration.

He recommended that other factors, such as temperature, probably affect the composition of the gene and should be investigated in combination with X-rays [synergistic effects]. He concluded that by inducing genetic mutations in various organisms it would be possible to produce genetic maps for selected species.

H.J. Muller won the Nobel Prize for Physiology or Medicine in 1946 for the discovery of the production of mutations by means of X-ray irradiation.

Studies since Muller’s Nobel winning research⁴ have extended knowledge about the effects of X-rays to humans. In the 1950’s Dr. Alice Stewart conducted research⁵ which revealed that fetal X-rays doubled a child’s risk of developing cancer. This was alarming because doctors in England routinely X-rayed pregnant women. She warned that low-dose radiation was far more dangerous than had been acknowledged and internationally challenged the nuclear industry standards.

The recent work by Dr. John Gofman⁶ on the effects of medical procedures using ionizing radiation, unquestionably establishes that increases in deaths from cancer and ischemic heart disease in men and women can be correlated to increased use of medical procedures such as X-rays, fluouroscopy, and mammograms. In contrast, deaths from diseases other than cancer and ischemic heart disease, decreased with an increase in medical doctors per 100,000 population.

A recent Swedish study was conducted on 3,094 adult men who had received radiation therapy before the age of 18 months during 1930-1959. Based on this study the British Medical Journal⁷ reported a significant dose-related negative response seen for learning ability and logical reasoning in infants exposed to low doses of ionizing radiation. They concluded that intellectual ability can be adversely affected in infants when their brains are exposed to ionizing radiation in doses equivalent to CT scans of the skull. The delayed effects are not apparent until early adulthood.

1963: Atmospheric Testing Fallout and the Partial Test Ban Treaty

HUMAN GUINEA PIGS: The results of the atomic bombs, “Little Boy” and “Fat Man”, dropped on Hiroshima and Nagasaki in 1945, escalated into a nuclear weapons race in the decades following World War II. The period of heaviest atmospheric testing of nuclear weapons by the United States and Russia was between 1958 and 1963, producing unprecedented amounts of man-made radioactive atmospheric and environmental pollution.

[Rongelap] is safe to live on but is by far the most contaminated place in the world, and it will be very interesting to go back and get good environmental data. ... While it is true that these people do not live ...

the way Westerners do, civilized people, it is nevertheless also true that these people are more like us than the mice.

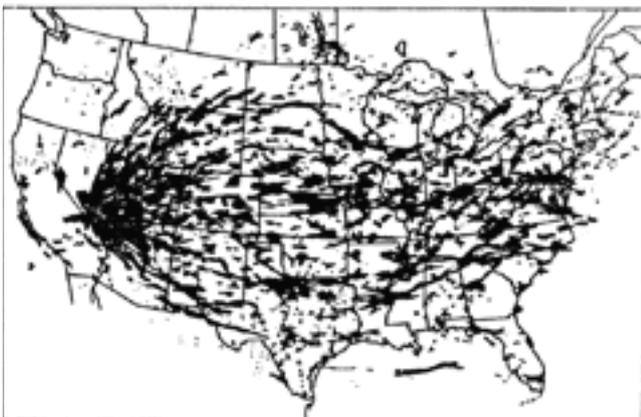
—Atomic Energy Commission Director of Health and Safety Merrill Eisenbud (1956)⁸

The nuclear weapons testing fallout did not stop at the perimeters of the test sites, borders of nuclear States, or even continents. It travelled around the world as atmospheric dust⁹, polluting the oceans¹⁰, continents¹², ice caps¹¹, and remains in the atmosphere^{12, 13, 14} and in lower orbital space¹⁵ even today.

New radiation from sources other than atmospheric testing, primarily nuclear power plants, and the new threat from depleted uranium weapons, has contributed to increases and cumulative effects in the radiation burden globally despite the reduction in atmospheric testing. In April 2003, the World Health Organization¹⁶ announced that the global cancer epidemic may increase 50% by 2020.

TESTING IN THE U.S.: 1200 nuclear weapons tests were conducted inside the continental U.S. at the Nevada Test Site. In the year before the Partial Test Ban Treaty was signed in 1963, nearly 300 atmospheric tests were conducted at the Nevada Test Site, almost a nuclear test per day! Such large amounts of radiation from Nuclear States testing programs, not only in the United States, has turned the world population into human guinea pigs and resulted in a global cancer epidemic as well as large increases in radiation related diseases¹².

Areas of the Continental United States Crossed by Three or More Nuclear Clouds from Aboveground Detonations.



This radiation fallout map, from *Under The Cloud: The Decades of Nuclear Testing*¹⁷ based on U.S. Govt. data, illustrates the effects of 1200 nuclear weapons tests conducted at the Nevada Test Site. The U.S. Government admitted in November, 2002, that every person living in the United States between 1958 and 1963 was exposed to fallout from nuclear weapons testing.

The delayed effects are now apparent. The U.S. population is suffering from an epidemic of radiation related diseases: infant mortality, low birth weights, cancer, leukemia, heart disease, autism, diabetes, Parkinsons Disease, Lou Gehrigs (ALS), asthma, Chronic Fatigue Syndrome, hypo- thyroidism in newborns, obesity, immune system damage, and learning disabilities. One out of 12 children in the United States is considered to be disabled.¹⁸

BABY TEETH AND BABY BUGGIES: Many factors contributed to the signing of the Partial Test Ban Treaty in 1963. Two strong influences were studies^{19, 20, 21, 22} by Dr. Barry Commoner on radiation levels in American baby teeth, and the testimony by Dr. Ernest Sternglass in the Senate about studies linking childrens cancer to radioactive fallout.



FIGURE 2 U.S. NEWBORN DETERIORATION IN THE NUCLEAR AGE, 1945-1996 (Source Dr. E. Sternglass²³)

With the help of grandmothers, mothers, and citizens, Dr. Barry Commoner was able to collect nearly 350,000 baby teeth from children born in the U.S. during the period of atmospheric testing. He measured Strontium-90 which replaces calcium in the baby teeth, and is a man-made isotope or fission product from nuclear weapons testing and nuclear reactors.

By measuring the Strontium-90 levels in baby teeth which are formed in the unborn baby (a natural dosimeter), he was able to show an increase in the levels measured which reflected the amount of radiation from fallout the unborn babies were exposed to from the diet and bones of the mother.

Developing foetuses are the most sensitive to ionizing radiation which causes foetal death, infant mortality (see Figure 2), and damages the development of the baby as well as delayed impairment of brain function and other processes.

Figure 1: U.S. Nuclear Weapons Fallout Map

When thousands of mothers, grandmothers, and little old ladies in tennis shoes pushing baby buggies surrounded the White House in protest, the end was near for atmospheric testing. But the damage was not done. It would take more than fifty years to begin to understand the impact of large amounts of man-made radiation on the health of the global community and the health of the environment^{24, 25}

Government policy covered up the impact of nuclear testing. Bill Curry reported in the The Washington Post:

*Officials involved in the U.S. bomb tests feared in 1965 that disclosures of a secret study linking leukemia to radioactive fallout from the bombs could jeopardize further testing and result in costly damage claims... That study, as well as a proposal to examine thyroid cancer rates in Utah, touched off a series of top-level meetings within the old Atomic Energy Commission over how to influence or change the two studies. The document also indicates that the Public Health Service, which conducted the studies, joined the AEC in reassuring the public about any possible danger from fallout.*²⁶

It is clear that American citizens have paid the price for nuclear weapons testing with their health², with the impact on the environment²⁷, and with the Cold War Mortgage²⁸ which will continue to be an economic burden for decades.

We are just beginning to understand and to educate the public secret fallout^{5,6,12,17,27,28,29,34,45,48,56,62...} despite the coverups by the Nuclear States^{5,45}. A generation of American children were sacrificed for nuclear weapons testing. What species kills its young for national security?

DEATHS, DISEASES, AND DELAYED EFFECTS:

When radioactive isotopes are inhaled or ingested they cause internal exposure. Drinking water and dairy products are the main pathways for internal exposure to fission products from nuclear weapons testing and nuclear power plants. In the case of depleted uranium weaponry under battlefield conditions, inhalation of insoluble depleted uranium oxide dust and fumes is the main pathway, not only to soldiers on the battlefield but to downwinders in contaminated regions. Insoluble radionuclides when attached to very fine dust, as is the case with depleted uranium, are extremely biologically toxic when inhaled²⁵.

Some isotopes are considered to be more dangerous than others because of their impact on biological and other natural systems. Three of the most dangerous radioactive isotopes are Carbon-14 (radiocarbon), Tritium (radioactive hydrogen), and Krypton-85²⁹. Strontium-90 is also very dangerous because it substitutes for Calcium which has many functions, not only in the bones and teeth, but in the cell processes and nerves of the body. Uranium has an affinity for Hydrogen, Phosphorous, Oxygen, Calcium, Iron, and Copper – all essential elements of cell, nerve, and metabolic functions. In fact, Uranium is biologically unpredictable because the large complex electron cloud around the nucleus allows it to form complex compounds which can even be non-stoichiometric³⁰.

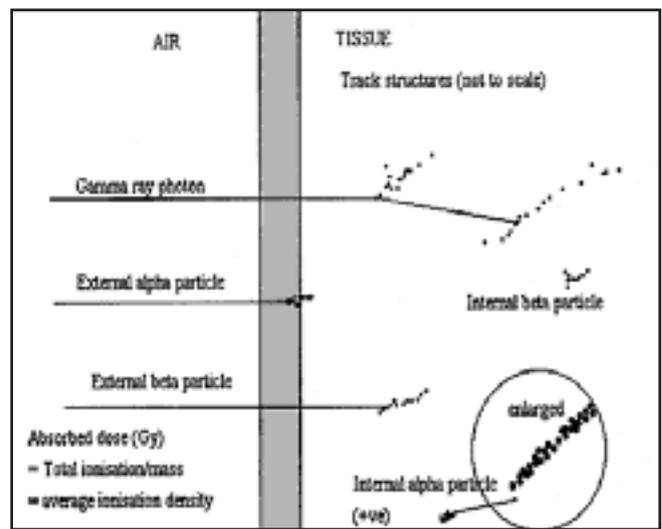


Fig 3 ECRR 2003 -The interaction of ionising radiation with matter to produce ionized molecules. (Source ECRR³²)

Ionizing radiation is released in three forms of energy from the nucleus of the atom – alpha particles, beta particles and gamma rays. Under the right conditions a single particle or ray can cause cancer and other radiation related diseases.

Alpha particles are slow heavy particles which are considered to be the most harmful form of internal exposure because they release large amounts of energy (heat) and travel very short distances, less than two cells. The dose or local effect from one alpha particle from a Uranium-238 nucleus is 50 times the allowable annual whole-body dose under international standards³¹.

In order to hide this, the International Commission on Radiological Protection (ICRP) and other governmental agencies, averaged the local dose over the whole body which essentially made the impact of the local effect (the real damage) nearly disappear. A good analogy would be like shooting

A bullet into a crowd. That bullet would kill or wound several people which would be the immediate and local effect. But the ICRP model for radiation risk would average the harm from that bullet over the entire crowd, instead of the people affected, and the harm from that bullet would virtually disappear.

The damage from the local effect can be to the DNA in the nucleus of the cell; the mitochondria in the cell and nerves which also have DNA and RNA and provide the energy for the body; the chemicals, hormones, enzymes, signalling mechanisms in the cell; the neurological and neuromuscular systems; brain function; thyroid, pituitary, pancreas; and other life-giving organs and processes. Larger organisms have cells which are arranged in a cooperative system in order to function in a complex system. Damage to any of the cells or any part of the functioning processes of those cells affects the whole system. Radiation damage to one cell is not isolated and restricted to that cell, it is shared by hundreds of thousands of neighboring cells, called the “bystander effect”⁷⁴, and also affects other organs and functions.

The immediate effect of acute radiation exposure can be death which occurred at Hiroshima, Nagasaki and Chernobyl. Or over time, diseases can develop like cancer, diabetes, Lou Gehrig’s disease, leukemia etc. And there are other delayed effects which may not be apparent for years, such as brain function damage expressed in lower SAT scores^{33,34,40} and impaired cognitive function^{7,18} is not apparent until after an exposed foetus becomes a young adult.

HOW DID THEY HIDE IT?

Scientists and military experts knew there would be consequences from contaminating the global environment with radiation. But they justified it with the need for “National Security” and believed it outweighed the health and environmental effects on the global community.

The creation of the Environmental Protection Agency (EPA) is a good example. The EPA was started by Dr. Stanley Tompkins, then Director of the secret Naval Radiological Defense Laboratory at Hunters Point Naval Shipyard south of San Francisco. Beginning in 1947, the Navy conducted research at this laboratory for three decades, where 550 civilian scientists and 65 Navy officers conducted research on the biological and environmental effects of ionizing radiation⁴⁸. They experimented on plants, animals, prisoners, soldiers, and even the predominantly Black community at the shipyard (without informing them)⁶². Dr. Tompkins eventually brought his friends over from the Atomic Energy Commission and started the EPA⁴⁴. The real and hidden purpose of the EPA was to conceal the environmental effects of radiation from the American people.

For the same reasons, the National Cancer Institute, National Institutes of Health (NIH), and the Centers for Disease Control (CDC) were formed, with help from the Atomic Energy Commission and the military. By controlling the information reaching the public and hiding the

Radiation Related Diseases:

Foetal death ^{5,34,40}	Thyroid Disease ^{17,40,41,42}
Infant mortality ^{12,34,40,41,42}	Neurological and neuromuscular diseases ³⁴
Low birth weights ^{34,40,41,42}	Mitochondrial dysfunction ⁴³ : Parkinsons,
Hypothyroidism ^{34,40}	Lou Gehrigs (ALS), Hodgkins Disease
Childhood diabetes ^{34,35,40}	Chronic fatigue syndrome ^{34,40}
Cognitive damage ^{7,18} – lower SAT scores ^{33,34,40}	Alzheimers disease ⁴⁵
Autism ⁴⁰	Mood control/violence ^{36,37,38,40,41}
Cancer ^{6,16,34,41}	Infertility ^{3,4,34}
Leukemia ^{24,26,40,41,42}	Immune system damage ^{25,29,34,41}
Obesity ^{34,42}	Ischemic heart disease ^{6,34,41,42}
Asthma ^{34,41}	Premature aging ^{25,39,42}
Birth Defects ^{11,34,40,41,42}	AIDS ^{34,40,41}

truth under the cloak of secrecy, the U.S. government has been able to conceal much of the damage from the nuclear weapons program^{5,45}. No single factor has had a greater negative impact on U.S. democracy than the secrecy of the nuclear weapons program^{5,45}. As time goes on, however, the lies are unraveling.

One of the most important recent challenges to the radiation coverup since 1945 is the recent European Parliament Report on Low Level Radiation². Released in January 2003 by the European Committee on Radiation Risk (ECRR), an EU subcommittee, it challenges the A-bomb studies^{5,45} conducted by the U.S. Government on Hiroshima and Nagasaki survivors. The A-bomb studies formed the basis for the dose and risk models used internationally to set the radiation limits for nuclear workers and civilian populations by the International Committee on Radiation Protection (ICRP).

releases of radioisotopes to the environment from the operation of nuclear fuel cycle will result in significant increases in cancer and other types of ill health."

"Using both the ECRR's new model and that of the International Committee for Radiation Protection (ICRP), the committee calculates the total number of deaths resulting from the nuclear project since 1945. The ICRP calculation, based on figures for doses to populations up to 1989 given by the United Nations, results in 1,174,600 deaths from cancer. The ECRR model predicts 61,600,000 deaths from cancer, 1,600,000 infant deaths and 1,900,000 fetal deaths. In addition the ECRR predicts a 10% loss of life quality integrated over all diseases and conditions in those who were exposed over the period of global weapons fallout." (p. 182-183)

Closing the Circle on the Splitting of the Atom

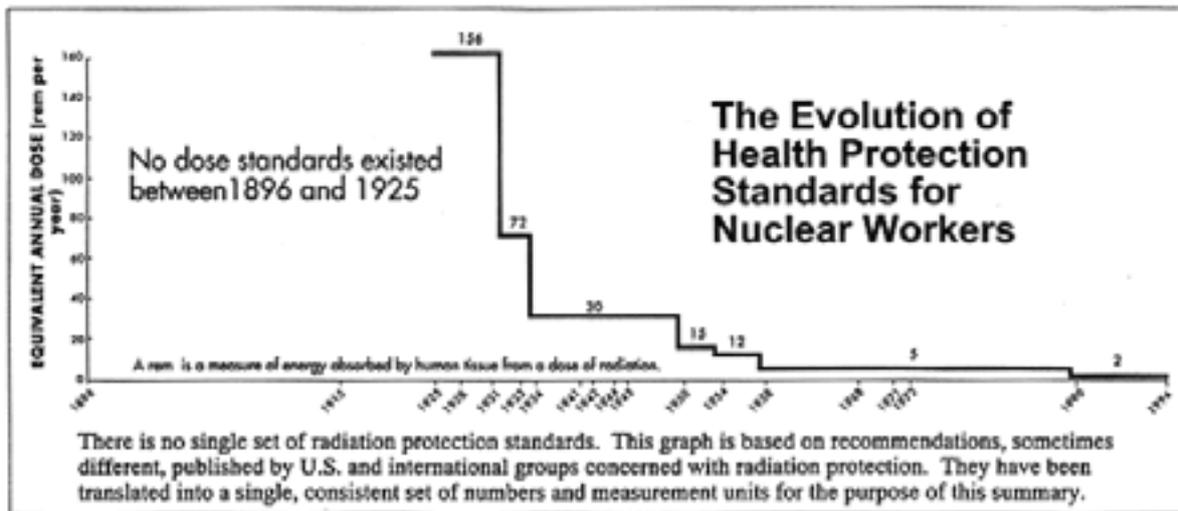


FIG. 4: Radiation protection standards have evolved over time as studies on exposed workers^{5,42,45} and heavy fallout on populations^{2,5,9,11,12,14} have provided better scientific and medical evidence of the radiobiological effects on living systems. Radiation protection standards have reached increasingly conservative limits.⁵⁶

The ECRR report exposes the manipulation of data in the A-bomb studies which underestimates the radiation exposure damage by as much as 1000 times, considers only acute external exposure to gamma rays, and limits radiation related diseases to cancer and birth defects.

The European Committee on Radiation Risk (ECRR) concludes:

"The present cancer epidemic is a consequence of exposure to global atmospheric weapons fallout in the periods 1959-1963 and that more recent

NUCLEAR POWER PLANTS: CHRONIC LOW LEVEL RADIATION

The nuclear power program was developed and "sold" to American citizens in the 1950's by the U.S. government as a source of energy "so cheap it would hardly have to be metered"⁴⁵. Another U.S. government radiation "con game", the hidden purpose was to produce plutonium needed to develop the nuclear weapons program. During peak atomic bomb testing in the middle 1950's, Dr. Barry Commoner's St. Louis study^{20, 21, 22} reported averages of Strontium-90 levels in baby teeth which ranged from 1.0-3.0

picocuries per gram of calcium with peaks of 14.6 picocuries/gram. After reaching a peak in 1963, Strontium-90 levels declined in the U.S. but did not disappear because of continuing atmospheric releases from French and Chinese bomb tests, underground nuclear testing by the U.S. and Russians, as well as an increasing number of nuclear reactors.

When French and Chinese bomb tests ended in 1980, Strontium-90 levels should have declined, due to radioactive decay of environmental Strontium-90 residues, to about 0.1 picocuries/gram by 1990. Instead, levels were as high as 1.99 picocuries/gram in 1988 and had only dropped to 1.15 picocuries/gram in 1992.

Baby teeth from children born between 1979 and 1992 were nearly the same, 1.2-2.0 picocuries/gram, as during the bomb testing years, and some were as high as 16 or 17 picocuries/gram^{46, 50}. There had to be a new source for Strontium-90 in the environment (the half-life is 29.1 years), some of which came from the Three Mile Island nuclear reactor accident in 1979 and Chernobyl in 1986. However Federal Records also reported airborne emissions from nuclear power plants in the 1980's. The Department of Energy (DOE) stopped measuring Strontium-90 levels in adult diets in 1982, and the EPA stopped monthly reports of fission products in milk in 1990. Why?

BREAST CANCER MAP

High risk counties within 100 miles of nuclear reactors were identified by plotting breast cancer deaths using U.S. government data reported annually by counties to the CDC. The dark areas on this map identify counties where 2/3 of all breast cancer deaths in the U.S. occurred between 1985 and 1989. The highest concentration of nuclear power plants in the eastern U.S. serve the energy needs in the areas of highest population density. The locations of nuclear weapons labs and a few nuclear power plants are indicated by the highest breast cancer deaths in the western part of the U.S.

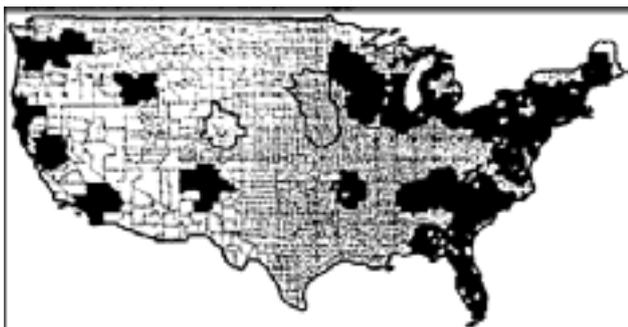


Fig. 5: High Risk Counties Within 100 Miles of Nuclear Reactors (From *The Enemy Within* by J. Gould⁴⁰)

In her recent book, *Life's Delicate Balance: Causes and Prevention of Breast Cancer*⁴⁸, Dr. Janette Sherman has identified chemical carcinogens, ionizing radiation, endocrine disruptors and genetic interactions as causes of breast cancer. This map identifies chronic low level radiation as the major cause of breast cancer in the United States, confirming what H.J. Muller knew in 1927 about the strong effects of low level ionizing radiation.

COMPARING CHANGES IN INFANT MORTALITY AND CHILDREN'S CANCER RATES:

Changes in infant mortality and children's cancer rates in California were compared at two nuclear power plants after one closed and the other began operations. For the first two years after Rancho Seco closed in 1989, public health improved dramatically⁵⁰, and for the first two years after Diablo Canyon began operating in 1983, adverse health effects increased in downwind counties less than 50 miles from the reactors [Source for disease statistics in this study: National Center for Health Statistics (NCHS)].

In the first two years after Rancho Seco closed, infant mortality decreased 16% and children's cancer for 0-4 year olds decreased 32%⁴⁹. Other changes reported were a 20.9% decrease in deaths from birth defects for 0-1 year olds, and a 29.3% decrease in deaths from birth defects in 1-4 year olds⁴⁹.

In the first two years after Diablo Canyon began operations infant mortality increased 12.9%⁴⁹. After 1990, the cancer death rate for children under 20 increased 74.5% near Diablo Canyon (but declined 18.1% near Rancho Seco)⁴⁹. After 1990, the death rate in children under age 20 near Diablo Canyon increased for birth defects, pneumonia and infectious diseases suggesting immune system damage. Strontium-90 levels measured in baby teeth since Diablo Canyon began operating have risen by 49.6%⁴⁹.

Low Level Radiation Pathways

Nuclear power plant emissions are removed from the atmosphere by nucleating agents such as rain^{40,42, 47}, fog⁴⁷, snow⁴⁷, and pollution⁴⁷. Areas of high rain and snow generally have high concentrations of low level radiation in the environment reflected by increases in Strontium-90 levels in baby teeth and radiation related diseases.

Dairy products and drinking water are the main pathways for ingestion of nuclear power plant emissions.

Because Asians are lactose intolerant, they have the lowest dairy product intake resulting in lower breast cancer and infant mortality rates than Whites and Blacks.

Regional effects after Rancho Seco shut down were also reflected in improved mortality rates, for all causes and all races, in persons over 65 living in San Francisco County. Drinking water for the San Francisco Bay Area comes from the Sierra Nevada Mountains, a high mountain range less than 50 miles east of Rancho Seco. Rainout and snowout over the Sierras removed 95% of the Rancho Seco emissions from the atmosphere and deposited the radiation in the environment, contaminating the drinking water for the Bay Area. Using data from the NCHS, mortality rates in San Francisco for all cancers, lung disease, dementia, heart disease, pulmonary disease and Alzheimer's disease for persons over 65 showed decreases and were below national averages after shutdown⁴⁹.

Diablo Canyon mortality rates for cancer, lung cancer, brain cancer and heart disease had been lower than San Francisco rates before Diablo Canyon began operations, but increased dramatically higher than San Francisco rates quickly after startup⁴⁹. Pulmonary and Alzheimer's mortality rates were lower for San Francisco compared to Diablo Canyon before operations began, but San Francisco rates declined even more after Rancho Seco shut down while Diablo Canyon rates continued to increase as late as 1998, the year of the last available data when the study was concluded⁴⁹.

Unborn foetuses, babies, young children and the elderly are the most susceptible to radiation exposure.

STRONTIUM-90 LEVELS IN BABY TEETH FROM CHILDREN WITH CANCER:

Since 1975, national rates for children with leukemia have increased by 44% and for children with brain cancer by 50%. The Radiation and Public Health Project began to collect baby teeth from children with and without cancer living near nuclear reactors for comparison of the Strontium-90 levels⁵⁰.

In Florida, baby teeth were collected from children living around the Turkey Point and St. Lucie nuclear reactors. In St. Lucie County, cancer in children under 10 years rose 325.3% from the early 1980s to the late 1990s, and reached double the U.S. average by 1996⁵¹.

Radiation-sensitive cancers also rose quickly, including breast cancer, cancers of the blood forming organs and bone marrow such as leukemia, lymphoma, Hodgkin's disease, and multiple myeloma. Deaths from pneumonia also

increased nearly 20% (the U.S. average declined 5.2% in the same time period), a disease that requires a strong immune system response to overcome it. Strontium-90 levels in children with cancer were an average of 85% higher than children without cancer.

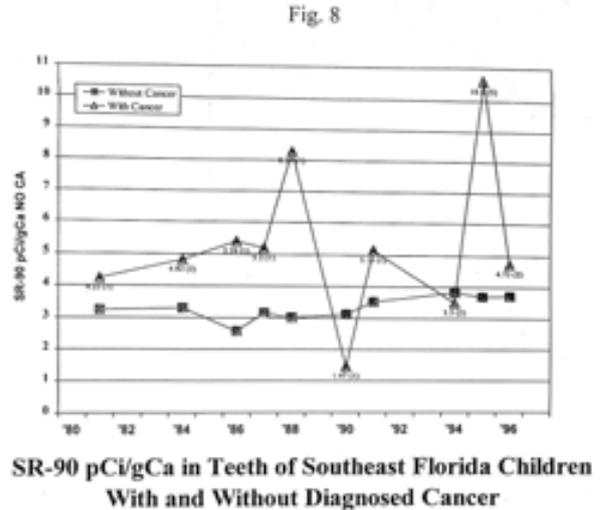


Fig. 6: Florida Study⁵¹ – Sr-90 levels in children living near nuclear reactors with and without cancer.

Fig. 6. Sr-90 in Baby Teeth vs. Cancer 0-4 Suffolk County, NY, 1982-1991
Four Year Lag (Sr-90 = 1982-91, Cancer = 1986-95)

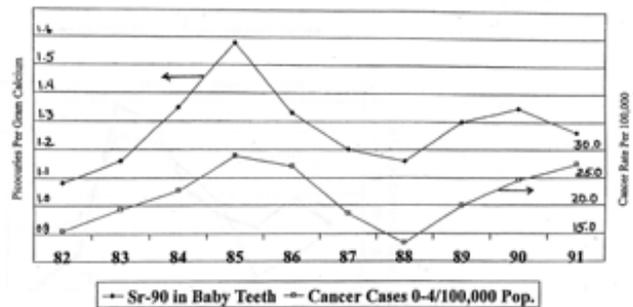


Fig. 7: Suffolk Co., Long Island, NY 1982-1991 Sr-90 levels in children with cancer⁵¹.

In a study on 488 baby teeth from Suffolk County, New York, for children born from 1982 to 1991, fluctuations in Strontium-90 levels were matched by similar changes in cancer cases for children 0-4 years old⁵¹.

Strontium-90 levels were also measured in drinking water samples collected from St. Lucie nuclear power plant to Turkey Point, a distance of about 150 miles. The drinking water in this area is from shallow aquifers easily contaminated with atmospheric pollutants. The highest levels were measured nearest to the nuclear power plants and they declined to the lowest levels midway between the plants⁵¹.

IS IT GENOCIDE? INFANT MORTALITY AND MILK:

A racial gap in infant deaths in the U.S. cannot be explained by poverty alone, although it is often given as an explanation. Low birth weights put infants at additional risk, and Blacks have the highest rates in the U.S. Black infant mortality rates in 1997 were 14 per 1000 live births; for all races 7 per 1000 live births; and for Asians 5 per 1000 live births^{52,53}. "Black infant mortality rates are now 2.4 times higher than White rates" according to Dr. Jay Gould in November 2000^{52,53}. Dr. James Collins, a pediatrician in Chicago, compared babies born to Black women born in the United States to mothers who came from Africa, and found immigrants babies to be larger and to have birthweights comparable to Whites^{52,53}. In another study of interracial couples, babies born to Black mothers and White fathers had higher rates of low birthweights than couples where the mother was White and father was Black^{52,53}. Even educated Black women who do better than impoverished Black women, are twice as likely to lose their babies to infant mortality as White women.

San Francisco Infant Mortality Rates Blacks, Whites & Asians

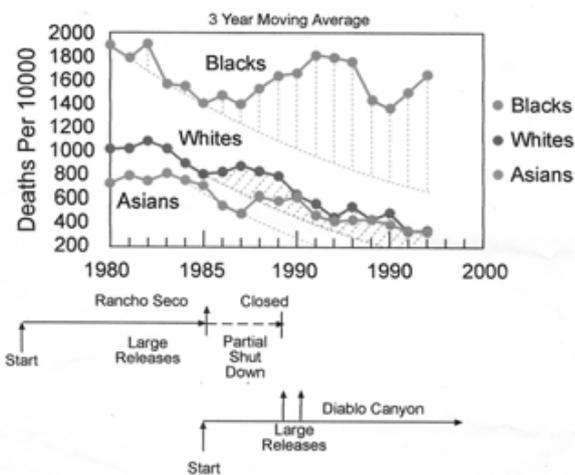


Fig. 8: Infant Morality after shutdown of Rancho Seco nuclear power plant in 1989 ⁴⁹.

Because Asians are lactose intolerant they have lower dairy product intake than other races in the U.S. Infant mortality, breast cancer and other radiation related diseases are lower for Asians than other races in the U.S.

Blacks are also lactose intolerant, but poverty and government welfare food programs make higher levels of milk and dairy products

available to them, typically causing abdominal pain, bloating, gas and diarrhea in black children. Blacks in the U.S. also have the highest rates of infant mortality, breast cancer, prostate cancer, and asthma, an immune system disease.

While working on cancer and radiation related diseases in the predominantly Black Hunter's Point Naval Shipyard community in South San Francisco, mothers told me "We know that government food is poison, we take buses to white communities when we can and shop in their grocery stores because they don't have poison in their food." The infant mortality rate for Blacks in San Francisco County was much higher than for Whites or Asians. After the shutdown of Rancho Seco in 1989, infant mortality rates improved for all races but did not improve for Blacks. In fact Black infant mortality rates increased during the period of startup for Diablo Canyon reactors, a time when a power plant has higher than normal emissions.

While studying radioactive fallout from Chernobyl in the eastern U.S., Dr. Jay Gould discovered just how poisonous milk is in Black communities. After the Chernobyl fallout passed over the U.S. in 1986, the EPA monitored radioactive Iodine-131 in milk from May until August in eastern cities. Radioactive levels in Washington DC and Baltimore milk were abnormally high, more than twice as much as other eastern cities, and could not have been from Chernobyl alone. Radiation levels disappeared from milk in eastern cities by August, except in Washington DC, Baltimore, Charleston, W. Virginia, and Wilmington, Delaware. After further investigations, Dr. Jay Gould described in the chapter "Infant Mortality and Milk" from his book *Deadly Deceit: Low Level Radiation High Level Coverup*, that he discovered the Pennsylvania Milk Board had been shipping radioactive contaminated milk from dairies around Three Mile Island and Peach Bottom nuclear power plants into eastern cities. Black infant mortality rates had been lower than the national average in Baltimore and Washington DC prior to those plants operating. After reactor startups, infant mortality in Baltimore and Washington DC increased to the highest levels in the U.S.

Following the shutdown of Peach Bottom in 1987, infant mortality rates declined to the national average levels, and continued to increase with reactor startups and accidents, and decrease with reactor shutdowns.

ENERGY CHOICES:

Energy production has risen steadily in the US over the past two decades, and so has the proportion produced by nuclear reactors. In 1995, 1,653 thousand gigawatt-hours were generated, 22.5% from nuclear origin, an increase from 15.6% in 1985 and 9.0% in 1975⁵⁴. Coal produced 55.3% and the rest from petroleum, gas, hydroelectric, and other sources. In France, 77% of the net electricity generation is from nuclear sources; 47% in Sweden; 42% in the former USSR; 30% in Japan; 29% in Germany; and 17% in Canada⁵⁴.

The national average for Strontium-90 levels in 1277 baby teeth from children born between 1986 and 1995 rose nearly 50%⁴⁹. This increase correlates with national average increases in the percentage of operating capacity from 58 to 80% by 1995 for U.S. nuclear power plants as reported by the Nuclear Regulatory Commission. Nuclear power plants have presently increased operating capacity to more than 90% for the national average – maximizing profits and sacrificing children⁴⁹.

AVERAGE SR-90 IN BABY TEETH IN THE U.S. VS. AVERAGE ANNUAL PERCENT OPERATING FACTOR OF U.S. NUCLEAR REACTORS 1986-95

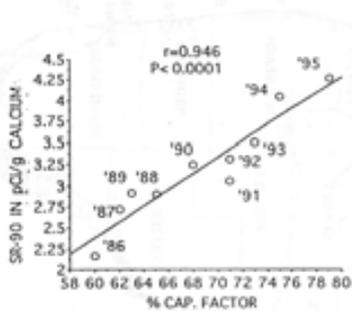


Fig. 9: 1986-1995 Sr-90 levels and U.S. nuclear operating capacity

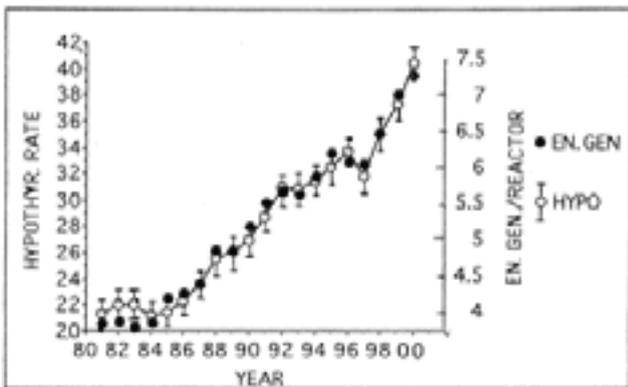


Fig. 10: 1980-2000 60% of U.S. newborns Hypothyroidism and U.S. nuclear power operating capacity

Autism in California 1885 - 1996

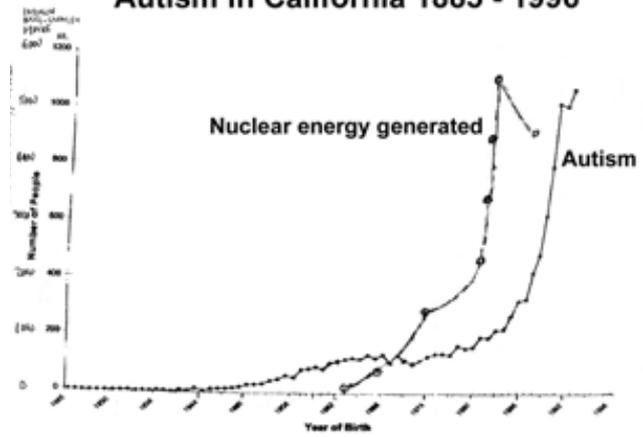


Fig. 11: California Autism and U.S. nuclear power power operating capacity

A generation of American children have been sacrificed for nuclear power. What species kills its young for energy?

THE URANIUM & NUCLEAR ENERGY CARTEL:

In 1979, Dr. Jay Gould was hired by Westinghouse Electric Corporation as an expert antitrust statistician in a price-fixing lawsuit involving a 600% increase in uranium prices at the time of the oil embargo in the early 1970's⁴¹. He discovered that the market was flooded with uranium due to frequent shutdowns in commercial reactors and they had performed far below expectations. Monthly reports of reactor operations from the nuclear trade press were more realistic than Atomic Energy Commission contradictory statistics on uranium consumption⁴¹. There were no shortages of uranium to justify the increase in prices which Westinghouse would have to cover because uranium fuel prices were fixed in commercial nuclear power plant contracts globally, guaranteeing a fixed fuel price to the buyer. The "international uranium cartel" controlled by the Rothschilds⁶⁴, had mutual interests and ties to the British Royal Family, as a Rothschild is the Queens business manager. It was not surprising that Dr. Gould soon received a phone call after reporting to Westinghouse lawyers that the British Royal Family privately owned \$6.5 billion in uranium holdings through Rio Tinto Mines⁶⁴. Wanting to avoid the public embarrassment of exposing this large Royal Family interest in uranium, the lawsuit was quickly settled out of court in favor of Westinghouse⁶⁴. Dr. Gould was told to pack up his office, ship all documents to Westinghouse, and the case was closed.

The California energy crisis of 2000 began within a week or two of President Bush taking office, and resulted in Texas energy companies extorting billions of dollars from the State of California through emergency energy contracts. In fact, it bankrupted the state, and I attended many Public Utility Commission meetings in San Francisco during the crisis where the elderly, people on fixed incomes, immigrants with small businesses, and those living on moderate incomes complained that they were forced to make a choice between feeding themselves or turning on the lights. It was no surprise to learn that the British Royal Family had large investments in the Texas energy companies ripping off the state of California. It was also no surprise when an energy activist casually told me one day that Suisse Lazard, the Swiss branch of the Rothschilds, had been in Sacramento during the energy crisis visiting the Governor, negotiating to buy Pacific Gas and Electric (currently in bankruptcy) from the state of California⁵⁵.

The Rothschilds also own part of the largest voting machine company in the world, the same voting machines involved in two scandalous Florida elections that put Bush illegally in the White House in 2000, and the Republicans in control of Congress in 2002. Following the November 2002 elections, Vice President Cheney announced within a week that the U.S. would be building "hundreds of new nuclear power plants". A payback no doubt, for delivering control of Congress to the Republicans, followed by appropriations of lucrative contracts to the nuclear industry. No new nuclear power plants have been built in the U.S. due to opposition of Americans in the early 1970's when citizens forced the cancelation of existing contracts. California citizens ran the nuclear power industry out of the state after plans to build dozens of reactors, one in Silicon Valley, became public.

The famous Hearst family of San Francisco⁶⁶, patrons and creators of the University of California at Berkeley, like the British Royal Family, own uranium mines around the world. Phoebe Hearst, matron of the mining and newspaper family, designed UC Berkeley to have complementary mining and military programs. In designing the campus, she had the axis of the main street leading from the campus to San Francisco Bay changed by 5 degrees to point out the Golden Gate into the Pacific Rim. Her purpose for building the university was to send miners protected by the military to plunder Pacific Rim countries. The Philippines was the first target, which the U.S. did plunder soon after in

1898. U.C. Berkeley was also the birthplace of the Manhattan Project⁶⁶, and manager of the nuclear weapons laboratories for more than 60 years.

Westinghouse and General Electric designs are used in 85% of commercial nuclear power plants around the world, including Japan. A former Toshiba salesman told me that reactor contracts for new nuclear power plants, mostly Westinghouse and GE designs, are doled out to three Japanese corporations, Toshiba always gets the first one and Mitsubishi gets the second one. Westinghouse is now planning to increase the number of nuclear power plants in Japan from 52 to 75. Who owns the media? Westinghouse owns CBS, and GE, two of the largest telecommunications monopolies in the U.S. It is clear from a list of Congressional donations from nuclear power interests, that the nuclear industry has a lot of influence on who becomes the U.S. President⁶⁵. Does that apply to the Japanese Prime Minister as well?

ECRR RECOMMENDATIONS:

*"The committee lists its recommendations. The total maximum permissible dose to members of the public arising from all human practices should not be more than 0.1mSv, with a value of 5mSv for nuclear workers. This would severely curtail the operation of nuclear power stations and reprocessing plants, and this reflects the committee's belief that nuclear power is a costly way of producing energy when human health deficits are included in the overall assessment. All new practices must be justified in such a way that the rights of all individuals are considered. Radiation exposures must be kept as low as reasonably achievable using best available technology. Finally, the environmental consequences of radioactive discharges must be assessed in relation to the total environment, including both direct and indirect effects on all living systems."*²

LOW LEVEL RADIATION:

There was never any doubt about the great biological hazard of massive nuclear fallout even before testing started⁵⁷. But there was little concern about the global low level fallout from atmospheric contamination by very small particles which remain suspended until nucleating agents such as rain, snow, and pollution remove them from the air and deposit them in the environment, exposing the global population to chronic low level radiation.

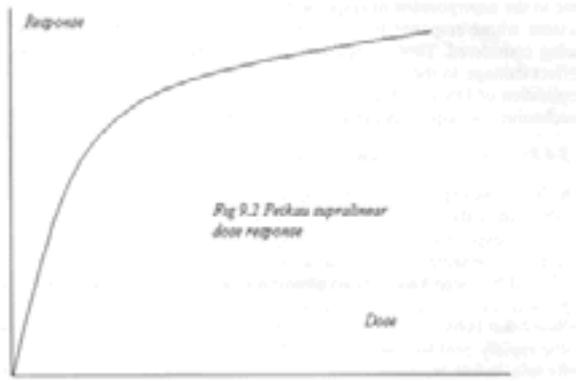


Fig 9.2 Petkau supralinear dose response curve (genomic instability bystander yields of damaged chromosomes appear to follow this type of response)

FIG. 12: Supralinear dose response (Source ECRR² Fig. 9.2)

Dr. J. Gould stated in his book *Deadly Deceit: Low Level Radiation High Level Coverup*:

“Our findings of a supralinear effect also agree with similar findings for cancer mortality from exposures to low-level radiation made by four eminent authorities: Dr. John Gofman, Dr. Karl Z. Morgan, Dr. Thomas Mancuso and Dr. Alice Stewart. All four scientists worked at various times for the U.S. Atomic Energy Commission or Department of Energy. All four concluded that the dose-response relationship was supralinear, which means that there is no level of radiation low enough to be deemed “safe”. The government terminated the services of all four when they each, independently, came up with what Dr. Gofman has called the “wrong” answer--that is, the opposite of what the AEC wanted to hear.”

NO SAFE LEVEL:

Discovery of mechanisms and factors necessary to understand the supralinear effect of low level radiation came slowly. The physical or “bullet effect” contributes to 30% of the damage to the cell from the particle or ray tearing through the cell membrane and interior parts of the cell such as the nucleus, DNA, and mitochondria. The other 70% is damage from the indirect chemical effects initiated by the highly reactive chemical species (free radicals)⁶³ formed by the energy which diffuses along the decay path. The released energy creates a large number of free radicals such as the excited molecular states of oxygen, a superoxide radical which is a highly toxic substance⁶³. So toxic in fact, that a single excited oxygen molecule can destroy an entire cell. The biological damage can be very different, “depending on the instantaneous microscopic density of the energy deposited” [the linear energy transfer or LET]²⁵.

Supralinear Dose Response for Low Level Radiation

In 1968, a researcher named Stokke discovered for Strontium-90 that the effect per rad increased as the dose was reduced⁵⁹.

Again in 1973, researchers⁵⁸ reported in their studies on inhalation of plutonium⁵⁸ a dose-response relationship that rose much more rapidly at low doses than at large doses²⁵.

This became known as the “supralinear dose response” [see Fig. 12] a logarithmic response which rises very rapidly at low concentrations and then saturates rapidly for higher doses².

This is also known for some chemicals²⁵.

And toxic free radicals can be deactivated by collisions with each other which occur more frequently for high energy density alpha particles and less so for low density beta or gamma and X-rays because the free radicals are more distant from each other decreasing the likelihood of collisions²⁵. If “scavenger” molecules, the bodies natural defense, are present they can capture and deactivate toxic molecular species²⁵. The protective system of the body involving enzymes, vitamins and micronutrients which can control the free radical attacks on the cells. The concentration of these “radioprotective” molecules can greatly influence the biological dose effect, but damage occurs when the protective system is overwhelmed by oxidative stress. Free radicals contributes to membrane damage, immune system damage, and premature aging^{25,63} as well as many other radiation related diseases.

The unexpectedly high toxicity of low level radiation can only be explained by the efficiency of the excited oxygen molecule to initiate oxidative chain reactions in the phospholipids of cell membranes²⁵. The efficiency of the oxygen molecule in reaching the sensitive cell membrane where the damage occurs, is inversely proportional to the density of ionization²⁵. If an alpha particle or strong X-ray passes through a cell, the increased ionization density will weaken the electric field around the cell membrane which attracts oxygen molecules. From computer calculations the discovery was made that the greater the concentration of free ions, the weaker the electric field that attracts the oxygen molecules to the phospholipids which make up the cell membrane²⁵. Free radicals reaching the membrane initiate an oxidative chain reaction that eventually destroys the membrane. But weakening the electric field around the membrane will prevent them from efficiently reaching it.

In 1972 Petkau discovered that cell membranes require a smaller total dose for rupture as the dose rate is reduced²⁹. The implications of this

for long term exposure to low level radiation are very serious as low level radiation is increasingly introduced into the environment. The implications of the long term effects on large populations in regions contaminated with long lived radionuclides such as depleted uranium, with a half life of 4.5 billion years, have not even been addressed. The intentional and widespread use of depleted uranium weaponry by the U.S. and the U.K. which began in 1991, in the Middle East and Central Asia, will have an unprecedented outcome in terms of weapons of mass destruction.

For the unborn, LeVann was able to show that “for the most sensitive stages in the development of multicellular organisms such as man, each radioactive atom is some 10-100 million times more toxic than a molecule of the most potent teratogenic substances such as thalidomide.”¹¹

Another surprising discovery was that low level radiation exposure spread out over long periods of time is more damaging to cell membranes than to the genes of living cells²⁵. This type of exposure to the foetus, infants, or adults is far more damaging by 100-1000 times than would be expected from the dose-risk model known from acute exposure to X-rays and direct bomb exposures. It also explains why infant mortality and radiation related diseases decline, and SAT scores improve in young adults, soon after radiation exposure is removed. When the test ban treaty ended atmospheric testing, and following shut-downs of nuclear reactors, health improvements have been rapid and dramatic.

For low level radiation the dominance of somatic damage to cell membranes from free radicals over genetic damage to the reproductive cells means:

- birth defects in the newborn would be developmental rather than genetic in origin
- increases in cancer would be the result of damage to the body's own defenses against the proliferation of cancer cells rather than the triggering effects of damage to the genes causing loss of the growth control mechanism which can result in cancer
- conditions never before associated with low level radiation doses should be detectable like
 - infectious diseases such as influenza and pneumonia
 - chronic diseases associated with aging: emphysema, heart disease, diabetes, kidney disease and stroke

This also means that from the evolutionary point of view, the protection of the genes in order for reproduction to successfully occur, was necessary in order to protect them from natural background radiation over millions of years of time. This resulted in the development of extremely efficient chemical repair mechanisms for the genes. But this was not necessary for the individual cells in a multicellular organism which constantly reproduce and die. Once an organism has reproduced, what happens after that is of little significance.

The one thing all living things have in common, from the lowliest bacteria to the human, is that our ancestors have successfully reproduced from the beginning of life on earth. How can we so easily destroy such a long history of reproductive success with short term needs for defense, energy, and profits for a few?

THE OFFICIAL POSITION ON LOW LEVEL RADIATION

“... On rare occasion, there has been official acknowledgement of the deep-seated political motivations for understating the potential health effects of low-level radiation. For example, William H. Taft, a U.S. State Department attorney, said in 1981:”⁶⁰

*The mistaken impression [that low-level radiation is hazardous] has the potential to be seriously damaging to every aspect of the Department of Defense's nuclear weapons and nuclear propulsion programs. . . . It could adversely affect our relations with our European allies.*⁶¹

“[There is] reason to suspect that the lethal nature of low-level radiation is no “mistaken impression.” The scale of potential damage was foreseen by Rachel Carson, Linus Pauling, and Andrei Sakharov, and was later supported by warnings from John Gofman, Arthur Tamplin, Alice Stewart, Thomas Mancuso, Karl Morgan, Carl Johnson and Ernest Sternglass.”⁶⁰

DEPLETED URANIUM WEAPONS AND LOW LEVEL RADIATION:

THE TROJAN HORSE OF NUCLEAR WAR

Heat not a furnace for your foe so hot that it do singe yourself.

William Shakespeare (1564–1616)

OCTOBER 30, 1943:

The blueprint for depleted uranium weapons is a declassified memo⁶⁷ dated October 30, 1943, to General Leslie R. Groves. Recommended by three of the top physicists under the Manhattan Project, Drs. James B. Conant, Chairman, A. H. Compton, and H. C. Urey, they comprised a Subcommittee of the S-1 Executive Committee on the "Use of Radioactive Materials as a Military Weapon." In Conant's own words:

"To me, the development of new and more effective gases seemed no more immoral than the manufacture of explosives and guns.... I did not see in 1917, and do not see in 1968, why tearing a man's guts out by a high-explosive shell is to be preferred to maiming him by attacking his lungs or skin⁶⁸."

The memo recommended developing the radioactive trash (fission products and depleted uranium) from the Manhattan Project⁶⁷:

"As a gas warfare instrument the material would be ground into particles of microscopic size to form dust and smoke and distributed by a ground-fired projectile, land vehicles, or aerial bombs. In this form it would be inhaled by personnel. The amount necessary to cause death to a person inhaling the material is extremely small. It has been estimated that one millionth of a gram accumulating in a person's body would be fatal. There are no known methods of treatment for such a casualty."

Finely divided particles, in the 0.1 micron range behave, in this case like a radioactive gas:

"Two factors appear to increase the effectiveness of radioactive dust or smoke as a weapon. These are:

(1) It cannot be detected by the senses;

(2) It can be distributed in a dust or smoke form so finely powdered that it will permeate a standard gas mask filter in quantities large enough to be extremely damaging."

Contaminating areas and regions with a long-lasting effect:

"As a Terrain Contaminant. To be used in this manner, the radioactive materials would be spread on the ground either from the air or from the ground if in enemy controlled territory. In order to deny terrain to either side except at the expense of exposing personnel to harmful radiations

... Areas so contaminated by radioactive material would be dangerous until the slow natural decay of the material took place

...for average terrain no decontaminating methods are known. No effective protective clothing for personnel seems possible of development.

These materials may also be so disposed as to be taken into the body by ingestion instead of inhalation.. Reservoirs or wells would be contaminated or food poisoned with an effect similar to that resulting from inhalation of dust or smoke."

The memo describes the internal exposure:

"LUNGS: Particles larger than 1 μ [micron]in size are likely to be deposited in nose, trachea or bronchi and then be brought up with mucus on the walls at the rate of 1/2 - 1 cm/min. Particles smaller than 1 μ [micron] are more likely to be deposited in the alveoli where they will either remain indefinitely or be absorbed into the lymphatics or blood. The probability of the deposition of dust particles anywhere in the respiratory tract depends upon respiratory rate, particle size, chemical and physical nature, and the concentration in the atmosphere.

The most serious effect would be permanent lung damage appearing months later from the persistent irradiation of retained particles, even at low daily rates. It would seem that chemical gases could accomplish more and do it more quickly so far as the skin surfaces and lungs are concerned. The beta emitters would have more permanent effects -- starting months after exposure.

GASTRO-INTESTINAL TRACT: Beta emitting f [fission and alpha] products could get into the gastro-intestinal tract from polluted water, or food, or air. From the air, they would get onto the mucus of the nose, throat, bronchi, etc., and be swallowed. The effects would be local irritation just as in the bronchi and exposures of the same amount would be required. The stomach, caecum, and rectum, where contents remain for longer periods than elsewhere would be most likely to be affected. It is conceivable that ulcers and perforations of the gut followed by death could be produced, even without any general effects from the radiation.

BLOOD STREAM AND TISSUES: Beta and gamma emitting fission [and alpha] products may be absorbed from the lungs or G-I tract into the blood and so distributed throughout the body."

The original purpose for developing depleted uranium as a weapon was to use it as a gas warfare instrument to kill people and contaminate terrain for long periods of time.

The use of depleted uranium as a kinetic energy penetrator weapon was never mentioned in this memo.

From 1943 until 1991, the United States and other countries found other materials satisfactory as kinetic energy weapons, in many global conflicts.

The introduction of depleted uranium weaponry occurred in 1991 when the U.S. broke a 46 year international taboo and used it in the Gulf War known as 'Desert Storm', after testing it thoroughly on military testing ranges and national laboratories starting in 1974. Everything was known about the hazards of depleted uranium, it is in their own reports.

The United States and Britain have staged a nuclear war in the Middle East and Central Asia. Vast regions have been contaminated as well as water supplies, farm land, critical resources and cities. The half-life of depleted uranium is 4.5 billion years, the age of the earth.

Depleted uranium is the Trojan Horse of nuclear war. It decays into daughter products more radioactive than uranium by millions and billions of times, creating an eternal nuclear war, a war against all life in contaminated regions.

United States Presidents Bush Sr., Clinton, and the present President Bush have knowingly exposed their own troops, enemy soldiers and civilians to weapons that are illegal under all treaties, war conventions and agreements, and participated in the coverup. All three presidents are war criminals under international law.

1991: Depleted Uranium Weapons and Desert Storm

"MILITARY MEN ARE JUST DUMB, STUPID, ANIMALS TO BE USED AS PAWNS IN FOREIGN POLICY"

HENRY KISSINGER

Quote from Kiss the Boys Goodbye: How the United States Betrayed Its Own POWs in Vietnam⁶⁹

In 1991, nearly 700,000 Gulf War Veterans returned to the United States after serving in 'Desert Storm' a war that lasted just a few weeks. Nearly 450,000 returning veterans were exposed to depleted uranium (DU), used for the first time on the battlefield by the U.S. military in Kuwait and Iraq. Today, 240,000 are on permanent medical disability and more than 10,000 are dead⁷⁰. They have been denied medical care since returning in 1991⁷⁰.

In a U.S. government study⁷¹ conducted by the Department of Veterans Affairs on babies born after the Gulf War to 251 Gulf War veterans, 67% were found to have serious birth defects. They were born without eyes, ears, brains, had missing organs, or other severe medical disorders⁹⁴. The wives of Gulf War veterans have been internally contaminated after intercourse from DU carried in the semen of their husbands⁷². Soldiers with sick children cannot leave the military, they would have no medical coverage for any children with a "pre-existing condition"⁹⁴. In some families the only healthy members are the children born before the Gulf War⁹⁴.

The DU dust and shells have contaminated southern Iraq, Kuwait, and Saudi Arabia⁹⁴. Carried in the winds, the radioactive dust will be transported in atmospheric dust across broad regions and around the world. The low level radiation will be deposited in the environment by the action of rain, fog, snow and pollution. Radiation respects no borders, no socioeconomic class, and no religion.

A medical doctor talked about his first Gulf War patient:

*"Saw my first Gulf War Syndrome case from Kuwait. Four months in an Abrams M-1-A tank and splashing jet fuel on himself while refueling the tanks and then sleeping in the tank at night. He said if you opened the shell magazine in the dark the depleted uranium shells glowed."*⁸¹

Gulf War Illness Symptoms & Illnesses⁷³

Chronic Fatigue Syndrome (CFS)
Severe Headaches
Rashes
Joint Pain
Muscle Pain
Nerve Damage
Neurological Damage
Kidney Damage
Lung Damage
Cardiovascular signs or symptoms
Thyroid Disease
Multiple Cancers
Auto-Immune Deficiencies
Unusual Fevers & Night Sweats
Fluid Buildup
Sleep Disturbances
Gastrointestinal signs or symptoms

Abnormal Births & Defects
Menstrual Problems
Reduced IQ
Confusion
Memory Loss
Blood In Stools & Urine
Fybromyigia
Epstein Barr Syndrome
Genetic Alterations
Sinus Diseases
Mycoplasma Fermentans Incognitis Infections
Unusual Hair Loss
Loss Of Smell
Chemical Sensitivities
Asthma
Vision Problems

Gulf War veterans and their wives have described other symptoms:

Burning semen contaminating wives with DU and unknown chemicals⁷²
Birth defects in babies born after the Gulf War
Brain function problems - mood swings⁷³, memory, violence⁷⁵/suicide⁷³, dizziness⁷³
Mitochondria damage – chronic fatigue syndrome, Parkinsons^{43,73}, LouGehrig/ALS⁴³, brain⁷³, heart disease⁷³
Immune system – impaired ability to fight infection, Asthma, (diabetes can also be expected)
Teeth – teeth crumbling⁷⁰
Bones – loss of calcium and cancer throughout the bones⁷⁰
Chronic rashes⁷⁰
Joints and bones ache⁷⁰
Metallic taste^{70,73}

TESTING FOR DU IN GULF WAR AND BALKANS WAR VETERANS:

Testing veterans for DU has mostly been avoided by the military. Urine tests are the most common test but not as reliable as other tests. Most of the testing has been conducted by independent researchers helping veterans suffering from Gulf War Syndrome. Because DU, which is formed on the battlefield after burning, is composed of insoluble oxides, when internal contamination occurs, the DU is not soluble in body fluids so it cannot be easily excreted. For that reason, the

presence of DU in the urine is evidence of internal contamination, but the absence of DU in the urine is not proof that the soldier is not contaminated.

The best evidence for DU exposures are chromosome studies but these are expensive and require specialists with experience in this type of analysis. In a study⁷⁶ by German researchers published in 2003, on Gulf War and Balkans War Veterans, they reported radiation specific-damage identified by dicentric frequencies characteristic of alpha particles. Chromosome damage from radiation is so sensitive and specific that radiation quality (alpha, beta or gamma) can be distinguished^{76,77,78,79}. The study also included one civilian who had worked in a munitions factory and was contaminated with DU metallic dust, a different exposure from uranium oxides formed under battlefield conditions, but he also had damage characteristic of alpha particles.

Susan Riordan, the widow of a Canadian Gulf War veteran who died in 1998, gave the body of her husband to be tested by independent scientists. Captain Terri Riordan is the only Gulf War veteran to have Gulf War syndrome listed as his official cause of death. He died with cancer throughout his body, up to the time of his death he suffered mood swings from homicide to suicide, and other radiation related symptoms⁸⁰. Colonel Asaf Durakovic⁹⁴, from the Uranium Medical Research Center in Canada, measured DU in the tissues, organs, brain, and bones of Capt. Riordan. His widow, Susan, told me “A different person came back from the war...”

DU AND DOWNWINDERS IN IRAQ:

The soldiers went home, but people living in the contaminated regions have been continually exposed to DU in the wind, air, food and water. In Iraq cancer, illnesses, and leukemia and birth defects in children, initially slowly increased but now are rising exponentially [see Fig. 13], just 13 years after the Gulf War. From what is known about low level radiation exposure, this is predictable for both soldiers exposed on the battlefields, and civilians living downwind.

Dr. T.M. Fasy at Mt. Sinai School of Medicine, has reported⁸² on increases in cancer and leukemia in southern Iraq:

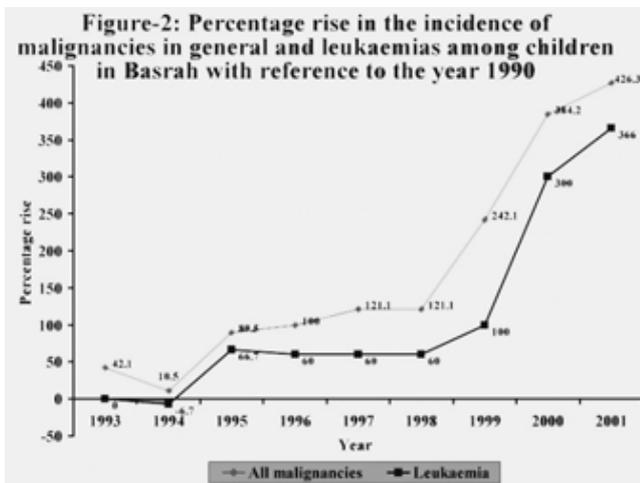


FIG. 13: Cancer and Leukemia in s. Iraq⁸²

Japanese photographers and videographers have provided excellent documentation of the effects of depleted uranium on the children and adults in southern Iraq. Takashi MORIZUMI, has photo documented⁸⁵ radiation survivors around the world, and has published several books on the children of Iraq. A new film by Ms. Hitomi KAMANAKA, Hibakusha - At the End of the World, by Group Gendai Films (2003), which she made during a visit to Iraq with Mr. MORIZUMI, tells the story of the children of Iraq, Hanford survivors in Washington state, and Hiroshima survivors in Japan. The film and photo exhibit were valuable additions to the World Uranium Weapons Conference in October 2003, in Hamburg, Germany attended by 200 people from 20 countries and 5 continents.

TESTING FOR DU FROM GULF WAR EXPOSURES IN SOUTHERN IRAQ: A number of studies have been conducted on DU levels in the environment of southern Iraq⁸⁶, DU levels measured in 71 residents of Basra who died suddenly of cancer after the Gulf War⁸⁷, chromosome studies in residents of southern Iraq⁸⁸, and

a comparison of radiation damage from nuclear weapons testing and DU contamination in camels living in the southern Sahara and southern Iraq⁸⁹.

A detailed but preliminary environmental study⁸⁶ was carried out in southern Iraq in war environment areas by Dr. Souad Al-Azawi, a geologist from Iraq, and a group of Iraqi scientists in 1995-6. Samples of DU contamination in soil, groundwater, surface water, wild plants, vegetables, meat and fish were measured for radiation levels. DU levels were concentrated at target locations and in and around destroyed vehicles. Further detailed research is needed to determine pathways, bioconcentration mechanisms, and contamination levels in that environment. Little

Dr. Al-Ali, an oncologist in Basra, presented⁸³ on the long-term impact of DU at the World Depleted Uranium Weapons Conference in Hamburg, Germany, October 16-19, 2003. He reported increases in cancer and leukemia, and strange new cancers never before reported, as well as multiple cancers in patients, and clusters in families near contaminated areas.

Dr. Jenan Hassan, a pediatrician and colleague of Dr. Al-Ali in Basra, has also presented⁸⁴ statistics and photos of illnesses in babies and children since 1990 in southern Iraq. Their presentations at the conference are on the conference website: <http://www.uraniumweaponsconference.de>.

is still known about exposure levels of Basra residents. Other studies have surveyed contamination levels in Kuwait⁸⁷.

Dr. Hari Sharma, an independent researcher, has measured⁸⁸ the depleted uranium levels in 71 residents of Basra who died after the war was over. He found levels of 150 micrograms/kilogram of DU in tissues throughout their bodies. A very high exposure rate, roughly estimated at 10 alpha particles per second throughout the body. One internal alpha particle local exposure is 50 times the allowable whole body dose for a year under international standards!

Prof. Huda Salih Mahdi Ammash⁸⁹, a microbiologist from Iraq, disappeared after the March/April 2003 war in Iraq. After months of pressure by an international agency on U.S. Govt. officials in Iraq, her location was finally revealed. She had been arrested after her face appeared on the famous U.S. deck of cards of "wanted" high level Iraqi Baath officials, and has been in prison for months at the Baghdad airport where many are being held. After much pressure, her daughter

was allowed to send her a letter, and Prof. Ammash sent a short note back saying she was alright. But others are concerned because she has cancer and needs medicine. She was accused by U.S. authorities of making anthrax bioweapons for Saddam Hussein prior to the U.S. 2003 invasion. When I spoke with Iraqi scientists and others who know her, I was told that the research she had been working on was never related to anthrax or bioweapons. She had been doing chromosome studies on DU exposure of Iraqis in southern Iraq.

A study⁹⁰ on camels *Camels dromodarius* compared those living in areas contaminated with fallout from French atmospheric testing in the southern Sahara, and DU in southern Iraq. Researchers found evidence of radiation damage in blood samples - from changes in cell counts and cell structure⁹⁰. Samples from contaminated camels were also compared to camels tested in areas not exposed to radiation contamination. In the contaminated areas of Algeria and Iraq, tests have shown leukemia in humans, camels and other animals. Humans seem to have more sensitivity to ionizing radiation than camels.

A conservative estimate of the DU used in the 1991 Gulf War is 340 tons. More than 2200 tons of DU were used in Iraq in 2003.

BOSNIA, KOSOVO AND HERZEGOVINA:

Depleted uranium weaponry was used in Bosnia and Kosovo, although other areas of the former Yugoslavia are also contaminated. Migration of DU from shells left in the ground after the 1998 war in Bosnia and Herzegovina ⁹¹ was reported by UNEP in March 2003. In just 5 years, 25% of the DU metal in the shells had dissolved and contaminated the groundwater. Illnesses and birth defects have also been reported, related to DU contamination in areas where people are now living. It has been estimated that 34 tons of DU weaponry was used in the region by NATO forces.

AFGHANISTAN:

Professor Marc Herold⁹², an international expert on the 2001 war in Afghanistan from the University of New Hampshire, has conservatively estimated that the U.S. military used more than 1000 tons of depleted uranium weaponry in the recent conflict in Afghanistan. This is nearly three times as much as the 1991 Gulf War. The levels of DU measured by UMRC in Afghanistan after the US military intervention and extensive bombing in 2001, are the highest levels ever measured in a human population⁹³.

The impact on the wildlife in Afghanistan has been devastating. Not only is the environment contaminated with depleted uranium, but the Afghans have been forced to hunt rare and endangered species in order to eat the meat and sell the skins for money. The devastating effects of depleted uranium will occur in all species in contaminated areas. The impact on the animals in the Iraq region was also devastating yet there has been very little reported.

MORE FACTS, SCIENCE, AND DETAILS:

I have testified as an expert witness on depleted uranium at two public hearings and the final tribunal for the International Criminal Tribunal for Afghanistan.

Testimonies:

Testimony June 28, 2003, ICTA Public Hearing, Chiba, Japan
"U.S. NUCLEAR POLICY AND DEPLETED URANIUM"
<http://afghan-tribunal.3005.net/english/10E-MORET.pdf>

Testimony December 13, 2003, ICTA Final Tribunal, Tokyo, Japan
<http://www.mindfully.org/Nucs/2003/Leuren-Moret-ICT13deco3.htm>

Further scientific information on DU is in this document:

Letter to Congressman McDermott : Declassified 1943 memo to General L.R. Groves — a blueprint for depleted uranium
<http://www.mindfully.org/Nucs/2003/Leuren-Moret-Gen-Groves21febo3.htm>

A NUCLEAR WAR IN THE MIDDLE EAST AND CENTRAL ASIA:

In the presentation, "Depleted Uranium Shells, The Radioactive Weapons", at the World Depleted Uranium Weapons Conference by Japanese physicist Dr. K. YAGASAKI, he made the startling calculation that 800 tons of depleted uranium approximated the equivalent atomicity of 83,000 Nagasaki bombs. Broadly speaking, that means that the atomicity equivalent of 400,000 Nagasaki bombs has been used in Iraq, the former Yugoslavia, and Afghanistan.

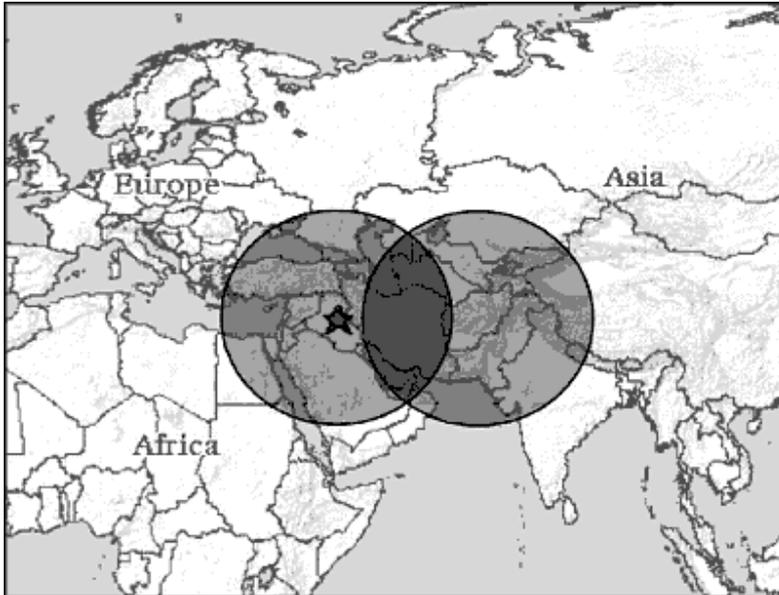


FIG. 14: Regions contaminated with low level radiation from DU weaponry used by US and UK forces in Iraq, former Yugoslavia, and Afghanistan equivalent to nearly 400,000 Nagasaki bombs.

800 tons of DU is equivalent to 83,000

Nagasaki bombs

Professor Katsuma YAGASAKI has calculated the total radioactive atomicity of the Nagasaki bomb and compared it to the radioactive atomicity of DU. He reported at the World Uranium Weapons Conference in Hamburg, Germany, Oct. 16-19 2003, that 800 tons of DU is the atomicity equivalent of 83,000 Nagasaki bombs.

The amount of DU used in Iraq in 1991 (340 tons), and 2003 (2200 tons) is equivalent in atomicity to nearly 285,000 Nagasaki bombs. The DU used in Afghanistan (1000 tons) is the atomicity equivalent to 100,000 Nagasaki bombs.

Dr. Chris Busby has calculated that 1900 tons of DU is equivalent to 60TetraBq of alpha and beta particulate activity⁹⁶.

What makes this calculation even more startling is that it is 10 times greater than the nuclear orgy of the Cold War:

*During this period, the volume of fission products released into the atmosphere was equivalent to the explosion of some 40,000 Hiroshima bombs, according to a thorough examination of seismic records conducted by the Natural Resources Defense Council. This terrifying figure was known to the leaders of the Soviet Union, who were responsible for two-thirds of the total yield (most of which occurred in 1961 and 1962), and to Presidents Eisenhower and Kennedy. Although the magnitude of this nuclear orgy was not publicized at the time, it led to the U.S.-Soviet agreement to ban atmospheric bomb tests in 1963, after which mortality rates resumed their annual, though somewhat diminished, improvement. . . .*⁶⁰

“Nuclear weapons testing will begin again in 2004 at the Nevada Test Site”, these are the words of Admiral Lyndon Brooks at the University of California Regents meeting in San Francisco, May 2003. Hearing those words made me wonder where the United States is headed. We are headed for new nuclear war, made very clear by my research on the relationship between depleted uranium and fourth generation nuclear weapons for the December 2003 International Criminal Tribunal for Afghanistan. Even more shocking was the discovery during my research that Japan

and Germany are tied for the number two place after the United States in research on fourth generation nuclear weapons development. After nearly 60 years, Admiral Brooks implied at that fateful meeting in May 2003, the University of California is about to lose its prestigious title as manager of the U.S. nuclear weapons labs. And the favored institution to take over the management is the University of Texas.

So how does that Texan in the White House think about radiation?

THE WHITE HOUSE OFFICIAL POSITION from “Apparatus of Lies”⁹⁷:

Depleted Uranium Scare

During the Gulf War, coalition forces used armor-piercing ammunition made from depleted uranium, which is ideal for the purpose because of its great density. In recent years, the Iraqi regime has made substantial efforts to promote the false claim that the depleted uranium rounds fired by coalition forces have caused cancers and birth defects in Iraq. Iraq has distributed horrifying pictures of children with birth defects and linked them to depleted uranium. The campaign has two major propaganda assets:

Uranium is a name that has frightening associations in the mind of the average person, which makes the lie relatively easy to sell; and Iraq

could take advantage of an established international network of antinuclear activists who had already launched their own campaign against depleted uranium.

But scientists working for the World Health Organization, the UN Environmental Program, and the European Union could find no health effects linked to exposure to depleted uranium.

REMEMBERING HIROSHIMA

Written a few days after Hiroshima, the anguished voice of Norman Cousins proposed the option of shackling science to save civilization, and that if a global authority was not established man's only alternative was to:

Destroy, carefully and completely, everything relating to science and civilization. Let him destroy all machines and the knowledge which can build or operate those machines. Let him raze his cities, smash his laboratories, dismantle his factories, tear down his universities and schools, burn his libraries, rip apart his art. Let him murder his scientists, his doctors, his teachers, his lawmakers, his mechanics, and anyone who has anything to do with the machinery of knowledge or progress. Let him punish literacy by death. Let him abolish nations and set up the tribe as sovereign. In short, let him revert to the condition in society in 10,000 B.C. This emancipated from science, from progress, from government, from knowledge, from thought, he can be reasonably certain of safeguarding his existence on this planet⁹⁸

THE TRIBE AS SOVEREIGN

Thank you Corbin Harney, for coming out "from behind the bush", pinning on your Indian jewelry and travelling around the world to stop underground nuclear weapons testing in 1992. We thank you, Corbin, and we love you.

"It's in our back yard... it's in our front yard. This nuclear contamination is shortening all life. We are going to have to unite as a people and say no more! We, the people, are going to have to put our thoughts together to save our planet here. We only have One Water...One Air...One Mother Earth."

Corbin Harney - Newe (Western Shoshone) Spiritual Leader Founder & Chairman of the Board of The Shundahai Network
Email: Shundahai@shundahai.org
<http://www.Shundahai>

References:

- 1 J. Emsley, *The Elements*, 3rd Edition, Oxford Univ. Press (1999), p.221.
- 2 European Committee on Radiation Risk, ECRR 2003 Recommendations of the European Committee on Radiation Risk, by European Committee on Radiation Risk, Regulator's Edition: Brussels 2003. <http://www.euradcom.org>
- 3 H.J. Muller, "Artificial Transmutation of the Gene", *Science* Vol. LXVI, No. 1699 July 22, 1927, pp.84-7.
- 4 D.E. Lea, *Actions of Radiation on Living Cells*, Cambridge University Press (1946); p.131.
- 5 Greene, G., *The Woman Who Knew Too Much – Alice Stewart and the Secrets of Radiation* Univ. of Michigan Press (1999).
- 6 Gofman, J., *Radiation from Medical Proceedings in the Pathogenesis of Cancer and Ischemic Heart Disease: Dose-Response Studies with Physicians per 100,000 Population*, C.N.R. Book Division (1999).
- 7 Hall, P. et al., "Effect of low doses of ionising radiation in infancy on cognitive function in adulthood: Swedish population based cohort study" *British Medical Journal* Vol. 328, No. 7430, January 3, 2004; pp.19-21.
- 8 Atomic Energy Commission Director of Health and Safety Merril Eisenbud, *Atomic Energy Commission (AEC), Minutes of Advisory Committee on Biology and Medicine*, AEC, New York, January 13-14, 1956, p. 232.
- 9 I. Fairlie, "Tritium, The Overlooked Nuclear Hazard", *The Ecologist* Vol. 22 (5) Sept./Oct. 1992, pp.228-232.
- 10 Personal communication with E.J. Sternglass regarding decline in fishing catch in N. Atlantic during bomb testing reported by Norwegian govt. correlates with Sr-90 levels measured in Norwegian milk at same time. Catch recovered as soon as 1963 Test Ban Treaty signed. Decline in fishing in Pacific declined with bomb testing but did not recover in 1963 because French and Chinese continued bomb testing.
- 11 L.J. leVann, "Congenital Abnormalities in Children Born in Alberta During 1961", *Can.Med. Assoc. J.*, 89: 120, 1963.
- 12 E. Sternglass, *Secret Fallout: Low-Level Radiation from Hiroshima to Three Mile Island*, McGraw-Hill, New York, 1972, 1981. [Read online - <http://www.ratical.com/radiation/SecretFallout/>]
- 13 UNSCEAR, *Sources and Effects of Ionizing Radiation*, United Nations Scientific Committee on the Effects of Atomic Radiation, New York, 1977; NEA, op. cit. 1.
- 14 K. Jawarowski, "Natural and Man-Made Radionuclides in the Global Atmosphere", *IAEA Bulletin* 24 (2) pp.35-38.
- 15 R. Grismore, A.Z. Rosen, R.A. Llewellyn, and J.S. Taylor, "Uranium decay products found on Mir space blanket mitt", *Jour Envir Radioactivity*, Vol. 53 (2) (2001) pp. 231-239.
- 16 World Health Organization Press Release: "Global cancer rates could increase by 50% to 15 million by 2020" April 3, 2003, Geneva. http://www.who.int/mediacentre/releases/2003/pr27/en/print_html
- 17 Fig. 1: R. L. Miller *Under The Cloud: The Decades of Nuclear Testing*, NY: The Free Press (1991).
- 18 D.V.Conn "U.S. Counts one in 12 children disabled" *Washington Post* 7/6/02.
- 19 P. Montague, "Barry Commoner: father of environmentalism", *RACHEL'S ENVIRONMENT & HEALTH WEEKLY*, August 1997. <http://lists.econ.utah.edu/pipermail/marxism-thaxis/1997-August/003619.html>
- 20 H.L.Rosenthal, "Accumulation of Environmental Sr-90 in Teeth of Children", *Hanford Radiobiology Symposium Proceedings* (1969) p. 163-171.

- 21 H.L. Rosenthal, J.T.Bird, J.E.Gilster, "Strontium-90 Content of First Bicuspid", NATURE April 9, 1966, Vol.210 No. 5032 pp210-212.
- 22 H.L.Rosenthal, S. Austin, S.O'Neill, K. Takeuchi, J.T.Bird, J.Gilster, "Incorporation of Fall-Out Strontium-90 in Deciduous Incisors and Foetal Bone", NATURE Aug. 8, 1964, Vol. 203 No.4945 pp. 615-616.
- 23 Fig. 2: United States Infant Mortality Rate 1935-1996; from E. Stern-glass personal communication.
- 24 E.J. Sternglass, Secret Fallout: Low Level Radiation from Hiroshima to Three Mile Island, New York: McGraw-Hill, 1981.
- 25 E.J. Sternglass, Chapter 15 "Radioactivity", Environmental Chemistry Ed. J.Bockris, Plenum Press NY, 1977.
- 26 B. Curry, "A-Test Officials Feared Outcry after Health Study.", The Washington Post, April 14, 1979.
- 27 Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes To Their Environmental Consequences, U.S. Dept. of Energy Office of Environmental Management, DOE/EM-0319, January 1997. <http://legacystory.apps.em.doe.gov/>
- 28 Estimating The Cold War Mortgage- The 1995 Baseline Environmental Management Report Executive Summary March 1995, U.S. Dept. of Energy Office of Environmental Management, DOE/EM-0232, March 1995. <http://web.em.doe.gov/bemr/>
- 29 R. Graeb, The Petkau Effect: Nuclear Radiation, People and Trees Four Wall Eight Windows (1992) p. 135. ISBN: 0941423727
- 30 Personal communication with former Manhattan Project scientist Marion Fulk, Livermore, CA, Feb. 1, 2004.
- 31 Professor K. Yagasaki, "Depleted Uranium Shells, The Radioactive Weapons" presented at the WORLD DEPLETED URANIUM WEAPONS CONFERENCE, Hamburg, Germany, Oct. 16-19, 2003. <http://www.uraniumweaponsconference.de>
- 32 Fig. 3: Interaction of Ionizing Radiation, ECRR2 Fig. 6.1, p. 36.
- 33 E.J.Sternglass, S. Bell, "Fallout and SAT Scores: Evidence for Cognitive Damage During Early Infancy", Phi Delta Kappan, April 1983, pp.539-545.
- 34 J. Mangano, Low-Level Radiation and Immune System Damage – An Atomic Era Legacy, Lewis Pubs.NY, CRC Press LLC 1999.
- 35 A.Gardner, "One in Three Americans Will Get Diabetes", Health Day News Oct. 8, 2003.
- 36 R.Pellegrini, "Nuclear Fallout and Criminal Violence: Preliminary Inquiry Into a New, Biogenic Predisposition Hypothesis", International Journal of Biosocial Research Vol. 9(2):125-143, 1987.
- 37 R.J.Davidson, K.M.Putnam, C.L.Larson, "Dysfunction in the Neural Circuitry of Emotion Regulation – A Possible Prelude to Violence", SCIENCE V.289 July 28, 2000, pp. 591-594.
- 38 L. Moret, " 'Shock and Awe' The Pentagon's Fiery Crucibles of War", UNOBSERVER March 10, 2003. <http://www.mindfully.org/Nucs/2003/Shock-And-Awe-Moret10mar03.htm>
- 39 D. Harman, "Aging: "A Theory Based on Free Radical and Radiation Chemistry." J. Gerontol., Jul. 1956, 11(3): 298-300, 1956.
- 40 J. Gould, The Enemy Within: The High Cost of Living Near Nuclear Reactors – Breast Cancer, AIDS, Low Birthweights, and Other Radiation Induced Immune Deficiency Effects, Four Walls Eight Windows 1996.
- 41 J. Gould, B.A. Goldman, Deadly Deceit: Low Level Radiation, High Level Coverup, Four Walls Eight Windows NY: 1990.
- 42 C. Busby, Wings of Death – Nuclear Pollution and Human Health, Green Audit Books, Aberystwyth (1995).
- 43 N.Singer, "Sandia nanolaser may help extend life-spans by rapidly analyzing possible neuroprotectant drugs", SandiaLabNews Vol. 55, No. 19, September 19, 2003. http://www.sandia.gov/LabNews/LN09-19-03/key09-19-03_stories.html#nano
- 44 L. Moret, "Guided Missiles and Misguided Men", San Francisco BayView Jan. 23, 2002, p.1.
- 45 R. Bertell, No Immediate Danger – Prognosis for a Radioactive Earth, The Book Publishing Company, Tennessee (1985).
- 46 J. Mangano, "An unexpected rise in Strontium-90 in U.S. deciduous teeth in the 1990s", The Science of The Total Environment Vol. 317 (1-3), December 30, 2003, pp. 37-51. <http://www.radiation.org/>
- 47 Letter from Dr. Ernest Sternglass to Lauren Moret August 23, 2001, Subject: Radiation and Dust Particles. <http://www.mindfully.org/Nucs/Radiation-Dust-Particles23aug01.htm>
- 48 J. Sherman, Life's Delicate Balance: Causes and Prevention of Breast Cancer, Taylor and Francis, NY, 2000.
- 49 Radiation and Public Health Project, "Environmental Radiation from Nuclear Reactors Effects on Children's Health from Startups and Shutdowns", Press Conference April 20, 2001.
- 50 J. Mangano, "Improvements in local infant health after nuclear power reactor closing", Environ. Epid. & Toxic. (2000) 2 (1-4).
- 51 Radiation and Public Health Project, "Environmental Radiation from Nuclear Reactors and Childhood Cancer in Southeast Florida", in publication (2003). <http://www.radiation.org/florida.html>
- 52 J. Gould, "Explanation of Black Infant Mortality Rates", The Black World Today <http://www.tbwt.org/home/> http://www.tbwt.com/views/specialrpt/special%20report-2_11-14-00.asp
- 53 J. Gould, "Infant Mortality and Milk", Deadly Deceit: Low Level Radiation High Level Coverup, Four Walls Eight Windows, 1990, pp.111-126.
- 54 A.B. Wolbarst et. al., "Sites in the US contaminated with radioactivity", Health Physics, Sept. 1999, v.77 (3) p.255 [data from NRC].
- 55 Personal communication Roger Herriod, Abalone Alliance, San Francisco, 2000.
- 56 Closing the Circle on the Splitting of the Atom, U.S. Dept. of Energy Office of Environmental Management DOE/EM-0266, January 1996. [Chart p. 38] <http://legacystory.apps.em.doe.gov/text/close/closetoc.htm>
- 57 Manhattan Project scientist and nuclear weapons program expert on rainout of radioactive testing materials, Livermore Nuclear Weapons Lab. Personal communication 2000-2004.
- 58 C.L. Sanders, Carcinogenicity of Inhaled Plutonium-238 in the Rat." Radiation Res. 56: 540, 1973.
- 59 T. Stokke, P. Oftedal, A. Pappas, "Effects of Small Doses of Radioactive Strontium on the Rat Bone Marrow", Acta Radiologica, 7: 321, 1968.
- 60 Dave Ratcliff, "OVERVIEW: Deadly Deceit, Low-Level Radiation, High-Level Coverup", Dec. 2, 1992. <http://www.ratical.org/radiation/inetSeries/DDoverV.html>
- 61 Brian Jacobs, "The politics of radiation: when public health and the nuclear industry collide." Greenpeace, July-August, 1988, p. 7.
- 62 E. Welsome, The Plutonium Files – America's Secret Medical Experiments in the Cold War, The Dial Press NY (1999).
- 63 B. Halliwell, J.M.C. Gutteridge, Free Radicals in Biology and Medicine 3rd Edit., Oxford Univ. Press (2001).
- 64 Personal communication Dr. Jay Gould.
- 65 List of donations to members of Congress from the nuclear industry: Taxpayers for Common Sense: <http://www.taxpayer.net/energy/nuclear/nuclearcommittee.htm> Public Citizen: <http://www.commondreams.org/news2002/0513-03.htm>
- 66 G. Brechin, Imperial San Francisco-Urban Power, Earthly Ruin, Univ. of Calif. Press (1999).

- 67 "Letter from Leuren Moret to Congressman McDermott with Declassified memo to Gen. L.R. Groves 1943 – a blueprint for DU", 21feb03. <http://www.mindfully.org/Nucs/2003/Leuren-Moret-Gen-Groves21feb03.htm>
- Copy of original Memo: <http://www.mindfully.org/Nucs/Groves-Memo-Manhattan30oct43a.htm>
- 68 J. G. Hershberg, James B. Conant – Harvard to Hiroshima and the Making of the Nuclear Age, Stanford Univ. Press (1993).
- 69 Quote from Kiss the Boys Goodbye: How the United States Betrayed Its Own POWs in Vietnam by Stevenson & Stevenson, p97 (Futura 1990).
- 70 Major Doug Rokke PhD, Director of the Gulf War DU Cleanup Project for the U.S. Army. Major Rokke has been interviewed widely in the U.S. and international media, written many articles and appeared in documentary films about his firsthand experience with DU. He has helped many veterans and continues to advocate for medical care, cleanup of DU, and training for soldiers.
- 71 "Mal de Guerre" by Laura Flanders, The Nation March 7 1994.
- 72 Discounted Casualties: The Human Cost of Depleted Uranium by A. TASHIRO, Chugoku Shimbun 2001. http://www.chugoku-np.co.jp/abom/uran/index_e.html
- 73 "Gulf War Illness Symptoms & Illnesses" DESERT SHIELD/DESERT STORM Website (see articles on brain damage and malfunction on this website) <http://www.ushostnet.com/gulfwar/articles.htm>
- 74 "Radiation risk to low fluences of ? particles may be greater than we thought" by H. Zhou, M. Suzuki, G. Raners-Pehrson, D. Vannais, G. Chen, J. Trosko, C. Waldren, T. Hei in Proceedings National Academy Sciences Dec. 4 2001, Vol. 98 No. 25, pp.14410-14415.
- 75 "Ft. Bragg suspect said to be dilusional" by M. Benjamin and D. Olmsted UPI 8/31/02
<http://www.upi.com/print.cfm?StoryID=20020831-070355-9742r>
- 76 "Chromosome Aberration Analysis in Peripheral Lymphocytes of Gulf War and Balkans War Veterans" by H. Schroder, A. Heimers, R. Frentzel-Beyme, A. Schott, and W. Hoffman in Radiation Protection Dosimetry Vol. 103, No. 3, pp. 211-219 (2003).
- 77 "Observation of Radiation-specific Damage in Human Cells Exposed to Depleted Uranium: Dicentric Frequency and Neoplastic Transformation as Endpoints" by A.C. Miller, J. Xu, M. Stewart, K. Brooks, S. Hodge, L. Shi, M. Page and D. McClain, Radiation Protection Dosimetry Vol. 99 No. 1-4, P. 275 (2002).
<http://www.ntp.org.uk/rpda87/rpda2002991-4275.html>
- 78 G.E.Watson, D.A.Pocock, D. Papworth, S.A.Lorimore, E.G.Wright "In vivo chromosomal instability and transmissible aberrations in the progeny of haemopoietic stem cells induced by high- and low- LET radiations" Int. J. Radiat. Biol. 2001, Vol.77 (4), 409-417.
- 79 "Radiation risk to low fluences of ? particles may be greater than we thought" by H. Zhou, M. Suzuki, G. Raners-Pehrson, D. Vannais, G. Chen, J. Trosko, C. Waldren, T. Hei in Proceedings National Academy Sciences Dec. 4 2001, Vol. 98 No. 25, pp.14410-14415.
- 80 L. Moret, "Shock and Awe: The Pentagon's Fiery Crucibles of War", March 10, 2003.
<http://www.mindfully.org/Nucs/2003/Shock-And-Awe-Moret10mar03.htm>
- 81 Personal communication January 13, 2003.
- 82 Thomas M. Fasy, MD, PhD - The recent epidemic of pediatric malignancies and congenital malformations in southern Iraq; the biological plausibility of depleted uranium as a carcinogen and a teratogen. Dr. Fasy is an Associate Professor of Pathology at the Mount Sinai School of Medicine. He traveled to Iraq last January and met with Dr. Alim Yacoub, the Iraqi epidemiologist who has documented the increase in childhood cancers and birth defects in southern Iraq.
- 83 Dr. Al-Ali
http://www.chugoku-np.co.jp/abom/uran/iraq5_e/000620.html
- 84 Dr. Genen Hassan: <http://www.benjaminforiraq.org/contaminazione/Further%20Evidence%20on%20Relation%20between%20Depleted%20Uranium.htm>
- 85 A Different Nuclear War: Children of the Gulf War by Takashi MORI-ZUMI (2002) Hiroshima.
<http://www.savewarchildren.org>
- 86 Dr. Souad Al-Azawi Biography: http://www.uraniumweaponsconference.de/speakers/azzawi_bio_en.pdf
- Environmental Pollution Resulting From the Use of Depleted Uranium Weaponry Against Iraq During 1991
by S. Al-Azzawi, B. Ma'aruf, M. Abdul-Rahman, M. Al-Saji, W. Rasheed, A. Mugwar, manuscript Nov. 2003.
- 87 "Estimating the Concentration of Uranium in Some Environmental Samples in Kuwait After the 1991 Gulf War" by F. Bou-Rabee, Appl.Radiat.Isot.I Vol.46 No.4, pp.217-220,1995.
- 88 Personal communication with Dr. Hari Sharma: email March 28, 2002.
- 89 See "Question 4" - Testimony December 13, 2003, ICTA Final Tribunal, Tokyo, Japan
<http://www.mindfully.org/Nucs/2003/Leuren-Moret-ICT13deco3.htm>
- 90 Comparison of Effects on Animals and Environment From Ionizing Radiation From Above-Ground Weapons Testing in Algeria With DU Use in Iraq by A. Alaboudi, manuscript October 2003.
- 91 Low-level DU contamination found in Bosnia and Herzegovina, UNEP calls for precaution, UNEP News Release - 2003/17 March.
- 92 Professor Marc Herold: <http://pubpages.unh.edu/~mwherold/page1.htm>
- 93 Uranium Medical Research Center: <http://www.umrc.net/>
- 94 Invisible War: Depleted Uranium and the Politics of Radiation by Martin Meissonier (2000) France.
- 95 Presentation by Dr. K. YAGASAKI: World Uranium Weapons Conference Hamburg, Germany, Oct. 16-19 2003. <http://www.uraniumweaponsconference.de>
- 96 "If you think Cancer is a problem now, wait until more depleted uranium is released into the world." Busby, Sherman, Moret May 2003, Toronto Peace Center website: <http://www.torontoforpeace.org/uranium-risks.html>
- 97 "The Apparatus of Lies": <http://www.whitehouse.gov/ogc/apparatus/suffering.html#3>
- 98 N. Cousins, "Modern Man is Obsolete", Saturday Review of Literature, Aug. 18, 1945, p. 9.

International Criminal Tribunal for Afghanistan

QUESTION 11. WHAT DOES THE U.S. GOVT. KNOW ABOUT DU?

by Leurent Moret, November 25, 2003

11. The US government flatly denies risk of DU officially. World Health Organization published a similar report recently. Please tell us what you think the US government really knows.

1943 – MANHATTAN PROJECT: Memo to General Leslie R. Groves October 30, 1943 - Blueprint for Depleted Uranium weapons

Recommendation from Manhattan Project physicists (Compton, Urey, Connant) to develop radioactive battlefield weapons "which would behave like a radioactive gas" using nuclear trash from the atomic bomb program in order to beat the Germans who might do it first. Depleted uranium was specifically mentioned in other communications.

<http://www.mindfully.org/Nucs/Groves-Memo-Manhattan30oct43.htm>

Source of document: Major Doug Rokke, U.S. Army Head of Depleted Uranium Project to clean up Iraq and Kuwait after 1991 Gulf War.

1946 – OPEN LITERATURE

ACTIONS OF RADIATIONS ON LIVING CELLS by D.E. Lea, Cambridge University Press (1946) (includes early research beginning in 1927 by H.J. Muller on genetic mutations in *Drosophila* from ionizing radiation); through collaboration with the Radiological Society of North America, the Rockefeller Institute for Medical Research, and the Royal Society.

1950 – U.S. ARMY Pamphlet: THE EFFECTS OF ATOMIC WEAPONS

9.40 "...The uranium and plutonium which may have escaped fission in the nuclear weapon represent a further possible source of residual nuclear radiation...."

9.41 "The alpha particles from uranium and plutonium... are completely absorbed in an inch or two of air.... indicates that uranium and plutonium deposited on the earth do not represent a serious external hazard."

9.42 "Although there is negligible danger from uranium and plutonium outside the body, it is possible for dangerous amounts of these elements to enter the body through the lungs, the digestive system, or breaks in the skin. Plutonium, for example, tends to concentrate in bone and lungs, where the prolonged action of the alpha particles can cause serious harm."

THE EFFECTS OF ATOMIC WEAPONS (1950), U.S. Army republished 1957, 1962, 1964 as THE EFFECTS OF NUCLEAR WEAPONS, Dept. of the Army Pamphlet No. 50-3, Headquarters, Dept. of the Army (March 1977).

1974-99 – U.S. MILITARY: Research Report Summaries on Depleted Uranium

Major research on military use of depleted uranium, 1974-1999, Office of the Special Assistant for Gulf War Illnesses – "GulfLINK" http://www.gulfink.osd.mil/du_ii/du_ii_tab1.htm These summaries represent extensive research to test and characterize depleted uranium as a military weapon. The summaries confirm everything that was known in 1943 in the Groves Memo.

1976 - U.S. AIR FORCE: "INTERNATIONAL LAW -- THE CONDUCT OF ARMED CONFLICT AND AIR OPERATIONS" - November 19, 1976 Judge Advocate General Activities Air Force Pamphlet AFP 110-31

The U.S. Department of the Air Force manual, "International Law: The conduct of Armed Conflict and Air Operations," AFP 110-31, November 19, 1976 (hereinafter "USAF manual"), governs the actions of all U.S. Air Force pilots including operators of the A-10 Thunderbolts. This Air Force manual acknowledges that the Department of the Air Force must adhere to international and U.S. military law regarding bombardment and air operations.

"It is especially important that treaties, having the force of law equal to laws enacted by the Congress of the United States, be scrupulously adhered to by the United States armed forces." This is the legal policy of the U.S. Department of Defense. (USAF manual, p. 1-7)

Article VI of the Constitution of the United States says: "...all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, anything in the Constitution or the laws of any State to the contrary notwithstanding."

"The following are relevant examples of treaties to which the U.S. is a party: Hague Conventions IV of October 18, 1907 (USAF manual, p. 1-7); Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare of 1925 [the Geneva Gas Protocol, June 17, 1925] (USAF manual, p. 1-7); Geneva Convention Relative to the Protection of Civilians in Time of War, August 12, 1949." (USAF manual, p. 1-8)

Even without a formal declaration of war, the United States Department of Defense is legally obligated under the U.S. Constitution to obey the laws of war. "The law of armed conflict applies to an international armed conflict regardless of whether a declared 'war' exists." (USAF manual, p. 1-10) "The Armed Forces of the United States will comply with the law of war in the conduct of military operations and related activities in armed conflict however such conflicts are characterized." (USAF manual, p. 1-8)

Although uranium weapons are not banned by name in an existent treaty, they are illegal under binding Air Force law and international conventions. "Any weapon may be put to an unlawful use." (USAF manual, p. 6-1) "A weapon may be illegal per se if either international custom or treaty has forbidden its use under all circumstances. An example is poison to kill or injure a person." (USAF manual, p. 6-1) The International Court of Justice recognizes this rule in its Advisory Opinion, "Legality of the Threat or Use of Nuclear Weapons" (International Court of Justice Reports, 1996). In paragraph 87 of that Opinion, the Court found that the principles and rules of humanitarian law apply to all weapons, including nuclear ones. In other parts of the Opinion the Court stresses the duty to evaluate legality or illegality prior to use in military operations.

The Geneva Gas Protocol prohibits, "the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices." (USAF manual, p.6-3, 6-4) The Geneva Conventions now include the four Geneva Conventions of 1949, their Protocol Additional I, and Protocol Additional II. [The two protocols strongly set out prohibitions of military operations that would unleash hazardous forces (such as an attack on a nuclear power facility or a dam) or would damage the natural environment or water supply.]

The 1907 Hague Convention IV, at Section II, Article 23, absolutely forbids any use of poison. It states: "In addition to the prohibitions provided by special Conventions, it is especially forbidden * a) To employ poison or poisoned weapons; b) To kill or wound treacherously individuals belonging to the

hostile nation army; e) To employ arms, projectiles, or material calculated to cause unnecessary suffering." (USAF manual, p.5-1)

Poison is defined in the Air Force manual in a way that clearly describes uranium munitions: "Poisons are biological or chemical substances causing death or disability with permanent effects when, in even small quantities, they are ingested, enter the lungs or bloodstream, or through the skin. The longstanding customary prohibition against poison is based on their uncontrolled character and the inevitability of death or permanent disability as well as on a traditional belief that it is treacherous to use poison." (USAF manual, p. 6-5) U.S. Air Force Pamphlet [Manual] AFP 110-31

"U.S. Air Force and International Law Forbid the Use of Uranium Weapons" by Karen Parker, J.D., Diplome (Strasbourg) and Piotr Bein, PhD. Source: John La-Forge, Nukewatch - <http://www.nukewatch.com/>

1978 - 95th CONGRESS AND U.S. PRESIDENT
- Speech by Senator Bob Dole

Making Bullets Out of Depleted Uranium - Mr. Dole: "Mr. President, an article appeared in the Washington Star on March 14 [1978], reporting that the Pentagon is about to start using depleted-uranium to produce bullets. They seem to have chosen this material for bullets because uranium metal is dense, and because depleted uranium is cheap. Needless to say, I find this proposal shocking. On the one hand this shows a complete lack of sensitivity to the general fear of using radioactive materials. On the other hand, only a strange set of policy decisions could have made this material so cheap that anybody would consider using it for bullets." Opening paragraph of 140-line long statement by Senator Bob Dole at the 95th Congress, 2nd Session, Vol. 124 (part 29) March 17, 1978, page 7416.

1979 - U.S. ARMY: Mobility Equipment, Research & Development Command

The U.S. Army Mobility Equipment, Research & Development Command, March 7, 1979, states: "Not only the people in the immediate vicinity (emergency and fire fighting personnel) but also people at distances downwind from the fire are faced with potential over exposure to air borne uranium dust."

1984 – U.S. DEPARTMENT OF ENERGY - Testing Problems from DU Contamination

“Prototype Firing Range Air Cleaning System” by J.A. Glismeyer, J. Mishima and J.A. Bamberger, Pacific Northwest Laboratory, Richland, Washington, Proceedings of the 18th DOE Nuclear Airborne Waste Management and Air Cleaning Conference, Baltimore, Maryland, August 12-16, 1984. Published March 1985, Editor M.W. First, U.S. Dept. of Energy and The Harvard Air Cleaning Laboratory; CONF-840806 Vol. 2.

“The Ballistics Research Laboratory, a component of the U.S. Army Research and Development Command, contracted with Pacific Northwest Laboratory (PNL) to provide a prototype air cleaning system for a new large caliber firing range where depleted uranium munitions are testfired. ...too costly to operate... rapid particle loading results in short filter life necessitating frequent replacement and disposal as low-level radioactive waste. The rapid particle loading also results in decreased airflow causing an excessive waiting period before personnel can reenter the target area.”

“The U.S. Army Material Test Directorate (MTD) and the Ballistics Research Laboratory (BRL) both operate two firing ranges (Ranges A, B, and C, D respectively) for the testing of large caliber depleted uranium (DU) penetrators. The targets are housed in enclosures which contain DU aerosols and fragments produced by the test firings. One of the drawbacks of using a target enclosure is that the airborne DU must be removed by ventilation and air cleaning before personnel can enter the enclosure without respiratory protection.”

1989 - U.S. NAVY - Changes from Depleted Uranium to Tungsten Alloys

“The interesting aspect in the history of this application is that after deciding in 1978 to use a uranium alloy, the U.S. Navy decided in 1989 to change to tungsten alloys, ‘based on live fire tests showing that tungsten met their performance requirements while offering reduced probabilities of radiation exposure and environmental impact.’” B.Rostker, Development of DU Munitions, in Environmental Exposure Report, Depleted Uranium in the Gulf (II), (2000). http://www.gulflink.osd.mil/du_ii/du_ii_table.htm

1990 - Office of the ASSISTANT SECRETARY OF DEFENSE, A. H. Passarella, Dir. Freedom of Information and Security Review, February 11, 1990 letter to Mr. Dan Fahey

“Depleted uranium (DU) material can constitute a heavy metal poisoning and radiation poisoning hazard in the pulverized (powder) state only if it is either ingested or inhaled.” Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, 2nd Edition, July 2, 1998, National Gulf War Resource Center, pp. 197-198.

1990 – SAIC: Government Contractor

“Short-term effects of high doses can result in death, while long-term effects of low doses have been implicated in cancer.”

“Aerosol DU exposures to soldiers on the battlefield could be significant with potential radiological and toxicological effects.” From the Science Applications International Corporation (SAIC) report, included as Appendix D of AMMCOM’s Kinetic Energy Penetrator Long Term Strategic Study, Danesi, July 1990. This report was completed six months before Desert Storm.

1990 - U.S. ARMY - Armament, Munitions and Chemical Command [AMCCOM]

“...reported in July 1990, that depleted uranium is a “low level alpha radiation emitter which is linked to cancer when exposures are internal, [and] chemical toxicity causing kidney damage.” (AMCCOM’s radiological task group has said that “long term effects of low doses [of DU] have been implicated in cancer...there is no dose so low that the probability of effect is zero.” Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, 2nd Edition, July 2, 1998, National Gulf War Resource Center, Inc., p. i)

1991 – LOS ALAMOS MEMO - Los Alamos Nuclear Weapons Laboratory

SUBJECT: The Effectiveness of Depleted Uranium Penetrators March 1, 1991 From: Lt. Col. M.V. Ziehm To: Major Larson “Studies and Analysis Branch” (WR 13)

“There is a relatively small amount of lethality data for uranium penetrators, either the tank fired long version or the GAU-8 round fired from the A-10 close air support aircraft. The recent war has likely multiplied the number of du rounds fired at targets by orders of magnitude. It is believed that du penetrators were very effective against Iraqi armor; however, assessments of such will have to be made.

There has been and continues to be a concern regarding the impact of du on the environment. Therefore, if no one makes a case for the effectiveness

of du on the battlefield, du rounds may become politically unacceptable and thus, be deleted from the arsenal.

If du penetrators proved their worth during our recent combat activities, then we should assure their future existence (until something better is developed) through Service/DoD proponency. If proponency is garnered, it is possible that we stand to lose a valuable combat capability.

I believe we should keep this sensitive issue at mind when after action reports are written." Los Alamos National Laboratory Memorandum March 1, 1991 Source of this document: Major Doug Rokke, Head of Depleted Uranium Cleanup Project for Iraq and Kuwait after the Gulf War 1991.

1992 – UNITED STATES CENTRAL COMMAND log - following a major fire at adepleted uranium ammunition storage facility in Doha

"EOD POC (point of contact) states that burning depleted uranium puts off alpha radiation. Uranium particles when breathed can be hazardous. 11ACR has been notified to treat the area as though it were a chemical hazard area; i.e. stay upwind and wear protective mask in the vicinity." United States Central Command log, "11ACR Fire in Doha: Updates from CENTCOM Forward," July 12, 1991, entry 10.

1993 – U.S. GENERAL ACCOUNTING OFFICE (GAO)

"Inhaled insoluble oxides stay in the lungs longer and pose a potential cancer risk due to radiation. Ingested DU dust can also pose both a radioactive and a toxicity risk." Operation Desert Storm: Army Not Adequately Prepared to Deal With Depleted Uranium Contamination, United States General Accounting Office (GAO/NSIAD-93-90), January 1993, pp. 17-18.

1993 – U.S. ARMY ARMAMENT, MUNITIONS, AND CHEMICAL COMMAND (AMCCOM)

"When a DU penetrator impacts a target surface, a large portion of the kinetic energy is dissipated as heat. The heat of the impact causes the DU to oxidize or burn momentarily. This results in smoke which contains high concentration of DU particles. These uranium particles can be ingested or inhaled and are toxic." U.S. ARMY ARMAMENT, MUNITIONS, AND CHEMICAL COMMAND (AMCCOM) "Depleted Uranium Facts," photocopy in Bukowski, et. al, Uranium Battlefields Home and Abroad, March 1993, p. 97.

1993 – U.S. ARMY: Colonel Robert G. Claypool, Medical Corps Director, Professional Services of the Department of the Army, Office of the Surgeon General, August 16, 1993 letter to U.S. Army Chemical School

"When soldiers inhale or ingest DU dust, they incur a potential increase in cancer risk. The magnitude of that increase can be quantified (in terms of projected days of life lost) if the DU intake is known (or can be estimated). Expected physiological effects from exposure to DU dust include possible increased risk of cancer (lung or bone) and kidney damage." Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, 2nd Edition, July 2, 1998, National Gulf War Resource Center, pp. 263-264).

1993 – U.S. ARMY: Office of the Deputy Chief of Staff For Operations and Plans, Washington D.C. August 19, 1993: Memorandum Thru Deputy Chief of Staff for Operations and Plans – Director Army Staff – for Assistant Secretary of the Army (Installation Logistics & Environment) Subject: Review of Draft Report to Congress – Health and Environmental Consequences of Depleted Uranium in the U.S. Army – ACTION MEMORANDUM

[This was a response to a GAO report to Congress on DU issues]

c. "In response to the GAO report, the Deputy Secretary of Defense (DEPSECDEF) issued a tasking memorandum on 8 June 1993. The memorandum directs the Secretary of the Army to:

- (1) Provide adequate training for personnel who may come in contact with DU contaminated equipment.
- (2) Complete medical testing of personnel exposed to DU contamination during the Persian Gulf War.
- (3) Develop a plan for DU contaminated equipment recovery during future operations." Signed - Brigadier General Eric K. Shinseki [The rest of the memorandum is in regard to implementation of this order.]

[General Shinseki served four years as the Army Chief of Staff and retired in June 2003 after two years of tension between him and Donald Rumsfeld over resources needed for the Iraq war.]

Source of document: Major Doug Rokke, U.S. Army Head of Depleted Uranium Project to clean up Iraq and Kuwait after 1991 Gulf War.

1993 - U.S. ARMY: Operations Support Directorate
– UNCLASSIFIED SECTION
Subject: Medical Management Of Unusual Depleted Uranium Exposures
October 2, 1993

4. "Unusual exposures to DU are also expected to cause no medical problems. But in the interest of documenting the expected minimal exposures, the exposures should be documented and specimens taken. Unusual exposures include situations which could result in ingestion/inhalation of DU dust; or the contamination of wounds by DU dust or fragments. These unusual exposures could result from:
- A. Being in the midst of the smoke from DU fires resulting from the burning of vehicles uploaded with DU munitions or depots in which DU munitions are being stored.
 - B. Working within environments containing DU dust or residues from DU fires.
 - C. Being within a structure or vehicle while it is struck by a DU munition.
5. Safety guidance on appropriate soldier response to accidents involving DU is contained within reference A. and guidance on appropriate management of potentially DU-contaminated equipment is contained within reference B.
6. In cases such as those in described in Paragraph 4, the following steps should be taken:
- A. A MED-16 report (RCS MED-15(R4)) should be submitted in accordance with Paragraph 5-10 of Reference B.
 - B. Specimens should be collected and forwarded for analysis in conformance with the information provided in subsequent paragraphs and paragraph 9-6 of Reference A.
 - (1) Nasal swipes could be collected... Nasal swipes can be useful if confirming exposure to DU dust environments...
 - (2) Any filters used for respiratory protection (Protective mask canister, dust masks, field-expedient cloths placed over the nose etc.) should be sealed in plastic bags or other protective containers...
 - (3) Twenty-four hour urine specimens should be collected..."Source of document: Major Doug Rokke, U.S. Army Head of Depleted Uranium Project to clean up Iraq and Kuwait after 1991 Gulf War.

1995 – U.S. ARMY - Environmental Policy Institute (AEPI) Report to Congress

"If DU enters the body, it has the potential to generate 'significant medical consequences'. The risks associated with DU in the body are both chemical and radiological. "

"The radiation dose to critical organs depends upon the amount of time that depleted uranium resides in the organs. When this value is known or estimated, cancer and hereditary risk estimates can be determined"

"Personnel inside or near vehicles struck by DU penetrators could receive significant internal exposures."

"Very few remediation technologies have actually been used to clean up DU-contaminated sites."

"No available technology can significantly change the inherent chemical and radiological toxicity of DU. These are intrinsic properties of uranium."

"The Army should determine the full life-cycle cost of DU weapon systems. This analysis must take into account not only production costs, but also demilitarization, disposal and recycling costs; facility decontamination costs; test range remediation costs; and long-term health and environmental costs."

"The only systematic DU contamination of Army land occurs during the research, development, testing, and evaluation (RDT&E) cycle for DU ammunition."

"The Army needs to review particle data from Army studies and elsewhere to determine data gaps and conduct experiments to generate the requisite data to fill these gaps."

"The Army needs to develop a better understanding of DU particles generated from impacts or burning."

"The Army should be prepared to provide guidance to other governments on the health and safety risks associated with DU for affected battlefields. This guidance may include information on environmental measurement, monitoring, migration and remediation techniques."

From the Army Environmental Policy Institute (AEPI), Health and Environmental Consequences of Depleted Uranium Use in the U.S. Army, June 1995

1997 - ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE (AFRRI)

Armed Forces Radiobiology Research Institute (AFRRI) in Bethesda, Maryland has discovered in animal studies that embedded DU, unlike most metals, dissolves and spreads through the body depositing in organs like the spleen and the brain, and that a

pregnant female rat will pass DU along to a developing fetus. The Nation magazine, May 26, 1997, p. 17-18.

1998 - UNITED STATES NUCLEAR REGULATORY COMMISSION (NRC)

According to the United States Nuclear Regulatory Commission guidelines for occupational exposure, the 186,000,000 grams of depleted uranium released during the Gulf War combat operations is enough to poison every American man, woman, and child 100 times. Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, 2nd Edition, July 2, 1998, National Gulf War Resource Center, p. 3.

1998 - U.S. DEPARTMENT OF LABOR/OSHA Health Hazards Data, the Materials Safety Data Sheet from the U.S. Department of Labor/OSHA, says this about depleted uranium: "Increased risk of lung carcinoma and chemical toxicity to kidney. Hazardous decomposition products..." Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, 2nd Edition, July 2, 1998, National Gulf War Resource Center, Inc.

2000 - UNITED STATES DEPARTMENT OF ENERGY (DOE)

The United States Department of Energy (DOE) has said, "One may normally expect that depleted uranium contains a trace amount of plutonium." In a January 20, 2000 letter, DOE Assistant Secretary David Michaels formally admits that, "As background, I would note that our historical information shows that recycled uranium, which came straight from one of our production sites, e.g., Hanford, would routinely contain transuranics [americium, neptunium, plutonium] at a very low level. ... We have initiated a project to characterize the level of transuranics [americium, neptunium, plutonium] in the various depleted uranium inventories." David Michaels, PhD, MPH, Assistant Secretary Environment, Safety and Health, U.S. Department of Energy, letter, Jan. 20, 2000.)

2003 - MEDIA: PENTAGON CONTROLLING THE NEWS - John Hanchette Former Editor U.S.A. TODAY (National Daily Newspaper)

During a speaking tour in the Eastern United States in January 2003 with Gulf War Veteran Major Doug Rokke, I was introduced to John Hanchette who in Doug's words is "one of the good guys on the depleted uranium issue". Mr. Hanchette told me

that from 1991 to 2001, as Editor of U.S.A. TODAY, he published news breaking stories on the effects of depleted uranium on Gulf War Veterans. Each time he was ready to publish a story about devastating illnesses in Gulf War soldiers, he got a phone call from the Pentagon pressuring him not to print the story. He has been replaced as Editor at U.S.A. TODAY and is now teaching journalism to college students. Interview with former U.S.A. TODAY Editor John Hanchette by Leuren Moret, Olean, New York, January 29, 2003.

2003 - PENTAGON - U.S. Army Colonel

Journalist: "What about the health risks that are associated with D.U.? Or do you deny there are any?"

U.S. Army Colonel: "You are determined to get me to make a statement about the health risks aren't you?"

Journalist: "If you will, I want to see what the behind the scenes view of D.U. is in the Pentagon."

U.S. Army Colonel: "Well.....(long pause, followed by heavy profanity).... Okay, I'll give you some dirt if that's what you're looking for. The Pentagon knows there are huge health risks associated with D.U. They know from years of monitoring our own test ranges and manufacturing facilities. There were parts of Iraq designated as high contamination areas before we ever placed any troops on the ground. The areas around Basra, Jalibah, Talil, most of the southern desert, and various other hot spots were all identified as contaminated before the war. Some of the areas in the southern desert region along the Kuwaiti border are especially radioactive on scans and tests. One of our test ranges in Saudi Arabia shows over 1000 times the normal background level for radiation. We have test ranges in the U.S. that are extremely contaminated, hell they have been since the 80's and nothing is ever said publicly. Don't ask don't tell is not only applied to gays, it is applied to this matter heavily. I know that at one time the theory was developed that any soldier exposed to D.U. shells should have to wear full MOP gear (the chemical protective suit). But they realized that it just wouldn't be practical and it was never openly discussed again."

Journalist: "So the stories that they know D.U. is harmful are true?"

U.S. Army Colonel: "Yes, there is no doubt that most high level commanders who were around during the 80's know about it."

Interview by Jay Shaft, Editor Coalition for Free Thought in Media, "U.S. Colonel Admits That 500 Tons of D.U. Were Just Used in Iraq" May 5, 2003.

2003 - SANDIA NATIONAL LABORATORIES - is a U.S. Nuclear Weapons Lab
Funding provided by the Department of Energy's (DOE) Office of Biological and Environmental Research, and Sandia's Laboratory Directed Research and Development.

"Sandia nanolaser may help extend life-spans by rapidly analyzing possible neuroprotectant drugs"
by Neal Singer

"Helping Gulf War victims" – Sandia has been doing research on the role of mitochondria malfunctions identified as the most immediate cause of Parkinson's, Huntington's, and Alzheimer's. Loss of brain function is caused by neurons killed by malfunctions in the mitochondria. "Malfunctioning mitochondria have also been linked to battlefield aftereffects caused by radiation or by nerve agents like sarin." Gulf War victims frequently develop Lou Gehrig's disease or "ALS (the neuron disease amyotrophic lateral sclerosis) which is a neurodegenerative disorder that kills motor neurons causing paralysis and death in three years." It affects both Gulf War veterans and civilians. Funding is now being requested from the U.S. Congress for research "to help Gulf War victims".

SandiaLabNews Vol. 55, No. 19, September 19, 2003
http://www.sandia.gov/LabNews/LN09-19-03/key09-19-03_stories.html#nano

[AN EXTREMELY IMPORTANT U.S. GOVT. ADMISSION THAT CANCER AND BIRTH DEFECTS ARE NOT THE ONLY DISEASES CAUSED BY RADIATION EXPOSURE.]

2003 - MEDIA: WHITE HOUSE/PENTAGON CONTROLLING THE NEWS TBRNews.com

During the middle of March, 2003, tbrnews received an email from a man who claimed to be a mid-level executive with a major American television network. He stated in this, and subsequent, emails that he was in possession of "thousands" of pages of in-house memos sent from his corporate headquarters in New York City to the head of the network's television news department. He went on to say that these memos set forth directives about what material was, and was not, to be aired on the various outlets of the network.

This individual claimed he was developing serious doubts about the strict control of media events and decided that he would pass this material along to someone who might make use of it... All are on corporate stationary, signed or initialed by the senders and again, signed or initialed by the recipients in the news division...

If these memos were true, they showed with a terrible clarity that at least one part of the American mass media was strictly controlled and that the news was so doctored and spun that it might as well be official news releases from the White House and Pentagon:

(Sept 28) There is to be nothing said about the high levels of radiation in Iraq. Depleted uranium is the culprit but if it becomes too widespread, it is to be blamed on Saddam's "hidden A-bomb arsenal"! Our man in the Pentagon was moaning that when GIs start losing their hair and fingers in a few years, there will be more lawsuits. As they say in the military, "not on my watch, Charlie!"

(Nov 17) the Supreme Court is busting Bush's balls now. They are going to take cases about the Gitmo [Guantanamo] gulag and the White House is shrieking with rage. I guess the Court doesn't realize that Bush thinks he is the one to decide what is constitutional and not the Court. He has a rude surprise coming very soon as I understand...

To read more than 1400 memos since February 2003 with daily updates go to
<http://www.tbrnews.org/index.htm>.

Esmeralda Abd' Allah Portales, Conference moderator, Cuba

