

Whose History?: The Nuclear Kaleidoscope

Presentation by Walt Patterson

I am not a historian. Please forgive me if my comments today lack academic rigour. They are more in the nature of personal reflections from some six decades of involvement with nuclear affairs. In the 1950s, while I was still a student of nuclear physics at my university in Canada, I began accumulating books on nuclear matters - not textbooks but popular and semipopular books about nuclear topics. From 1960 onward, when I moved to London with its abundance of secondhand bookstores, I became a serious collector. Through the 1970s and 1980s I also became a serious troublemaker on nuclear issues, in running battles with the UK Atomic Energy Authority, British Nuclear Fuels and the Central Electricity Generating Board - a nuclear establishment then at the height of its political power.

By 1990, however, I was bored with the sound of my own voice, reiterating arguments little changed for two decades, except that developments made our arguments ever more convincing. When private investors told the Thatcher government that they would not buy the UK nuclear power stations - much too risky - I thought we had won. I dragged myself out of nuclear controversy and moved on to more rewarding research on electricity.

By that time, my collection of nuclear books, reports and other printed matter numbered over 500 volumes, and took up far too much room in my study. I was overjoyed when the Science Museum agreed to accept the collection, along with a wealth of ephemera - posters, leaflets, brochures, badges, bumper stickers - from nuclear campaigns around the world. It's now in their huge repository near Swindon and on their website, as the Patterson Nuclear Collection. When Susan invited me to speak to you today, I immediately thought of that collection. It may be a unique historical resource. In it you can find every conceivable shade of opinion about nuclear energy and its impact on society. You will also find that even supposedly factual material, about policies and decisions, activities and events, is frequently contentious, inconsistent and contradictory.

It demonstrates comprehensively that the history of nuclear energy is amorphous and elusive, shape-shifting even as you try to focus on it. It's a narrative that reminds me of James Joyce's extraordinary novel *Finnegans Wake*. The meaning seems to be there, but when you look directly at it it changes and slips away. That is partly, of course, because of the complexity of the science. But it is much more often the result of the secrecy officially imposed on nuclear activities from the early 1940s onwards. It is further complicated by a fierce and continuing battle for control of the narrative. What story are we, the general public, to hear? What story do the different contending factions wish to tell us - wish us to believe?

Well into the 1950s, governments and nuclear establishments had near-complete control of the narrative. They told us what they wanted us to believe, and we had little option but to believe it. Then in 1954 came the Castle Bravo test of the first US hydrogen bomb. Radioactive fallout from the huge blast, drifting much farther than those responsible expected, showered a Japanese fishing boat, ironically called the *Lucky Dragon*, killing one crew member and seriously affecting others. Ralph Lapp's classic book *The Voyage of the Lucky Dragon* made public a well-documented story

that seriously challenged the US nuclear establishment's official line. From that time on, the discrepancy between the official nuclear narrative and the story told by its unofficial critics grew steadily wider.

Cover-ups and misinformation became the official norm. In the UK the opening of Calder Hall was acclaimed as 'the world's first nuclear power station', opened by the Queen in a famous newsreel. Calder Hall was actually built to produce weapons-plutonium. You wonder whether they told the Queen. The Windscale fire a year later was covered up and misrepresented. The radioactivity, they said, dispersed harmlessly. We now know it blanketed western Europe. The official report blamed a technician. We now know that official insistence on tritium production for hydrogen bombs caused the fire. In the US, tests of nuclear weapons above the Nevada desert produced fallout we measured in my nuclear physics lab in Canada in 1958. The US Atomic Energy Commission's denials were refuted by independent scientists collecting baby teeth that proved to be laden with strontium 90. But the official story, both about nuclear weapons and about civil nuclear power, still held the popular imagination, into the early 1960s. A fascinating and unnerving film called *The Atomic Cafe*, produced in the 1970s, is a reminder of how the official story about 'atomic power' excited public enthusiasm in the 1950s, even while urban areas were building fallout shelters.

Civil nuclear power was supposed to be the boon to humanity that would offset the terrible threat of nuclear weapons. For the nuclear people this was psychologically crucial. They had to believe that their careers were not just threatening the end of human life on earth, but had made a positive contribution to it. That underlying psychology shaped the official nuclear narrative from August 1945. In my nuclear collection you can find two Pocketbook paperbacks entitled *The Atomic Age Opens*, by the science editor of the *New York Times*. I had a copy of the second printing, published in September 1945. Then I spent a remarkable afternoon in Cambridge, visiting Otto Frisch, who coined the term 'nuclear fission' - and he gave me a copy of the first printing, August 1945, produced under wartime conditions within three weeks after Hiroshima. You can be sure that the book's euphoric pronouncements about nuclear-powered houses, cars and aircraft came from official sources eager to win public support for their nuclear activities - which were of course dumfoundingly expensive, as we taxpayers learned much later.

The Japanese, understandably, had a different view. In 1954 the classic film *Gojira* - crassly mistransliterated as 'Godzilla' for anglo audiences - starkly evoked the horror of nuclear annihilation. By the late 1950s popular alarm about nuclear weapons also exploded in the UK, with the Aldermaston marches and the Committee of 100. Frenzied atmospheric testing of nuclear weapons culminated in a stupefying 56-megaton blast by the Soviet Union, followed soon thereafter by the Cuban missile crisis. The general public worldwide held its breath, awaiting doom. Somehow, some way, we escaped. But films such as *Dr Strangelove* captured and reflected the fraught public mood. The nuclear narrative grew ever darker.

Meanwhile, on the sunnier side of the street, nuclear enthusiasts acclaimed the civil nuclear benefits promoted by US president Dwight Eisenhower as 'Atoms For Peace' - nuclear medicine, nuclear agriculture, nuclear industrial technology and especially nuclear electricity. Nuclear power would be, said Lewis Strauss of the AEC, 'too cheap to meter'. The convoluted history of civil nuclear power and how it was sold to the world is a story of nuclear politics at its most intense. A young British filmmaker called Vicki Lesley is now completing a documentary entitled *The Greatest Story Every Sold*, about nuclear public relations from the 1940s onwards - the official story and how it was promoted. The story, of course, is still unrolling. Just yesterday, at the House of Commons, I chaired the launch meeting for the 2015 edition of the *World Nuclear Industry Status Report*. It's now available online, and I highly recommend it - a hard-nosed authoritative survey of nuclear

reality, based entirely on official sources - what is actually happening, rather than the smoke and mirrors of nuclear hype.

For many years, a key theme of the official nuclear story was to insist that nuclear physics was an esoteric discipline that only the elite could understand - that nuclear matters were simply too complex for the ordinary citizen, that the rest of us should leave it to the experts. In 1976 Penguin published my book *Nuclear Power*, which I wrote in part to dispel that myth. Nuclear technology is no more technically complex than colour television: and everyone has an opinion about colour television and society, even without knowing how it works. When the book was in print it sold about 130 000 copies. The 1986 edition of the book came out a week before they blew up Chernobyl. It's available as a free download on my website archive, and until about six months ago it was being downloaded more than 2000 times a month.

Nuclear people were reconciled to public concern about nuclear weapons. From the 1960s onward, however, the rise of opposition to civil nuclear power took the nuclear people by surprise. Nuclear electricity was supposed to be the boon to humanity that offset the threat of the weapons. Nuclear people were deeply upset to have their ostensible boon looked on with suspicion, distrust and outright rejection by a widening swath of the general public. Into and throughout the 1970s, in a number of OECD countries, civil nuclear power drew more public opposition than nuclear weapons. Critics were challenging the official story about nuclear safety, about radioactive waste and even about nuclear economics, the true cost of nuclear power. But the challenge the nuclear people found most upsetting was the assertion that civil nuclear power, especially the intention to use plutonium as a fuel for fast breeder reactors, was aggravating the threat from nuclear weapons. Nuclear people were insistent that civil nuclear power had nothing whatever to do with weapons - despite the abundant evidence to the contrary.

In the popular mind and media, radioactive waste and safety were still key concerns. In 1979, when a film called *The China Syndrome* opened, the plot was based on the cover-up of a safety problem at a nuclear power plant. The nuclear industry was outraged, insisting that nothing of the kind could possibly happen. A month later came the accident at Three Mile Island. Nuclear people continued to insist that it was never as serious as the media made it out to be. Not for several years did we learn that most of the reactor core did melt, and that only a fluke kept the accident from being an unparalleled catastrophe.

Seven years later came Chernobyl. The International Atomic Energy Agency invited me to help write the official report. I waited in Vienna for a week, but the investigation took too long and I withdrew. I've always been relieved at that, because when the report was eventually published it was so anodyne that few outside the nuclear industry found it credible. Even after the appalling mess at Fukushima, which is still suppurating and could yet get even worse, the nuclear industry reiterates over and over its mantra that nuclear power is safe, cheap and essential to cope with climate change - and that of course it has nothing whatever to do with nuclear weapons.

I was the series advisor on the award-winning BBC series *Edge of Darkness*, still remembered as one of the high points of television drama. The industry hated it, because - even with the ghostly presence of Craven's murdered daughter Emma - the story was all too credible, the illicit plutonium obliterating the alleged boundary between nuclear power and nuclear weapons.

The home page of my website archive says 'We have been here before. The catch-phrases are exactly the same - energy crisis, supply security, environmental impact, fuel poverty, rocketing prices, resource depletion, the whole grim repertoire, and nuclear power the "solution". Unhappily,

a new generation of politicians, commentators and activists appears to know no history.

'Today's pronouncements and policies resemble uncannily those we struggled with and suffered from, not merely years but decades ago. The philosopher George Santayana put it bluntly: 'Those who cannot remember the past are condemned to repeat it'.

'Are we condemned? Can we remember, and learn? Against the odds I continue to hope.'

As nuclear politics, both civil and military, continues its ruthless and relentless assault on reality, those of us who see things differently have a much better story to tell - more honest and more hopeful. I for one am going to keep telling it.

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