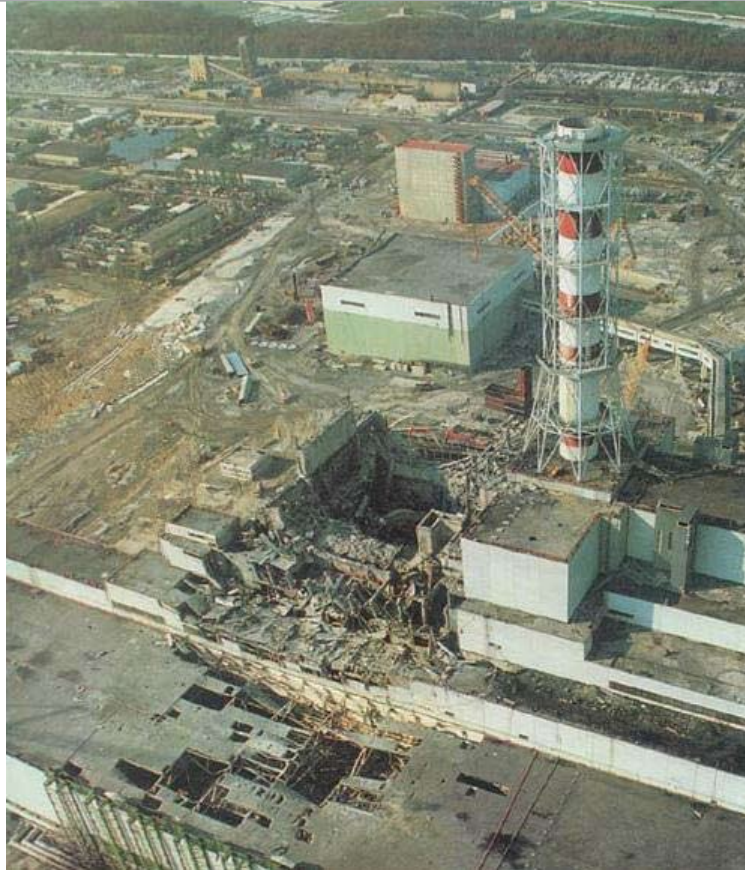


THE NUCLEAR INDUSTRY: A HISTORY OF MISLEADING CLAIMS

Author: Dr Sue Wareham OAM

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Aftermath of Chernobyl Disaster

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About the Author

Contact contributors to this Briefing Paper via Jim Green <jim.green@foe.org.au>, 0417 318 368.

Dr Sue Wareham OAM is President of the Medical Association for Prevention of War (Australia). She is a general practitioner in Canberra. The author thanks Dr Jim Green, Prof Brian Martin, Dr Mark Diesendorf and Dr Peter Karamoskos for helpful advice on the initial draft of this paper. .

About the EnergyScience Coalition

The EnergyScience Coalition is an independent non-governmental organisation established as a collaboration of concerned scientists, engineers and policy experts to promote informed public debate on energy issues. It is supported as a community service by the Australian Centre for Science, Innovation and Society at the University of Melbourne. EnergyScience Briefing Papers are posted at <www.energyscience.org.au>.

1. ABSTRACT

It is essential that decisions made on Australia's energy future are based on the best possible evidence on the options available to us. Where there are doubts, caution must be exercised. In the case of nuclear power, these principles are particularly important because, among other reasons, this form of power generation produces dangerous substances that can be used as fuel for nuclear weapons and will last far longer than any human institution or civilisation. That places a grave responsibility upon us.

The Australian Government has promoted nuclear power as a significant contributor to reducing greenhouse gases. The nuclear industry however has a history of very misleading claims that have, at best, confused the issue, and, at worst, diverted attention from real solutions to the problem. Patently false claims have been made, genuine debate and critical examination have been avoided, evidence ignored, opponents silenced or marginalised, and critical issues of public health and welfare have been addressed with standard bland platitudes. Regulatory bodies have too often appeared to place expediency for the industry above the health and protection of the public.

This paper examines just some of the most notable examples of the positive spin presented by an industry that is fraught with difficulties.

2. INTRODUCTION

Even as nuclear power was being promoted as "too cheap to meter" half a century ago, the fallacy of that assessment was known. All technical evaluations made by government, industry and academics in the US in the late 1940s and the early 1950s concluded that nuclear energy would be difficult to master and would not be cheap.¹

C G Suits, who was Vice-President and Director of Research of General Electric, said in 1950, "The economics of atomic power are not attractive at present, nor are they likely to be for a long time in the future. This is expensive power, not cheap power as the public has been led to believe."²

However as the US and the USSR embarked on their race to outdo one another's destructive capacity with the new technology, there was a need to render the technology acceptable to the public by presenting it as essential to mankind's progress. The "Atoms for Peace" promotional campaign extolled the virtues of the new source of energy, and the already known health concerns were kept hidden.³

That pattern continues, as we are now told that nuclear power is necessary if we are to combat climate change. There are two overwhelming threats to human existence as we know it - climate change and nuclear weapons; and nuclear power, far from being part of the solution, helps perpetuate the second of these threats, while being too slow, costly and greenhouse intensive to address the first. Meanwhile, real solutions to climate change, in the form of energy efficiencies and renewable energies, are marginalised and shamefully under-resourced, especially in Australia.

Recently the Environment Ministers of Austria, Germany, Ireland, Italy, Latvia and Norway, supported by Luxembourg

and Iceland, met to discuss the role of nuclear power in addressing climate change. In a statement issued by the Ministers on October 1 (2007),⁴ a statement heavily laden with concerns, they “emphasised their view that nuclear power is not compatible with the concept of sustainable development and that they are convinced that nuclear power does not provide a viable option to combat climate change”.

However the statement was significant not only for its conclusions but also for the fact that the need for transparency in nuclear matters was referred to several times. Reference was made, for example, to the need for “transparency regarding the true costs of nuclear power as well as alternatives to nuclear power”. The lack of transparency noted by the Ministers lies at the heart of much of the mistrust of the industry that has developed over time.

It should be noted that the problems of secrecy and failure to address public concerns are magnified much further in the case of nuclear weapons. The cover-up of the health effects of nuclear weapons development began very early, on 19 September 1945, when the General Headquarters of the Allied Forces in Japan issued a press code requiring permission before the publication of any research on the harmful effects of the atomic bombs.⁵ Subsequently, in the name of security, whole populations have been exposed to fallout from nuclear weapons testing, with a disregard, sometimes wilful, of public health and the environment.⁶ This paper however will focus only on the nuclear power industry and will not examine the subject of nuclear weapons development.

3. NUCLEAR POWER AND HEALTH

Nuclear power can expose populations to varying doses of radiation, from low level emissions associated with routine operation of nuclear facilities to very high level exposure from a nuclear accident.

Historically it is the effects of low level exposure that have attracted greatest scientific controversy.⁷ However the scientific community is very widely of the view that there is no level of radiation exposure that can be regarded as safe. Most recently, in 2005, the Committee on the Biological Effects of Ionising Radiation (BEIR) of the US National Academy of Sciences, stated that “...the risk of cancer proceeds in a linear fashion at lower doses without a threshold and ... the smallest dose has the potential to cause a small increase in risk to humans.”⁸

- **A little bit is good for you**

The nuclear industry, however, continues to downplay the risks and even promote the largely discredited notion of “hormesis”, the idea that a bit of radiation is good for us. The Uranium Information Centre (UIC) states, “The prevailing assumption is that any dose of radiation, no matter how small, involves a possibility of risk to human health. However there is no scientific evidence of risk at doses below about 50 millisieverts in a short time or about 100 millisieverts per year. At lower doses and dose rates, up to at least 10 millisieverts per year, the evidence suggests that beneficial effects are as likely as adverse ones.”⁹ This is in direct contrast to the authoritative BEIR assessment quoted above.

It is also in conflict with the work of (among others) Dr Alice Stewart, British epidemiologist, who established as long ago as 1956 that the children of mothers X-rayed during pregnancy (a procedure that involves far less than 50 millisieverts radiation exposure) had double the risk of developing leukemia and other forms of cancer compared to children who were not exposed.¹⁰

The most recent promotion of the “A bit of radiation is good for you” statement in Australia was in presentations given in Alice Springs in August 2007, on behalf of uranium exploration and mining companies Toro Energy, Uranium One and Heathgate Resources. The residents of the town were told, “There is strong evidence that shows low dose radiation exposure, such as the type experienced under occupational or medical situations, can induce processes that are not dangerous but actually protect cells and organisms from radiation or other carcinogens in the environment.” While promotion of this view is undoubtedly helpful to the uranium industry, it serves to mislead the public, rather than enlighten them, about the health effects of radiation exposure.

- **ICRP**

The international body that sets “acceptable” radiation exposure limits, the International Commission on Radiological Protection (ICRP), has attracted significant criticism for allegedly setting limits that are convenient for industry, rather than those that give priority to the protection of public health.¹¹ This “bias to complacency”¹² has been demonstrated on a number of occasions, including the ICRP’s silence in the campaign to end atmospheric nuclear tests, despite the known dangers from these tests at the time.

- **Research difficulties and their exploitation**

In addition there has been a refusal on the part of the industry to acknowledge the great difficulties with research into

the health effects of radiation exposure.

Firstly, health effects such as cancer due to radiation exposure often take decades to develop. Secondly, cancers due to radiation exposure are indistinguishable from any other cancer. Thirdly, radioisotopes can travel great distances. Therefore epidemiological studies investigating the effects of a particular radiation exposure are necessarily very long, they may involve many countries if not continents, and they are extraordinarily complex.

Fourthly, certain types of radiation exposure may be difficult to measure, with a weak or absent photon signature detected by standard radiation exposure monitors worn by those at occupational risk. This is especially the case for the most biologically injurious forms of radiation – inhaled and ingested alpha emitters such as radon and plutonium.

Add to this the fact that cancer is a common disease in any event, and the result is that a small percentage increase in cancer rates due to radiation exposure can readily be overlooked, even when the absolute number of cancers caused by radiation exposure may be very large.

A further source of misleading research results is the mixing, inadvertently or knowingly, of data for populations exposed to quite different levels of radiation, for example after a nuclear accident. The results for heavily exposed populations may then be “diluted” by results for much less exposed populations and the results overall will appear reassuringly low.

The most outstanding example of exploitation of these factors is the oft-quoted mortality figure of several dozen deaths as a result of the Chernobyl accident. The website of the Uranium Information Centre (UIC), in a graph of “Energy-related accidents”, states that 31 + people died as a result of the accident.¹³ No credible authority supports this conclusion. Chernobyl-related mortality will be discussed below.

These intrinsic difficulties are compounded for researchers by difficulties of quite a different kind, namely the hazards of challenging the nuclear establishment with unwelcome findings. Dr Alice Stewart’s discovery that children who had been exposed in the uterus to X-rays had double the risk of developing leukemia and other cancers, was of great significance and is now undisputed in medical practice. And yet her findings were aggressively rejected by the nuclear lobby,¹⁴ both within and outside government, and by the ICRP.

Subsequently, Stewart worked with Professor Thomas Mancuso, Professor of Occupational Medicine at the University of Pittsburgh in the US, on the health of workers at the Hanford plutonium production facility. When their results showed cancer incidence roughly ten times that predicted by A-bomb survivor studies, Mancuso’s research funding ceased, and the US Government attempted to destroy data that he had collected.¹⁵

Other scientists who suffered the consequences of raising concerns about the effects of radiation exposure include John Gofman, who died in August 2007, and his colleague Arthur R Tamplin. Gofman was the chief medical researcher for the Atomic Energy Commission in the US, which both regulated and promoted the US nuclear industry. After he and Tamplin published data in 1969 showing that the risks from low dose radiation were much greater than that stated by the government (despite strong attempts by others at censorship), the two lost virtually all of their research funding.¹⁶

Dhirendra Sharma was a leading figure in science policy research at India’s Jawaharlal Nehru University, and was an outspoken critic of the Indian nuclear power program and its links to nuclear weapons. He alleged secrecy, lack of accountability, mismanagement and corruption. His book *India’s Nuclear Estate* was published in mid 1983. In December 1983 he was suddenly transferred out of the Centre for Studies of Science Policy, with no satisfactory official explanation being given, and thus his ability to further engage officially in science policy studies was diminished.¹⁷

In Belarus in 1999, more than a decade after the 1986 Chernobyl accident, Professor Yuri Bandashevsky, head of the Gomel State Medical Centre in one of the most contaminated regions, also paid a heavy personal price for his work. He was arrested and sentenced to 8 years imprisonment, allegedly for his work on the health effects of the accident and his criticism of lack of government resources for medical investigation of the disaster.

A final obstacle in the way of research on the health effects of radiation exposure relates to funding. Rudi Nussbaum, Professor Emeritus of Physics and Environmental Sciences at Portland State University in the US, reports that “Practically all such research has relied on funding by agencies that were created to promote, facilitate and regulate military and civilian uses of ionising radiation, to allay concerns about health effects from occupational and public exposure, and to fend off litigation for workers’ compensation claims”.¹⁸ This situation indicates a clear conflict of

interest for those bodies that purport to, on the one hand, protect public health, and, on the other hand, promote an industry that undermines public health.

- **WHO / IAEA agreement**

This conflict of interest is well illustrated by the relationship between the World Health Organization (WHO) and the International Atomic Energy Agency (IAEA). In 1959 an agreement was signed between the two bodies that sets out their respective roles in relation to research on atomic energy. The agreement states that “whenever either organization proposes to initiate a programme or activity in which the other organization has or may have a substantial interest, the first party shall consult the other with a view to adjusting the matter by mutual agreement.”

In other words, the world’s pre-eminent public health authority, the WHO, must consult with a non-medical body, the IAEA, whose mandate includes the promotion of nuclear energy, before undertaking any activity related to the health effects of nuclear energy. In practice this has greatly undermined WHO’s independence in relation to radiation health matters. After the 1986 Chernobyl catastrophe for example, the WHO played an extraordinarily low key role in the monitoring of people in the region.

4. NUCLEAR ACCIDENTS

Official denial of harm in the nuclear industry reaches its peak in the event of accident. Radioactivity is not readily detected by the general public, and official announcements in the event of an accident almost invariably appear focussed on hiding, rather than providing, accurate information.

This was nowhere more evident than after the Chernobyl accident in April 1986.

The first reports of the Chernobyl accident came not from the USSR but from Sweden where the radioactivity was detected. One might argue that, while the Soviet authorities covered up the Chernobyl accident for as long as possible, such a degree of contempt for public health and safety would not occur now in the post-Cold War era.

However such faith that all nuclear facility operators and governments (such as the Chinese government which is about to receive Australian uranium) will henceforth act openly in the event of a major disaster, needs a swift reality check. There is ample evidence that the opposite occurs. As the radiation spreads, a veil of secrecy often descends.

- **Chernobyl**

From the time of the disaster, official reports have minimised the potential for harm from Chernobyl. The most recent UN report on its effects was the 2005 UN Chernobyl Forum report, released in September 2005 by the IAEA, the WHO, the UN Development Program and other UN agencies. The press release for the report¹⁹ stated that a total of up to 4,000 people could eventually die as a result of radiation exposure from the accident, but that as of mid-2005 “fewer than 50 deaths had been directly attributed to radiation from the disaster, almost all being highly exposed rescue workers”.

However a reading of the report itself indicates serious inconsistencies between the press release and the full text, and major omissions in the report. In the draft “Health” section of the report, released simultaneously with the press release, the data indicated not 4,000 deaths but closer to 9,000 excess cancer deaths. Even this figure did not take the following into account:²⁰

- Only 200,000 of the 600,000 – 800,000 liquidators were studied.
- No deaths outside the Ukraine, Belarus and Russia were studied. Many countries in Europe received low doses of radiation which, spread across millions of people, would be expected to result in large numbers of cancers.
- Children born since 1986, and all future generations, were ignored.
- Internal exposures of radiation were not considered.
- Non-cancer deaths, such as those due to cardio-vascular disease and suicide, were not studied.

The report did not refer to data published in 2004 from the Belarus National Cancer Registry, which showed an increase in cancer incidence generally, especially in Gomel, the most heavily contaminated region.

Buried in the depths of the report itself (page 137) is the statement “In reality, the actual number of deaths caused by this accident is unlikely to ever be precisely known”. That is not the message conveyed in the report’s press release.

Other estimates of the Chernobyl death toll are significantly higher than the approximately 9,000 cancer deaths estimated in the UN Chernobyl Forum report. Dr Ian Fairlie, (formerly) of the British government’s Committee

Examining the Radiation Risk of Internal Emitters, estimates that more than half the fallout from Chernobyl fell outside the three most heavily exposed countries (Belarus, Ukraine and Russia). He estimates that about 40% of the surface area of Europe was contaminated, and that 30,000 to 60,000 excess cancer deaths would occur throughout the Northern hemisphere as a result of the accident.²¹

Fairlie states:

“It appears that the IAEA/WHO decided to focus their reports only on countries with high concentrations of Cs-137 [caesium-137], that is, Belarus, Ukraine and Russia. Although heavy deposition certainly occurred there, the omission of any examination of Chernobyl fallout in the rest of Europe and the northern hemisphere is questionable, as most Cs-137 from Chernobyl was in fact deposited outside these countries.”

He continues that “...within many governments, the nuclear industry and, to a lesser extent, within radiation protection circles”, there is “a noticeable reluctance” to use such collective doses of radiation exposure (for example, the dose received by a whole region) to estimate the health effects of a given exposure. “This official reluctance is partly due to the uncertainties involved”, he said, “and partly due to the fact that from a given collective dose one can readily estimate the numbers of future cancer deaths, which some agencies may not wish to emphasise.”²²

Fairlie comments further that, while the number of excess cancer deaths estimated by his study is very large, “these excess deaths are nevertheless unlikely to be discernible in epidemiological studies, as cancer is a very common disease and radiogenic cancers are not distinguishable from naturally-occurring cancers.”²³

• **Three Mile Island**

On 28 March 1979, the nuclear chain reaction in the Three Mile Island (TMI) Unit 2 reactor went out of control. There were uncontrolled releases of radioactivity to the environment, and radiation monitors at the site went off scale. In addition, there was lack of knowledge as to how to shut down the reactor, lack of experience in dealing with such a situation, and conflicting reports about the severity of the situation. By April 1, industry and government authorities assured the public that levels of radiation were far below those that could cause harm. To this day, that is the claim of the industry.

Others disagree strongly however. Hundreds of local residents reported a metallic taste, red skin, nausea, vomiting, hair loss, deaths of pets and farm animals, and damage to plants.²⁴ They were told that their symptoms were due to psychological stress. While such stress can cause some of the reported effects, some are far more consistent with exposure to high-level radiation. Cancer rates were reported to increase also, even in the early years following the accident.

An investigation by researchers from Columbia University, financed by the nuclear industry’s insurers, and reviewed and approved by their lawyers, claimed that there was no evidence that radiation releases from the accident had influenced cancer risks in the limited period to 1985.²⁵ However examination of the same data by Wing and others concluded that the radiation exposures were in fact associated with excess cancer incidence in the local population. Wing identified problems with the original Columbia University analysis. He writes, “Despite differences in results between the Columbia studies and ours, both found evidence of impacts of the accident on cancer incidence. However the evidence led us to different conclusions regarding both cause and biological mechanism. The Columbia group concluded that the evidence suggested stress as a cause, and stress-induced immune depression as a mechanism. We concluded that the evidence suggested radiation as a cause...”²⁶

Approximately 2,000 local residents brought a class action against the industry for alleged health effects, arguing that the prevailing meteorological conditions at the time of the accident caused narrow plumes of intense radioactivity in the surrounding countryside.²⁷

Epidemiologist and co-founder of the International Institute of Concern for Public Health, Dr Rosalie Bertell, claims that the nuclear industry “managed to eliminate all of the expert witnesses which the victims had engaged to bring their cause before the Court, subsequently causing the cases to be dismissed for lack of witnesses.”²⁸ She states “The nuclear industry has frustrated the litigation of all the serious health claims of the TMI exposed people.”²⁹

Reflecting on this apparent denial of justice, Dr Bertell says “ I believe that it should be made a court ruling that defendants, such as the nuclear industry, should not be allowed to declare their own witnesses the official spokespersons for a branch of knowledge, able to define for the court the methodologies which they accept and practise as the only legitimate ones. It was such a ploy that was used to dismiss the TMI’s plaintiffs’ witnesses.”³⁰

Dr. Bertell was a member of the Citizens’ Advisory Council to the Kemmeny Commission set up by President Carter to investigate the accident. Information regarding doses received by the public was deemed “classified” and

therefore not available to Bertell and other members of the citizens' council.³¹

- **Other accidents**

Contrary to nuclear industry claims, there have been many other serious nuclear accidents, and they continue to this day. Those living in the vicinity of nuclear accidents continue to be met with official refusal to provide accurate information regarding radiation releases.

The Sellafield nuclear facility in the UK, the site of a disastrous fire in October 1957 and the source of large quantities of radioactive discharges into the environment, caused yet another episode of major environmental contamination in 2004. In August that year, a pipe in the THORP reprocessing plant at Sellafield commenced leaking spent reactor fuel and continued to do so for 8 months until it was detected, by which time about 83,000 litres of highly radioactive liquid, containing approximately 160 kgs plutonium had been lost.³² This event remained largely hidden from public scrutiny, as had the 1957 fire.³³ The industry has consistently denied any cause for concern in relation to Sellafield.

In Sweden, after what was described by workers as a near melt-down at a nuclear plant at Forsmark on July 25, 2006, Swedish nuclear energy expert Lars-Olov Hogland accused the plant's operators of trying to play down the seriousness of the accident.³⁴

In Japan, there have been a number of serious accidents, including fatal accidents, at nuclear facilities in the past decade. In 1999, after a serious criticality (out-of-control chain reaction) accident at the Tokai Mura uranium processing plant, details emerged about a company manual that legitimised breaches of government safety rules. In 1983, the company's building application for the facility had shown an impressive degree of confidence with the assertion that "No criticality accident can occur in the plant because it is designed to be always safe under any circumstances".³⁵ It's a recurring theme in the nuclear industry: It couldn't have happened, therefore it didn't happen.

Japan's most recent fire and radiation leakage from a nuclear plant occurred after a 6.8 magnitude earthquake affected the Kashiwakazi-Kariwa nuclear plant, the world's largest, on 16 July, 2007. The plant was designed to withstand earthquakes up to magnitude 6.5. (There have been three earthquakes of greater than 6.5 magnitude in Japan just within the last 2 years.) The Tokyo Electric Power Company was very slow to provide reliable information on the scale and nature of the danger to nearby residents. The Citizens' Nuclear Information Center in Japan accused the Japanese Government of putting money before safety, and of lack of transparency in relation to the nuclear industry.³⁶

Serious concerns were expressed in 2002, including by the IAEA, about failure on the part of several Japanese nuclear power companies to report faults in their reactors, in addition to falsified safety reports. For example, Tepco officials are alleged to have faked a pressure test designed to test the integrity of the containment building.³⁷

In yet another recent reactor accident, in July 2007, the seriousness of a fire at a nuclear power plant in Krummel, near Hamburg in Germany, was played down by officials who initially denied that the reactor itself had been affected. The reactor was in fact damaged by the fire and has been shut down.³⁸

Accidents may occur during any of the many phases of nuclear power production, including the mining of uranium. Uranium mining accidents, combined with large quantities of waste in the form of tailings, have contaminated areas of priceless Australian wilderness. In May 2000, a leak of manganese into the Kakadu wetlands from the Ranger mine, was kept secret by the mine's owner Energy Resources Australia, for three weeks, until after sensitive discussions on the nearby Jabiluka mine had taken place.³⁹

5. URANIUM TO WEAPONS

One of the most grievous failures of the nuclear power industry is its consistent denial of the links between nuclear power and nuclear weapons. Australia, as an exporter of uranium, is culpable in this.

Safeguards are said to prevent the diversion of our uranium to weapons. And yet the facts are irrefutable and include the following:

- Safeguards rely primarily on book-keeping entries at nuclear facilities. They are simply not capable of detecting the diversion of the very small quantities of fissile material (eg 3-4 kgs plutonium) required to make a weapon.
- Safeguards are not even designed to prevent diversion of fissile material, but simply to detect it after the event.

Safeguards do not operate during the phase of the nuclear chain which is particularly vulnerable to sabotage or theft, the transport phase. In 1968, 200 tons of uranium oxide (yellowcake) were seized while in transit by ship through

the Mediterranean Sea and taken to Israel's nuclear weapons complex at Dimona. The theft was covered up by the governments involved for several years.⁴⁰

In 1988, Euratom, the European atomic energy agency, encouraged "flag-swapping", or re-labelling of the origin of uranium shipments, to overcome safeguards. Minutes from a meeting in 1986 showed that Euratom believed that even if countries such as Australia, the US and Canada could be "educated" to relax their view of label swaps, they should not be told the origin of the uranium with which their shipments were swapped.⁴¹

The impending export of uranium to China further exemplifies some of the deception. Safeguards do not even apply at the uranium's first port of call when it reaches China, a conversion facility,⁴² or at the enrichment plant most likely to process imported uranium, or at China's two fuel fabricating plants. Miraculously, the non-existent safeguards at these facilities will help keep our uranium out of weapons. The risks are magnified by the fact that the same organization – the China National Nuclear Corporation – controls all aspects of the nuclear fuel chain in China, both civilian and military.

An extremely important link between the civilian and military uses of plutonium, particularly important in relation to whether Australian uranium can find its way into weapons, is the use of reactor grade plutonium for nuclear weapons. The nuclear industry, and some supportive governments such as the Australian government, regularly state that plutonium produced in a power reactor cannot be used for weapons.⁴³

There is no doubt however from the evidence of many authorities that the industry's claim is wrong.⁴⁴ Hans Blix, former Director-General of the IAEA, says the IAEA "considers plutonium of any isotopic compositionto be capable of use in a nuclear explosive device. There is no debate on the matter in the Agency's Department of Safeguards."⁴⁵

6. TERRORISM AND NUCLEAR FACILITIES

The risk of a terrorist attack on a nuclear facility is one that has been greatly downplayed by the nuclear industry. While the attacks on the US on September 11, 2001, heightened fears and greatly raised awareness of the problem, there had been attempts long before then to force the industry to provide greater degrees of protection of nuclear power plants against sabotage, theft of fissile material, or attack by truck bomb, aircraft or other means.

This subject is not of minor importance. Cooling ponds attached to nuclear reactors contain vast quantities of radioisotopes, far greater than that released for example by the Hiroshima and Nagasaki bombs. If released by breach of the containment building, the radioactivity would cause not only extremely serious health consequences but also widespread panic and social disruption.

In 1984, after the bombing of the US Marine barracks in Beirut, the Nuclear Regulatory Commission (NRC) in the US commissioned an "Analysis of truck bomb threats at nuclear facilities", which was conducted by Sandia National Laboratories. The study concluded that "Unacceptable damage to vital reactor systems could occur from ...reasonable-sized charges at large setback distances, greater than the protected area for most plants". The NRC's response was to keep the findings from the public and announce that the study was still continuing.⁴⁶

In Australia, as part of the licensing process for the construction of the Replacement Research Reactor (RRR) at Lucas Heights, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) considered the possible consequences of a terrorist attack on the facility. Dr Bill Williams of the Medical Association for Prevention of War (MAPW), and a member of ARPANSA's Radiation Health Committee, recommended that further consideration of the application required full documentation, including radiological consequences analysis for major explosive impact on a suburban nuclear reactor and spent fuel storage facility. Dr Williams also recommended that this documentation should be made available to the public and subjected to detailed independent analysis as part of the construction license application assessment. However the analyses of the various scenarios studied were never made public, security concerns being cited as the reason.⁴⁷

In its "Analysis of consequences" of an act of terrorism or sabotage, the CEO of ARPANSA stated "In the context of these consequences, arising from a highly unlikely event that is, in turn, highly unlikely to succeed, and noting that emergency arrangements could play a role in mitigating the consequences, I find that the siting of the RRR at Lucas Heights remains acceptable."⁴⁸ One wonders how likely the CEO of ARPANSA would have rated the risk of four large aircraft being hijacked in the one nation and causing around 3,000 deaths in one day.

The approval process for the Lucas Heights replacement reactor exemplified the general lack of community

consultation that characterises many decisions related to nuclear facilities. A senior government official, speaking on radio in March 1998, said “The government decided to starve the opponents of oxygen, so that they could dictate the manner of the debate that would follow the announcement.....Just keep them in the dark completely.”⁴⁹

7. THE BACK END – NUCLEAR WASTE

The problem of nuclear waste has generally been presented by the industry as resolved. Nothing could be further from the truth. Not a single country has in place a proven viable permanent nuclear waste management plan.

In the US, a resting place for the country’s 70,000 tons of high level waste (from military and civilian programs) is still awaited, as doubts remain about the suitability of the Yucca Mountain site. In March 2005, the Department of Energy’s case for Yucca Mountain was dealt a further blow when emails within the Department of Energy revealed scientists discussing the fabrication of data.⁵⁰

One of the tactics used by the nuclear industry to sidestep legitimate concerns is the exploitation of gaps in our knowledge. K. S. Shrader-Frechette, Distinguished Research Professor of Philosophy at the University of South Florida, describes this “appeal to ignorance” as follows: “One’s ignorance about potential problems – and admittedly such ignorance is always only partial – is not a sufficient condition for asserting that the problems are not significant.One of the most problematic inferences that occurs in assessing long-term radwaste risks occurs when one assumes that because one does not know of a way for repository failure or radionuclide to occur, none will occur.”⁵¹

She cites the example of the Maxey Flats nuclear waste dump in Kentucky, where industry consultants estimated that plutonium buried there would take 24,000 years to migrate one half inch. Only 10 years after the facility opened, plutonium and other radionuclides were detected 2 miles away.⁵²

The problem of nuclear waste has, predictably, attracted the attention of those who see it as an economic opportunity for Australia. Dr John White, chairman of the federal government’s Uranium Industry Framework, has developed, with colleagues, a proposal for Australia to manage not only uranium enrichment, fuel rod fabrication, leasing, and transport for other nations, but also the long term storage of spent fuel rods. Julie Macken observed in New Matilda in November 2006, “The scope of White’s proposal and the fact that it has progressed so far without any public scrutiny or comment in a democracy like Australia is quite extraordinary.”⁵³

White, in the US at the time of the interview with Macken, explained “If we do this for America, we will never again have to put young Australians in the line of fire. We will never have to prove our loyalty to the US by sending our soldiers to fight in their wars, because a project like this would settle the question of our loyalty once and for all.”⁵⁴ Many Australians however, if asked, would not feel compelled to provide waste facilities (or soldiers) to fulfil another nation’s agenda. But they are not being asked.

Australians have no reason to expect high standards of nuclear waste management from the relevant authorities in this country if the “clean-up” of the Maralinga test site is any guide. Engineer Alan Parkinson, in his recently released book “Maralinga: Australia’s Nuclear Waste Cover-up” describes the grievous failure of ARPANSA to enforce clean-up standards at Maralinga that were remotely close to being adequate.⁵⁵ While Maralinga was of course a weapons test site and not directly related to the development of civilian nuclear power, ARPANSA is the same regulatory body entrusted with overseeing the health aspects of all civilian nuclear activities in the country.

In the face of government claims that the Maralinga clean-up was “world’s best practice” Parkinson is scathing. “When you consider that people who are in charge of this project are the same people who are responsible for a national nuclear waste repository, which will be used to dispose of far less hazardous waste than this”, he says, “..they’re the people who could easily just say, ‘Well, just put a hole in the ground, throw it in.’ That’s what we’ve done with the plutonium at Maralinga.”⁵⁶

8. COMMUNITY CONSULTATION

Central to a healthy democracy is the involvement of communities in the making of decisions that will affect them. In the case of nuclear power, legitimate community concerns have been ignored, and genuine consultation has very often been absent. Notable exceptions to this are the referendums that have been conducted in several European countries to gauge community attitudes to nuclear power.

Lack of consultation is nowhere more evident in Australia currently than in relation to plans for a nuclear waste dump. In September 2004, the Federal Minister for Environment and Heritage, Senator Ian Campbell, gave an “absolute categorical assurance” to the people of the Northern Territory that no nuclear waste dump would be imposed on them.⁵⁷ That assurance has been broken, and in 2005 the government introduced legislation that over-rides any federal, state or territory legislation that might stand in the way of a waste dump.⁵⁸

Specifically, the Commonwealth Radioactive Waste Management Bill, which passed through parliament in December 2005, over-rides existing native title rights and the 1999 Environment Protection and Biodiversity Conservation Act. The legislation makes it clear that the Government owes no legal obligation of procedural fairness towards anybody affected by the decision.

Further draconian legislation was pushed through parliament in late 2006. The 2006 Commonwealth Radioactive Waste Management Legislation Amendment Act removes the right of traditional owners to appeal against arbitrary decisions on the part of land councils or the Minister in relation to use of their land for a nuclear waste dump. It also removes the right to appeal under the Administrative Decisions (Judicial Review) Act 1977. Such was the haste with which the issue was addressed - in relation to waste that will last for thousands of years - that members of the Senate Employment, Workplace Relations and Education Legislative Committee, to which the matter was referred, had insufficient time to visit the NT to gauge local opinion on the matter.

There has been no genuine consultation with the Northern Territory government or people, or those living along the proposed transport routes. There will be no impartial examination of the evidence in relation to nuclear waste and there will be no application of the precautionary principle that dictates caution where there are gaps in our scientific knowledge. There will simply be coercion of those whose concerns are not allayed, with the standard reassurances that the waste is safe.

In the UK, the standard of consultation in relation to nuclear matters is no better. In February 2007, the High Court in the UK ruled that the government had carried out a “misleading” and “seriously flawed” consultation process in relation to its plans to commission new nuclear power plants. Mr Justice Sullivan stated, “The 2006 consultation document contained no information of any substance on any of the issues identified as being of crucial importance... It was not merely inadequate but it was also misleading”.⁵⁹

While lack of community consultation is worrying enough, and the presentation of misleading information even more so, the experiences of former British Labour MP and Cabinet Minister Tony Benn are of profound concern. Benn wrote in 2002 of his experiences as Minister of Technology from 1966, responsible for developing civilian nuclear power in Britain. He says “At no stage, as a minister, could I rely on being told the truth either by the industry itself, or by my civil servants who may or may not have known it themselves. Some dramatic examples of misinformation which made a deep impression on me converted me from being a supporter to a very strong opponent of the whole nuclear power program.”⁶⁰ Perhaps most stunning of all the revelations made to Benn was the news that, while he was a minister, plutonium from British nuclear power stations was sent to the US for their weapons program.⁶¹

9. NUCLEAR POWER FOR AUSTRALIA – THE FULL AGENDA ?

An examination of the history of aspirations within Australia to develop nuclear power here give additional cause for concern at the current push in that direction.

A study published in 1975, “The Australian Atomic Energy Commission: A Case Study in Australian Science and Government”, serves as a useful reminder of the extent to which the people of Australia have been kept in the dark on nuclear matters.⁶² Historian Dr Ann Moyal, in the introduction to her study of the Australian Atomic Energy Commission (AAEC), the precursor to the Australian Nuclear Science and Technology Organization (ANSTO), posed the following questions.

“...Has it evolved, expanded, re-organised, changed direction, consumed funds, used and produced talent, and ultimately marked time, behind closed political and administrative doors? Why have its work, its accomplishments and failures, not been subjected to public scrutiny?”

She referred to the “insufficient opportunity for public debate”, and to the organization’s “deeply rooted atmosphere of secrecy” and “disdain for public accountability”.

When the direction of the AAEC changed from research to concrete plans for the construction of a nuclear power plant, the Minister for National Development Mr Fairbairn “sidestepped” questions on the matter in parliament in

1967. A site was chosen, at Jervis Bay in NSW, but studies that determined the choice of location were not made available to the public. Requests in parliament for ecological and environmental reports were evaded, because the reports were “confidential studies by the AAEC and the Electricity Commission of New South Wales”.⁶³

It is clear that a nuclear weapons capability was on the (hidden) agenda also. Discussions between the federal and state governments were to include “a basis for reserving to the Commonwealth such materials as it might require for defence purposes”.⁶⁴ Public awareness and discussion of this aspect of the program was minimal, despite its grave implications.

It was not until the advent of Prime Minister McMahon, who replaced Gorton in March 1971, that the project received scrutiny. McMahon suspected that even the government was not being kept fully informed about the matter, and ordered an investigation into the potential costs of nuclear power. The program was halted largely on economic grounds.⁶⁵

It is worth noting also Dr Moyal’s comments in relation to Lucas Heights, that there was very little in the way of policy discussion at the facility, where staff regarded the atmosphere as “pathologically secretive”.⁶⁶

Fast forward three and a half decades, and very serious concerns regarding accountability and public input into nuclear matters, and energy choices generally, remain. In 2006, Prime Minister Howard, while paying lip service to the need to consider all energy options for Australia, commissioned the Uranium Mining, Processing and Nuclear Energy Review (UMPNER), with a mandate clearly limited to examining only one form of energy production.

The UMPNER review panel was headed by nuclear physicist and (until then) board member of the Australian Nuclear Science and Technology Organization (ANSTO), Ziggy Switkowski. Mr Howard described the notion of a conflict of interest between Switkowski’s membership of the ANSTO board and his role as chair of UMPNER as “absurd”,⁶⁷ a curious comment in itself.

UMPNER’s taskforce membership was heavily weighted to produce an outcome favourable to the industry. The panel, while purporting to address health, safety, waste and weapons proliferation concerns, included no health professionals, no environmental experts and no leaders in the field of weapons proliferation. The UMPNER report, predictably, expressed no serious concerns in relation to any of these matters.

For example, in relation to the health implications of nuclear power, the report used a table “Fatal accidents in the worldwide energy sector, 1969 –2000” indicating a total of 31 deaths associated with nuclear reactor accidents during that period. A small footnote added that “These figures do not include latent or delayed deaths such as those caused by air pollution from fires, chemical exposure or radiation exposure that might occur following an industrial accident.”⁶⁸ One might just as easily claim that the number of deaths attributable to cigarette smoking equals the number of people who die in house fires caused by people smoking in bed, with a small footnote to the effect that there may be some cancers and heart disease in addition. Such extraordinarily misleading presentation of data undermines any faith that the report pays serious attention to not only the health consequences of nuclear power but also its other far-reaching implications.

Similarly, on the issue of nuclear waste, the report is a whitewash. It makes the false claim that, “Safe disposal of long-lived intermediate and high-level waste can be accomplished with existing technology.”⁶⁹ This begs the question, if it can be done, why isn’t it being done?

Such cursory attention to major issues associated with nuclear power tends to reinforce the historical failure of the industry to deal honestly with the concerns of its critics. In addition it does nothing to dispel concerns that, yet again, the people of Australia are not being told the full story about their government’s nuclear ambitions.

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