

NUCLEAR MONITOR

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Editorial

Dear readers of the WISE/NIRS Nuclear Monitor,

In this issue, we pull together critical commentary about the new 'Pandora's Promise' pro-nuclear propaganda film. John LaForge from Nukewatch contributes two articles about inhuman radiation experiments. Charly Hultén writes about nuclear waste management problems in Sweden. We cover some developments in Japan – the UN Special Rapporteur's report, decontamination and waste disposal issues, and legal claims and compensation payments. The Nuclear News section includes items from Russia, the US, the UK and, globally, nuclear power's biggest ever one-year fall while solar PV and wind power expanded dramatically.

Nuclear Monitor is taking a short break while people in the Northern Hemisphere enjoy summer holidays. The next issue will be distributed on August 2.

Feel free to contact us if there are issues you would like to see covered in the Monitor.

Regards from the Nuclear Monitor editorial team
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'Pandora's promise' propaganda

Pandora's promise is a pro-nuclear film written and directed by Robert Stone, with a little help from billionaires Paul Allen and Richard Branson (www.pandoraspromise.com).

764.4319 Robert Stone says: "The film is anchored around the personal narratives of a growing number of leading former anti-nuclear activists and pioneering scientists." The film's website also asserts that nuclear power is "now passionately embraced by many of those who once led the charge against it."

In fact, not one of the film's cast was ever a "leading former anti-nuclear activist". Stone partnered with the right-wing, anti-environment Breakthrough Institute to produce the film and the institute's personnel feature prominently in the film.

Robert Kennedy Jr. generously describes the film as an "elaborate hoax". It's not elaborate. The film-makers and their cast claim objectivity and balance which the film clearly fails to deliver.

They claim the scientific high-ground even as they repeatedly bastardize science.

One critic suggests giving the film a miss and Stone responds by portraying the entire environment movement as authoritarian thought-police, saying they "use their positions of influence to determine what can and cannot be said about our predicament, to claim uncompromising ownership of the issue".

Stone writes glowingly about "people like me who care about the future" and are "open-minded enough to change their minds like I have done." In other words, if you oppose nuclear power, you have a closed mind and you don't care about the future. The film repeatedly ignores or misrepresents serious criticisms of nuclear power. Key

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problems – such as nuclear power’s negative economic learning curve, and WMD proliferation – are all but ignored.

Claims that the script has been carefully fact-checked are laughable. To cite one example – of dozens – a contributor says that Greenpeace claims one million deaths from Chernobyl. A few minutes research gives the lie to that claim – a Greenpeace-commissioned scientific study estimates 93,000 cancer deaths from Chernobyl, possibly up to 160,000 deaths from all other causes.

Gushing praise for Stone’s propaganda can easily be found on the internet so here we pull together some critical commentary.

Physicist Dr Ed Lyman, senior scientist with the Union of Concerned Scientists, writes:

By oversimplifying the issues, trivializing opposing viewpoints and mocking those who express them, and selectively presenting information in a misleading way, [Pandora’s Promise] serves more to obfuscate than to illuminate. As such, it adds little of value to the substantive debate about the merits of various energy sources in a carbon-constrained world.

“Pandora’s Promise,” taking a page from late-night infomercials, seeks to persuade via the testimonials of a number of self-proclaimed environmentalists who used to be opposed to nuclear power but have now changed their minds, including Stewart Brand, Michael Shellenberger, Gwyneth Cravens, Mark Lynas and Richard Rhodes. The documentary tries to make its case primarily by impressing the audience with the significance of the personal journeys of these nuclear power converts, not by presenting the underlying arguments in a coherent way.

This strategy puts great emphasis on the credibility of these spokespeople. Yet some of them sabotage their own credibility. When Lynas says that in his previous life as an anti-nuclear environmentalist he didn’t know that there was such a thing as natural background radiation, or Michael Shellenberger admitted to once taking on faith the claim that Chernobyl caused a million casualties, the audience

may reasonably wonder why it should accept what they believe now that they are pro-nuclear.

My hand got tired trying to jot down all the less-than-half truths put forth by the talking heads in the film, which could have benefited from some fact-checking. ... One after another, the film’s interviewees talk about how shocked they were to read the 2005 report of the Chernobyl Forum – a group under of U.N. agencies under the auspices of the International Atomic Energy Agency and the governments of Russia, Belarus and Ukraine – and discover that “the health effects of Chernobyl were nothing like what was expected.” The film shows pages from that report with certain reassuring sentences underlined.

But there is no mention of the fact that the Chernobyl Forum only estimated the number of cancer deaths expected among the most highly exposed populations in Ukraine, Belarus and Russia and not the many thousands more predicted by published studies to occur in other parts of Europe that received high levels of fallout. Nor is there mention of the actual health consequences from Chernobyl, including the more than 6,000 thyroid cancers that had occurred by 2005 in individuals who were children or adolescents at the time of the accident. And the film is silent on the results of more recent published studies that report evidence of excesses in other cancers, as well as cardiovascular diseases, are beginning to emerge (www.ncbi.nlm.nih.gov/pmc/articles/PMC3107017).

Insult is then added to injury when Lynas then accuses the anti-nuclear movement of “cherry-picking of scientific data” to support their claims. Yet the film had just engaged in some pretty deceptive cherry-picking of its own. Lynas then goes on to assert that the Fukushima accident will probably never kill anyone from radiation, also ignoring studies estimating cancer death tolls ranging from several hundred to several thousand. The Japanese newspaper Asahi Shimbun, which obtained a copy of a draft report by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), revealed that the report estimated a collective whole-body dose of 3.2 million person-rem to the

population of Japan as a result of the accident: a dose that would cause in the range of 1,000-3,000 cancer deaths. ...

There are also scenes in the film that are downright offensive, such as showing impoverished, barefoot children wandering through slums with the clear implication that nuclear power is all that is needed to raise them out of poverty. The biggest failing of the film, however, is the lack of any discussion of what the real obstacles to an expansion of nuclear energy are and what would need to be done to overcome them. In fact, nuclear power’s worst enemy may not be the anti-nuclear movement, as the film suggests, but rather nuclear power advocates whose rose-colored view of the technology helped create the attitude of complacency that made accidents like Fukushima possible. Nuclear power will only be successful through the vision of realists who acknowledge its problems and work hard to fix them – not fawning ideologues like filmmaker Robert Stone and the stars of “Pandora’s Promise.”

– Ed Lyman, 12 June 2013, ‘Movie Review: Put “Pandora’s Promise” Back in the Box’

<http://allthingsnuclear.org/movie-review-put-pandoras-promise-back-in-the-box>

Nuclear power supporter Severin Borenstein writes:

I was surprised at the very narrow bite of the nuclear power issue that the movie takes. It is basically a movie about nuclear power’s past safety record and waste management. On that score it is fairly convincing. ... What left me less than completely persuaded on safety is the fact that there are far more thoughtful critics and reasoned concerns about nuclear power safety, including access of terrorists to plants and to fuels. This is particularly true if we are talking about building plants in countries with less stable governments, as the movie suggests we should. The movie says only a bit about nuclear proliferation among national governments and essentially nothing about terrorism. ...

My disappointment with the film is that beyond safety, it has little to say. There are two fleeting references to

cost that suggest vaguely that it is cost competitive. It isn't. In the discussion after the movie, Michael Shellenberger agreed with me that nuclear power can't beat coal or natural gas today. The movie briefly beats up solar and wind for being intermittent, but that's probably less than a minute and there is no reference to storage possibilities or demand adjustment to address intermittency."

– Severin Borenstein, 21 June 2013, 'Pandora's Promises - Kept and Unkept: Examining the Nuclear Documentary' <http://theenergycollective.com/severin-borenstein/239851/pandora-s-promises-kept-and-unkept>

Andrew Revkin writes:

Serious engagement with critics of nuclear power – whether on economics, industry practices or health and environmental issues – is absent. The film also avoids discussing the high costs and logistical and policy hurdles to adding substantially to the country's, or world's, existing fleets of operating nuclear plants. The scale and costs required to cut into coal use using any technology – nuclear, wind, solar or otherwise – is incredibly daunting.

– Andrew Revkin, 13 June 2013, 'A Film Presses the Climate, Health and Security Case for Nuclear Energy' <http://dotearth.blogs.nytimes.com/2013/06/13/a-film-presses-the-climate-and-security-case-for-nuclear-energy/>

Mark Hertsgaard writes in The Nation:

The public and the overwhelming majority of environmental groups continue to reject nuclear power. Of the ten leading environmental organizations in the US – the Sierra Club, Greenpeace, The National Wildlife Federation, The Natural Resources Defense Council, Defenders of Wildlife, Environmental Defense, The National Audubon Society, The Nature Conservancy, The Wilderness Society, The World Wildlife Fund – not one supports nuclear power, despite the threat of climate change.

– Mark Hertsgaard, 10 June 2013, 'Pandora's Myths vs. the Facts' www.thenation.com/article/174740/pandoras-myths-vs-facts

Joe Romm writes:

The five converts featured in Pandora's Promise speak for themselves as individuals; they don't represent large environmental organizations – or small ones, for that matter. Gwyneth Cravens and Richard Rhodes don't even appear to have track records as activists; Cravens is a fiction writer. Stewart Brand helped found the Whole Earth Catalog, but that was over forty years ago; since then, he's spent much of his time as a consultant to corporations, including some in the energy sector. Shellenberger is a PR man who, as he says in the film, used to consult for environmental groups but no longer does. ... Shellenberger has dedicated himself to spreading disinformation about Gore, Congressional leaders, Waxman and Markey, leading climate scientists, Al Gore again, the entire environmental community and anyone else trying to end our status quo energy policies, including me. Heck he even went after Rachel Carson! ... The only bona fide activist is Lynas, who wrote a fine book about climate change, Six Degrees: Our Future on a Hotter Planet."

– Joe Romm, 17 June 2013, 'Pandora's Promise: Nuclear Power's Trek From Too Cheap To Meter To Too Costly To Matter Much' <http://thinkprogress.org/climate/2013/06/17/2158951/pandoras-promise-nuclear-powers-trek-from-too-cheap-to-meter-to-too-costly-to-matter-much/>

Kennette Benedict writes in the Bulletin of the Atomic Scientists:

To be sure, there is nothing wrong with changing your mind. In fact, there is much to admire in those who recognize altered circumstances, integrate fresh information, and come to a new judgment. What is disingenuous about Pandora's Promise is the way the new judgment is conveyed. The film mocks groups that continue to protest nuclear power, treating one-time colleagues as extremists and zealots. An audience discussion after a preview at the University of Chicago made it clear I was not the only one who sensed the self-righteous tone of the newly converted in the film's narrative. In the end, by dismissing the protestors and failing to engage them in signifi-

cant debate about the pros and cons of nuclear energy, the film undermined its own message. ...

Solutionists lurch in fits and starts from one extreme position to another, from one answer to the next, failing to understand that the problems we have created are as complex as the societies we live in. We are disrupting the Earth's atmosphere through a combination of carbon-emitting technologies, population growth, overconsumption in industrial societies, and settlement patterns that have cleared huge forests that filter carbon dioxide out of the atmosphere. No single technological fix is likely to "solve" the problem of climate change.

A more powerful approach to this complex threat to humanity would be to film a fact-based, passionate debate that explored the alternatives, trade-offs, and consequences of various energy options. Such an exploration might move us from the usual politics of zealotry to new habits of thought, and perhaps to new forms of action based on all the facts.

– Kennette Benedict, 10 June 2013, 'Pandora's false promise', <http://thebulletin.org/pandoras-false-promise>

Manohla Dargis writes in the New York Times:

"Pandora's Promise" is as stacked as advocate movies get. ... In brief – or so the movie's one-sided reasoning goes – everything that anti-nuclear energy activists and skeptics have thought about the issue is wrong. Decades of politically and ideologically driven fear-mongering and misinformation have led to its demonization when it could be our salvation. Drawing on original interviews, archival materials, computer animations and even, d'oh, "The Simpsons," Mr. Stone builds his case seamlessly but leaves no room for dissent, much less a drop of doubt. "To be anti-nuclear," another of his experts, the journalist Richard Rhodes, says, "is basically to be in favor of burning fossil fuel."

Certainly there's an environmental case to be made for nuclear energy as an alternative to fossil fuels, which is exactly what some activists and journalists have been exploring for years.

But you need to make an argument. A parade of like-minded nuclear-power advocates who assure us that everything will be all right just doesn't cut it.

– Manohla Dargis, 11 June 2013, 'Pandora's Promise' Advocates Nuclear Energy,
<http://movies.nytimes.com/2013/06/12/movies/pandoras-promise-advocates-nuclear-energy.html>

David Roberts writes in Grist:

There is no budding environmentalist movement for nukes. Ever since I started paying attention to "nuclear renaissance" stories about a decade ago, there's always been this credulous, excitable bit about how enviros are starting to come around. The roster of enviros in this purportedly burgeoning movement: Stewart Brand, the Breakthrough Boys, and "Greenpeace cofounder Patrick Moore," who has been a paid shill for industry for deca-

des (it sounds like the Pandora folks were wise enough to leave him out). More recently George Monbiot and Mark Lynas have been added to the list. This handful of converts is always cited with the implication that it's the leading edge of a vast shift, and yet ... it's always the same handful.

Anyway, if environmentalists are as omni-incompetent as Breakthrough has alleged all these years, why the eagerness to recruit them? I get the media appeal of "even hippies know the hippies are wrong," but to me it smells of flop sweat.

In the movie, Shellenberger says, "I have a sense that this is a beautiful thing ... the beginning of a movement." I fear he has once again mistaken the contents of his navel for the zeitgeist.

...

To hear supporters tell it, within a few years you'll have a reactor in your

backyard that consumes nuclear waste from past reactors and emits nothing but fresh air, clean water, and the scent of jasmine. There are, of course, lots of folks who think the promise of new reactors is overblown.

– David Roberts, 14 June 2013, 'Some thoughts on "Pandora's Promise" and the nuclear debate',
<http://grist.org/climate-energy/some-thoughts-on-pandoras-promise-and-the-nuclear-debate/>

Meanwhile, Pandora's Promise has bombed at the box office. In its first week of release, it ranked 46th of the top 50 movies, earning only about \$32,000--perhaps 3500 paid viewers. And by its second weekend, it no longer even cracked the top 50. A deserved fate.

Inhuman radiation experiments

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This year marks the twentieth anniversary of the declassification of top secret studies, done over a period of 60 years, in which the US conducted 2,000 radiation experiments on as many as 20,000 vulnerable US citizens.[1]

764.4320 Victims included civilians, prison inmates, federal workers, hospital patients, pregnant women, infants, developmentally disabled children and military personnel – most of them powerless, poor, sick, elderly or terminally ill. Eileen Welsome's 1999 exposé *The Plutonium Files: America's Secret Medical Experiments in the Cold War* details "the unspeakable scientific trials that reduced thousands of men, women, and even children to nameless specimens." [2]

The program employed industry and academic scientists who used their hapless patients or wards to see the immediate and short-term effects of radioactive contamination – with everything from plutonium to radioactive arsenic. [3] The human subjects were mostly poisoned without their

knowledge or consent. An April 17, 1947 memo by Col. O.G. Haywood of the Army Corps of Engineers explained why the studies were classified. "It is desired that no document be released which refers to experiments with humans and might have adverse effect on public opinion or result in legal suits." [4]

In one Vanderbilt U. study, 829 pregnant women were unknowingly fed radioactive iron. In another, 188 children were given radioactive iron-laced lemonade. From 1963 to 1971, 67 inmates in Oregon and 64 prisoners in Washington had their testicles targeted with X-rays to see what doses made them sterile. [5] At the Fernald State School in Massachusetts, mentally retarded boys were fed radioactive iron and calcium but consent forms sent to

their parents didn't mention radiation. Elsewhere, psychiatric patients and infants were injected with radioactive iodine. [6]

The vast testing program went ahead in spite of a warning to use chimpanzees instead of humans, because, as a top radiation biologist wrote at the time, the experiments might have "a little of the Buchenwald touch," comparing them to the Nazis' torture of concentration camp inmates. [7]

A rare public condemnation came from Clinton Administration Energy Sec. Hazel O'Leary in 1994, who confessed being aghast at the conduct of the scientists. She told *Newsweek*: "I said, 'Who were these people and why did this happen?' The only thing I could think of was Nazi Germany." [8] None of the victims were provided follow-on medical care.

Scientists knew from the beginning of the twentieth century that radiation

can cause genetic and cell damage, cell death, radiation sickness and even death. A Presidential Advisory Committee on Human Radiation Experiments was established in 1993 to investigate charges of unethical or criminal action by the experimenters. Its findings were published by Oxford U. Press in 1996 as *The Human Radiation Experiments*.

The abuse of X-radiation “therapy” was also conducted throughout the 1940s and ‘50s. Everything from ringworm to tonsillitis was “treated” with X-radiation because the long-term risks were unknown or considered tolerable. Children were routinely exposed to alarmingly high doses of radiation from devices like “fluoroscopes” to measure foot size in shoe stores.[9] Nasal radium capsules inserted in nostrils, used to attack hearing loss, are now thought to be the cause of cancers, thyroid and dental problems, immune dysfunction and more.[10]

Experiments spread cancer risks far and wide

In large scale experiments as late as 1985, the Energy Department deliberately produced reactor meltdowns which

spewed radiation across Idaho and beyond.[11] The Air Force conducted at least eight deliberate meltdowns in the Utah desert, dispersing 14 times the radiation released by the partial meltdown of Three Mile Island in Pennsylvania in 1979.[12]

The military even dumped radiation from planes and spread it across wide areas around and downwind of Oak Ridge, Tenn., Los Alamos, New Mexico, and Dugway, Utah. This “systematic radiation warfare program,” conducted between 1944 and 1961, was kept secret for 40 years. (“Secret U.S. experiments in ‘40s and ‘50s included dropping radiation from sky,” St. Paul Pioneer, Dec. 16, 1993) “Radiation bombs” thrown from USAF planes intentionally spread radiation “unknown distances” endangering the young and old alike. One such experiment doused Utah with 60 times more radiation than escaped the Three Mile Island accident, according to Sen. John Glen, D-Ohio who released a report on the program 20 years ago. [13]

The Pentagon’s 235 above-ground nuclear bomb tests, and the atomic bombings of Hiroshima and Nagasaki,

are not officially listed as radiation experiments. Yet between 250,000 and 500,000 U.S. military personnel were contaminated during their compulsory participation in the bomb tests and the post-war occupation of Japan.[14]

Documents uncovered by the Advisory Committee show that the military knew there were serious radioactive fallout risks from its Nevada Test Site bomb blasts. The generals decided not to use a safer site in Florida, where fallout would have blown out to sea. “The officials determined it was probably not safe, but went ahead anyway,” said Pat Fitzgerald a scientist on the committee staff.[15] Dr. Gioacchino Failla, a Columbia Univ. scientist who worked for the AEC, said at the time, “We should take some risk ... we are faced with a war in which atomic weapons will undoubtedly be used, and we have to have some information about these things.”[16]

With the National Cancer Institute’s 1997 finding that all 160,000 million US citizens (in the country at the time of the bomb tests) were contaminated with fallout, it’s clear we did face war with atomic weapons – our own.

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6. “48 more human radiation experiments revealed, Minneapolis *StarTribune*, June 28, 1994; *Milwaukee Journal*, June 29, 1994
7. Keith Schneider, “1950 Note Warms About Radiation Test,” *New York Times*, Dec. 28, 1993
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16. Philip J. Hilts, *Ibid*

This article appeared earlier in CounterPunch and TruthOut.

Transuranics, mercury and banned fluids discovered in Swedish nuclear waste repository

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The Spent Fuel Repository (SFR) at Forsmark is the only final repository for nuclear waste in operation in Sweden today. Intended to receive short-lived nuclear isotopes, SFR has long been criticised for both its location and its design.

764.4321 Opened in 1988, it is a child of 1950s and 1960s thinking. Only 60 metres beneath the sea on Sweden's Baltic coast, the repository was created to leak its contents into the Baltic, which Swedish nuclear regulatory authorities still regard as an "appropriate recipient".

One of the facilities that has deposited waste at SFR is a waste treatment facility at Studsvik, another coastal site. Studsvik, too, has been harshly criticised for the effluents it flushes into the sea. It is reputed to be the number one source of caesium pollution to Baltic waters. Studsvik AB has also been a concern on dry land – time and again authorities have urged the company to improve the documentation of its waste management.

In February of this year, some 7,000 metal drums of waste stored at Studsvik were examined to determine their contents. The drums in question contain waste from the early years of Sweden's nuclear industry, when the aim was to develop a nuclear deterrent. It is, in other words, waste from weapons research. They are stored on site, pending the creation of SFL – a special repository for long-lived intermediate-level waste.

There is no proper record of the contents, and the drums are not easily examined. Deep inside several consecutive drums is a concrete block, which isolates whatever needed to be put away. An examination carried out in February, which combined gamma radiation readings and X-ray inspection of the drums, turned up a number of unpleasant surprises: fluids (roughly five cubic metres distributed over some 2000 of the drums, some of which is presumed to be nitric acid), mercury

(an estimated 65 kg), lead, and transuranics, including an estimated 300 g plutonium, perhaps twice that amount according to nuclear chemist Christian Ekberg from Chalmers Technical University. Fluids, no matter what kind, are banned because they convey radioactivity so efficiently.

These finds prompted suspicions about the 2,844 drums from Studsvik that, presumed to contain only short-lived isotopes, are already stored in SFR. In early May it was determined that all the Studsvik waste, including the drums in the SFR repository, will have to be X-rayed, sorted and/or treated and then repackaged. Some materials will need to be isolated in blocks of concrete. These various operations will require a new facility.

Retrieval of the waste from SFR, the new facility, and X-ray processing will each be costly. In Sweden the processing and management of nuclear waste is financed via a surcharge on electricity. There is also a specific surcharge of 0.002 euros/kWh to cover the costs of waste from Studsvik. In other words, users of electricity will be footing the bill for decades of non-chalance on the part of the nuclear industry.

Swedish Radiation Safety Authority

The discovery raises a number of issues relating to Swedish nuclear protection philosophy. Both the shallow SFR repository and the very profitable reprocessing plant at Studsvik have their basis in how the regulatory authority, the Swedish Radiation Safety Authority (SSM), goes about assessing the environmental consequences of nuclear facilities. The starting point in SSM's approach is the number

of human beings that may come in harm's way as the result of the activity in question.

Sweden is a big country with a small population (roughly 9 million). Large expanses of the country are very sparsely populated. Furthermore, it is difficult to demonstrate how pollution of the Baltic Sea affects human health. Thus, SSM may be more generous in its estimation of the amount of radiation that poses a risk. A case in point: one of the most widely criticised design features of the SFR repository is that it is planned to be filled with sea water once the last drum of waste is in place. There is no doubt that the repository will leak – "from Day One" in the words of Anders Siebert at SSM at a recent hearing. Thus "dilute and disperse" – normally a fallback strategy when the first rule, "concentrate and contain", has failed – is standard practice in Sweden.

In an international context, this approach to human health consequences is also the key to the competitive advantage a company like Studsvik enjoys – it can process scrap imported from countries like Germany, where stricter regulations might render the processes more costly or rule them out entirely.

We should also bear in mind the evolution that has taken place in the field of radiation protection. Professor Jonas Anshelm of Linköping University has analysed ideas about nuclear waste in Sweden in recent decades. Ideas about what is to be considered 'waste', the amount of waste involved, and how long it needs to be isolated, Anshelm says, have changed over the years. "In the 1960s it was encased in concrete and dumped into the sea. In the 1970s, the industry's experts assured us that the waste would fit into a chamber the size of a sports hall. In the 1960s, storage for 100 years was considered sufficient, but today the consensus among

experts is that it needs to remain isolated for over a hundred-thousand years," Anshelm points out. Presumptions have changed radically, and they will most surely continue to change, he concludes.

Anshelm is seconded by Sven Odéus, spokesman for Svafo AB, the company in charge of the Studsvik waste. An investigative journalist for Swedish radio asked Odéus how the debacle could arise:

"I think it was just a case of poor management. I don't think it was a deliberate act."

"You mean, they were just careless?"

"Well, I wouldn't say 'careless'. It was the thinking of the day."

(Sveriges Radio, Klotet, 6 May 2013.)

The reporter notes that the most recent drums in the Studsvik collection were packed in 1997.

Questions remain: Has the predominant thinking within the industry's waste management company, SKB, evolved? And, if not, is there a will on the part of the regulator to make it evolve?

Power failure at Forsmark

May 30 – one of the Forsmark reactors in Sweden was taken off line for a scheduled check-up and repairs. Shortly thereafter electrical power supply to the reactor went dead, and no emergency back-up power from the mains kicked in. Fortunately, the control room staff was able to start up the diesel generators manually.

The operator assured the public that when offline, a reactor can go without cooling several days before the situation poses a threat. Still, the incident

demanded an explanation, and it turns out that the emergency back-up power supply kicks in automatically only when the reactor is online. Whether the system will be automated even during offline periods has yet to be decided.

The strange thing is that the power supply systems were overseen as recently as 2006. Then, power failure deactivated several safety functions while the reactor in question was online. Several experts spoke of a "20 minutes to meltdown" incident. That

may be the reason why the regulatory agency SSM has classed this recent failure as a "Class 1" incident. Permission to restart the reactor will be granted only after a thorough report from the operator. The power supply to other reactors at the station are now under review, as well.

Upsala Nya Tidning, 31 May 2013; WISE Sweden

US warned Kodak, not us, about radioactive fallout

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In the 1950s and '60s, the Atomic Energy Commission (AEC) doused the United States with thyroid cancer-causing iodine-131 – and 300 other radioisotopes – by exploding atomic and hydrogen bombs above ground in Nevada. To protect the dirty, secretive bomb-building industry, the government chose to warn the photographic film industry about the radioactive fallout patterns, but not the public.

764.4322 In 1951, Eastman Kodak Co. had threatened a federal lawsuit over the nuclear fallout that was fogging its bulk film shipments. Film was not packed in bubble wrap then, but in corn stalks that were sometimes being fallout-contaminated. By agreeing to warn Kodak, etc., the AEC and the bomb program avoided the public uproar – and the bomb testing program's possible cancellation – that a

lawsuit would have precipitated. The settlement kept the deadliness of the fallout hidden from the public, even though the government well knew that fallout endangered all the people it was supposed to be defending.

This staggering revelation was heralded on September 30, 1997, in the *New York Times* headline, "U.S. Warned Film Plants, Not Public, About

Nuclear Fallout." The article began, "(W)hile the government reassured the public that there was no health threat from atmospheric nuclear tests. ..." The fallout's radioactive iodine-131 caused thyroid doses to virtually all 160 million Americans.

According to the Institute for Energy and Environmental Research in Takoma Park, Md., which discovered the cover-up, children were especially affected and received higher doses because they generally consumed more milk than adults and since their thyroids are smaller and growing more rapidly. The "milk pathway" moves radio-iodine from grass, to cows, to milk with extreme efficiency – a fact

known to the government as early as 1951. Ingested iodine-131 concentrates in the thyroid gland where it can cause cancer. Doses to children averaged 6 to 14 rads (0.06–0.14 Gy), with some as high as 112 rads (1.12 Gy). Before 1997, the government claimed that thyroid doses to children were 15 to 70 times less.

Radioactive fallout spread to every corner of the US

My friend Steve O'Neil of Duluth, Minn., who was born in 1951, has been a public-spirited political activist all of his adult life, an advocate for the homeless and a campaigner against the causes of homelessness. As a St. Louis County commissioner in his third term, Steve made headlines by announcing that he has been attacked by an aggressive form of thyroid cancer. Steve is not alone in his affliction – more than 60,000 thyroid cancers will be spotted this year in the US. Tens of thousands of them have been caused by our government's nuclear weapons establishment.

The National Cancer Institute disclosed in 1997 that 75,000 thyroid cancer cases can be expected in the U.S. from just 90 – out of 235 – above-ground bomb tests and that 10% of them will be fatal. That year, the cancer institute said, about 70% of the thyroid cancers caused by iodine-131 fallout from those 90 tests had not

yet been diagnosed but would appear years or decades later.

Its 14-year study said the 90 bomb blasts produced more than 100 times the radioactive iodine-131 than the government had earlier claimed. The cancer institute estimated that the tests dispersed “about 150 million curies of iodine-131, mainly in the years 1952, 1953, 1955 and 1957.” The study reported that all 160 million people in the country at the time were exposed to iodine-131 (the only isotope it studied out of more than 300 dispersed by the blasts.) Children under 15, like Steve O'Neil, were particularly at risk.

High doses of fallout were spread nationwide. Wind patterns and local rainfall caused “hot spots” from Montana and Idaho to South Dakota, Minnesota, and Missouri and beyond.

In 1962, according to IEER, officials in Utah and Minnesota diverted possibly contaminated milk from the market when iodine-131 levels exceeded radiation guidelines set by the Federal Radiation Council. The council reacted harshly and declared that it did “not recommend such actions.” It also announced that its radiation guidelines should not be applied to bomb test fallout because “any possible health risk which may be associated with exposures even many times above the guide levels would not result in a

detectable increase in the incidence of disease.” IEER's scientists condemned this fabulously implausible assurance, writing: “Since thyroid cancers can develop many years after radiation exposure and are therefore not immediately detectable, this reassurance was highly misleading.”

Thyroid cancers are tip of bomb test cancer iceberg

The cancer institute's 1997 study said about 16,000 cases of thyroid cancer were diagnosed in the U.S. annually, and that 1,230 would die from the disease. It was a gross understatement.

Today it reports that 60,220 cases of thyroid cancer will be diagnosed in the US this year, and that 1,850 of them will be fatal.

The UN Scientific Committee on the Effects of Atomic Radiation says that iodine-131 doses comprise only 2% of the overall radiation dose from weapons testing. Ninety-eight percent of the fallout dose is from 300 other isotopes produced by the bomb. It is not idle speculation to suggest that the cancer pandemic afflicting the U.S. has been caused by our government's deliberately secret and viciously reckless weapons program.

This article appeared earlier in the Las Vegas Review Journal.

Fukushima fallout: updates from Japan

UN special rapporteur's report

In November 2012, the UN Human Rights Council sent Special Rapporteur Anand Grover to Japan to assess the situation in the aftermath of the Fukushima disaster.

TEPCO and the Japanese government. For example:

- It says that by nationalising TEPCO, the government “arguably helped TEPCO to effectively avoid accountability and liability for damages” from the nuclear crisis.
- It criticises TEPCO for its “attempts to reduce compensation levels and delay settlement” through a complicated and difficult compensation process, as well as failure to protect workers from radiation exposure.

- It criticises the government for failing to protect children, the elderly, and those with disabilities from the disaster, as well as inadequate use of the country's System for Prediction of Environment Emergency Dose Information, which led to some residents being evacuated to areas directly in the path of the radiation plume in the days following the March 11 disaster.

The report urges Japan to avoid repopulating contaminated areas until radiation levels reach one millisievert per year. It stresses that epidemiological experts “conclude that there is no low-threshold limit for excess radiation risk to non-solid cancers, such as

leukemia.” Currently, Japan allows residents to return to their homes when radiation levels reach 20 millisieverts per year.

Japanese government officials were more concerned about the economic implications of a massive evacuation and the costs of compensating victims after the Fukushima disaster than they were about residents' safety, according to a new exposé by the Asahi Shimbun. Records from government meetings conducted in December 2011, during which attendees were trying to decide the radiation level at which residents could safely return to their homes, show that

then Nuclear Crisis Minister Goshi Hosono fought to establish the annual radiation level at which residents could safely return at five millisieverts. However, other attendees insisted on a 20 millisievert per year limit.

UN Special Rapporteur's report:
tinyurl.com/pxwqub4

Beyond Nuclear analysis,
'Can nuclear power ever comply with the human right to health?'
tinyurl.com/beyondfuku

Asahi Shimbun, 25 May 2013, 'Strict radiation reference levels shunned to stem Fukushima exodus'

Asahi Shimbun, 26 May 2013, 'U.N. expert urges help for Japan's nuclear victims'

Greenpeace Nuclear Reaction Weblog, Fukushima Nuclear Crisis Update for May 23rd to May 28th, 2013
www.greenpeace.org/international/en/news/Blogs/nuclear-reaction

Decontamination and waste disposal

Despite public promises by Prime Minister Shinzo Abe to complete decontamination work in Fukushima Prefecture by March 2014, which would reduce radiation exposure levels there to one millisievert per year or less, Japan's government recently informed municipal officials that they will likely not meet their stated deadline as a result of local opposition to hosting nuclear waste storage sites. Officially, the government is still denying any change to the timeline. Japan's decontamination schedule is already far behind schedule – cleanup efforts have not even begun in five of 11 municipalities that have been declared evacuation zones. Moreover, the Environment Ministry has told local officials that areas that have already been decontaminated but where radiation levels remain high will not be decontaminated again, raising questions about if or when residents will ever be able to safely return.

Asahi Shimbun, 16 June 2013, 'Government secretly backtracks on Fukushima decontamination goal'
ajw.asahi.com/article/0311disaster/fukushima/AJ201306160022

Greenpeace Nuclear Reaction Weblog – Fukushima Nuclear Crisis Update for

June 14th to June 17th, 2013
www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/

Legal claims and compensation payments

TEPCO's legal troubles continue to mount as yet another group filed suit against it. Family members of hospital patients and elderly nursing home residents who died in the process of evacuation, or because staff were unavailable to care for them, are suing the utility for approximately US\$300,000 each. The families say that they care less about collecting damages and more about learning the root causes of the Fukushima disaster. However, the case could have far-reaching legal implications for TEPCO if it is decided in favour of the plaintiffs. More than 200 people were stuck in hospitals and nursing facilities following the nuclear accident, and 50 of those died. (*NHK World; Greenpeace Nuclear Reaction Weblog, Fukushima Update 7–10 June 2013*)

In late May, the Namie municipal government announced that it will sue TEPCO on behalf of over 11,000 residents for psychological suffering. Although TEPCO is already paying victims 1,000 yen per month, Namie officials want to increase that amount to 3,500 yen. (*The Mainichi, 3 June 2013, 'Fukushima village residents to receive new compensation over mental damage'*)

The Japanese government is now considering suing TEPCO. So far, the government has paid 16.5 billion yen (US\$169 million) in decontamination costs. Japanese law requires that the government pay those costs initially, and then be reimbursed by the utility. More than two and half years after the nuclear disaster first began, however, TEPCO has not paid any of the costs. (*Kyodo News, 1 June 2013, 'Gov't eyes suing TEPCO over unpaid decontamination costs'*)

TEPCO is again under fire for failure to pay adequate compensation to Fukushima prefectural and local governments that were forced to cover costs of damage, decontamination, evacuation, and other losses. As of April 30, claims total 46.64 billion yen (US\$478 million), with further claims expected, but TEPCO has only paid 5.2 billion yen (US\$50 million). Some local

leaders are threatening to sue, complaining that the utility has been unresponsive to their repeated requests for payment. "No matter what we say, we get no reply," said Takanori Seto, the mayor of Fukushima City. "We'll file a lawsuit." (*Japan News, 18 June 2013, 'TEPCO slow to pay Fukushima governments' compensation'*)

Japan's Nuclear Damage Claim Dispute Resolution Center has made two judgments that could have significant impact on TEPCO's obligations. In the first case, the Center ruled that TEPCO must pay a group of 180 residents from the Nagadoro District of litate 500,000 yen (around US\$5,000) for emotional distress from high levels of radiation exposure. Pregnant women and children under 18 at the time of the accident were awarded one million yen each. People from that area were not told to evacuate until a month after the nuclear crisis first began to unfold, increasing their radiation exposure. Experts say that the case is sure to encourage other municipalities in similar circumstances to follow suit. (*Asahi Shimbun, 3 June 2013, 'Consolation money to place additional financial burden on TEPCO'*)

In the second case, TEPCO agreed to compensate to the family of a farmer from Sukagawa, who committed suicide after learning that he would be forced to stop selling cabbage from his organic farm. He had worked on the farm for 30 years. TEPCO eventually agreed to pay over 10 million yen (US\$100,000) after the Nuclear Damage Claim Dispute Resolution Center intervened. Company officials continue to refuse to apologise to the man's family. (*The Mainichi, 3 June 2013, 'Fukushima family, TEPCO reach redress deal over farmer's suicide'*)

Fukushima films

A number of independent films have been produced recounting personal stories from Japan's March 2011 triple-disaster and its aftermath. These websites provide more information:

Nuclear Nation: nuclearnation.jp/en

Surviving Japan:
survivingjapanmovie.com

Pray for Japan:
prayforjapan-film.org

Ian Thomas Ash:
www.documetingian.com

The Tsunami and the Cherry Blossom:

thetsunamiandthecherryblossom.com
The Land of Hope (trailer):
www.youtube.com/watch?v=XPv-3BX39dPk

Himizu:

thirdwindowfilms.com/films/himizu
Fukushima: Memories of the Lost Landscape:
www.somakanka.com/eng.html

Kalina's Apple, Forest of Chernobyl:

kalina-movie.com

Nuclear News

Nuclear power suffers biggest ever one-year fall

Nuclear power generation suffered its biggest ever one-year fall in 2012. International Atomic Energy Agency data shows that nuclear power plants around the world produced a total of 2,346 TWh in 2012 – 7% less than in 2011, and the lowest figure since 1999. Compared to the last full year before the Fukushima accident, 2010, the nuclear industry produced 11% less electricity in 2012.

The main reasons were that almost all reactors in Japan were off-line for the full calendar year, and the permanent shut-down of eight reactors in Germany. Other issues included problems for Crystal River, Fort Calhoun and the two San Onofre units in the USA which meant they produced no power, and Belgium's Doel 3 and Tihange 2 reactors which were out of action for half of the year.

Three new reactors started up during 2012 – two in South Korea and one in China. In Canada, two older reactors came back into operation after refurbishment. This new capacity totalled 4,501 MWe, outweighing the retirements of the UK's Oldbury 1 and Wylfa 2, and Canada's Gentilly 2, which between them generated 1,342 MWe. Across the rest of the global fleet, uprates added about 990 MWe in new capacity. So total increased capacity was 4,501 + 990 – 1,342 = 4,149 MWe, a little over 1%.

The uranium spot price fell to US\$39.75 / lb U3O8 on June 11, falling below \$40.00 for the first time since March 2006.

At the end of 2012, world total capacity of solar photovoltaic generation reached 100 GWe, with 30.5 GWe installed in 2012 alone. There is about 2.55 GWe of concentrating solar power capacity worldwide, three quarters of

this in Spain. Wind power soared in 2012 with a new record for installations – 44 GW of new capacity worldwide. Total capacity exceeds 280 GW, with plants operating in more than 80 countries. China leads the world with 75 GW of wind power capacity.

World Nuclear News, 20 June 2013, 'Nuclear power down in 2012'
www.world-nuclear-news.org/NN_Nuclear_power_down_in_2012_2006131.html

Ana Komnenic, 12 June 2013, 'Uranium hits seven-year low'
www.mining.com/uranium-hits-seven-year-low-30875

REN21 Renewables Global Status Report, 2013
www.ren21.net

J. Matthew Roney, 2 April 2013, 'Wind Power'
www.earth-policy.org/indicators/C49/wind_power_2013

Fines and fire in the UK

The nuclear company Sellafield Ltd has been fined 700,000 pounds and ordered to pay more than 72,635 pounds costs for sending bags of radioactive waste to a landfill site. The bags, which contained contaminated waste such as plastic, tissues and clothing, should have been sent to a specialist facility that treats and stores low-level radioactive waste, but "significant management and operational failings" led to them being sent to Lillyhall landfill site in Workington, Cumbria. This breached the conditions of the company's environmental permit and the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations. The mistake was only discovered by chance following a training exercise on the faulty monitoring equipment on April 20,

and in the coming days the bags were recovered from the Lillyhall landfill site and dispatched to the Drigg radioactive waste dump. [1,2]

An investigation has been launched into an incident at Sellafield's THORP reprocessing plant which occurred on May 14. The incident involved mistaking two chemicals, formaldehyde and hydroxylamine. Cumbrians Against a Radioactive Environment spokesman Martin Forwood said that had the error not been spotted, "the consequences of introducing formaldehyde into the first stages of fuel dissolution could have been catastrophic for THORP's internal workings – and had the potential to initiate a site accident." The Nuclear Free Local Authorities (NFLA) secretariat said it was "alarming" that Sellafield Ltd had classified the incident as a "non-radiological event." NFLA group chairman Mark Hackett said the incident "could have led to a major accident at the Sellafield Thorp plant." [3]

Nuclear waste clean-up operations at Sellafield could be taken back into state hands after a series of failings by private companies managing the site, as their 22 billion pound contract comes up for review. A consortium called Nuclear Management Partners was selected in 2008 to run the Cumbrian site for up to 17 years. But the National Audit Office and the Public Accounts Committee have both criticised delays and cost over-runs. The Nuclear Decommissioning Authority (NDA) is now reviewing whether to renew the contract with the consortium ahead of a "break" point in March 2014. The NDA said it was considering three options, including stripping the consortium of the contract and taking Sellafield back into the NDA's hands, a move that would require ministerial approval. It is understood to be drawing up plans

for how the site would be run if it opted to do so. Decommissioning operations at Sellafield are expected to cost more than 67 billion pounds over the next century. [4]

Meanwhile, the company which operates the factories where the UK's nuclear weapons are manufactured has been fined for breaches of safety laws following a fire in which a member of staff was injured. AWE plc, which operates the Atomic Weapons Establishment (AWE), pleaded guilty to failing to ensure the health, safety and welfare at work of its employees. On May 28 the company was fined 200,000 pounds and ordered to pay £80,258 in legal costs and 2,500 pounds in compensation to an employee who was injured during the fire. The charge followed a fire which broke out in an explosives handling facility at the AWE Aldermaston site in Berkshire on the evening of 3 August 2010. The incident left a member of

AWE staff with burns to his face and arm and required the evacuation of a number of local residents and closure of roads around the site as safety precautions. [5]

[1] CORE, 14 June 2013, 'Sellafield Ltd fined £700,000 for sending LLW to local landfill – largest ever fine for site' www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=319

[2] The Guardian, 15 June 2013, 'Sellafield fined £700,000 for sending radioactive waste to landfill' www.guardian.co.uk/environment/2013/jun/14/sellafield-fined-was-te-landfill

[3] Peter Lazenby, 2 June 2013, 'Sellafield bosses play down near catastrophe' www.morningstaronline.co.uk/news/content/view/full/134123

[4] Emily Gosden, 20 June 2013, 'Sellafield clean-up could be taken into state hands as £22bn contract up for review', The Telegraph www.telegraph.co.uk/finance/news-bysector/energy/10133528/Sellafield-clean-up-could-be-taken-into-state-hands-as-22bn-contract-up-for-review.html

[5] Nuclear Information Service, 28 May 2013, 'Nuclear weapons factory operators fined £200,000 for safety breaches' <http://nuclearinfo.org/article/awe-aldermaston/nuclear-weapons-factory-operators-fined-%C2%A3200000-safety-breaches>

WISE / NIRS Nuclear Monitor

The World Information Service on Energy (WISE) was founded in 1978 and is based in Amsterdam, the Netherlands.

The Nuclear Information & Resource Service (NIRS) was set up in the same year and is based in Washington D.C., US.

WISE and NIRS joined forces in the year 2000, creating a worldwide network of information and resource centers for citizens and environmental organizations concerned about nuclear power, radioactive waste, proliferation, uranium, and sustainable energy issues.

The WISE / NIRS Nuclear Monitor publishes information in English 20 times a year. The magazine can be obtained both on paper and as an email (pdf format) version. Old issues are (after 2 months) available through the WISE homepage: www.wiseinternational.org

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